Cities in the Modern World

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SUMMARY: *The archaeology of modern cities has grown enormously over the past half century, driven in large part by developer-funded urban renewal. This activity has utilized a diverse array of methodological approaches, research paradigms and scales of analysis — a diversity increasingly reflected in the pages of* Post-Medieval Archaeology. *In this paper, we review the development of urban archaeology, with a particular focus on material remains from the past two or three centuries. We emphasize the role played by commercial archaeology and the growing importance of community engagement, along with changing theoretical models and the emergence of new analytical technologies.*

INTRODUCTION

The study of post-medieval urban archaeology has become a key area of research and features regularly in contributions to *Post-Medieval Archaeology*. The introduction of developer funding through planning legislation has led to a dramatic increase in the number of urban projects undertaken and has in many ways obligated archaeologists to consider more seriously the value of the archaeology of the recent past. This has led to many important discoveries and new perspectives on past urban life. In addition, the subject has expanded from its origins in the UK, North America and Australasia to become more global in outlook. Reflecting this are journal contributions in recent years from Turkey, Serbia, Portugal, Germany, Israel, Venezuela, Mauritius, Finland, Uruguay, Chile, Greece and Sri Lanka. Due to limitations of time and space, a comprehensive review of post-medieval urban archaeology over the past 50 years is impractical and risks duplicating previous efforts.[1] Instead, in this

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article we review the development of the discipline in reference to four key themes that we believe characterize the ways in which post-medieval urban archaeology has changed over this period, and how the changes in the UK sit within a more global context. We focus on 1) the expansion of the discipline's geographical and temporal scope; 2) the impact of legislation, commercial archaeology, and public archaeology; 3) changing theoretical models and 4) the development of new archaeological methods.

In reviewing these themes, we acknowledge that urban historical archaeology now embraces a wide array of methods, techniques and theoretical perspectives, shaped by a complex interplay of research questions, site histories and scales, and perhaps most importantly, the pressures of time and money imposed by a competitive, commercial archaeological environment. As urban centres have become critical drivers of economy and society around the world, archaeologies of cities have emerged that explore the diverse material residues of urban life from the past few centuries. Despite the relentless forces of globalization and capitalism, notions of community, neighbourhood and belonging remain a central part of the human condition. City dwellers still seek personal, cultural, and environmental connections with the urban world around them, gauging similarities and differences between 'them' of the past and 'us' of today. An archaeology of cities plays a vital role in this process.

The archaeology of cities in the modern world thus relates broadly to the material residues of built-up urban areas, often where residential, commercial and industrial activities overlapped. Archaeological remains typically include domestic spaces of houses, yards, outbuildings and their associated debris, while industrial sites are dominated by factory buildings, machinery foundations and the waste products of manufacturing processes. This neat division is often complicated, however, by the layered and simultaneous historical use of buildings as dwellings, workplaces, shops and institutions. One of the defining characteristics

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of urban excavations is the frequent recovery of large artefact assemblages that represent

complex palimpsests of primary, secondary and tertiary discard behaviours. This is especially

apparent in locations with complex site histories, where rebuilding and reuse of materials is

further disturbed by the installation of sanitation and communication infrastructure, transport

systems and other services. Archaeologists working in urban environments thus often grapple

with highly complex depositional sequences where social, industrial and environmental

archaeologies converge.

GEOGRAPHICAL AND TEMPORAL EXPANSION OF URBAN ARCHAEOLOGY

One of the clearest changes that has occurred over the past 50 years has been the extension of

the period covered by *Post-Medieval Archaeology* and its geographical focus – no doubt a

recurring observation in this 50th anniversary issue. Despite the Society having had its

origins as the Post-Medieval Ceramic Research Group, the journal's first editorial in 1967

made clear that the society's period boundaries were necessarily indistinct and would likely

vary by geographical area.[2] This initial instinct for inclusiveness has seen the terminal

boundary gradually extended to include the industrial era and the contemporary past,[3] and to

have submissions accepted from many regions of the world. As a result, the journal has

become one of the leading voices in global historical archaeology. Yet these changes have

not been universally welcomed by the Society's membership, some of whom would prefer to

have retained a more focused mission statement. It must be acknowledged that the expansion

of the journal's geographical and temporal scope brings with it difficulties because of its

apparent Eurocentric focus; at its outset the journal was intended to be concerned with

'Britain, Europe, and those countries affected by European colonialism'.[4] Yet, as the

discipline has evolved, and as Western researchers have engaged with colleagues from

different parts of the world, they have encountered alternative conceptions of archaeologies of the recent past. This makes the universalising terminology (post-medieval or historical) often incongruous with the local context,[5] as well as carrying with it an implicit claim to the exclusive ownership of the past. In addition, the emphasis on colonialism is problematic due to its inherent establishment of an unequal power relationship between the colonizers and the colonised.[6] Furthermore, a strict adherence to such a focus might be seen to arbitrarily exclude some of the most interesting recent research on post-medieval urban archaeology, and reinforce the boundaries that most agree need to be dismantled.[7]

In the journal's early years, the geographical focus of post-medieval urban archaeology was primarily limited to the British Isles and North America. This is evident in Sutermeister's paper on early excavations at the abandoned French fortress town of Louisbourg in Nova Scotia and Jones' discussion of the influence on the contemporary urban landscape of southern English towns as a result of changes in the use of fire-proofing materials towards the end of the 18th century.[8] The results of urban archaeology conducted in Australia during this time were limited, with most attention paid to rural and industrial sites, failed coastal settlements and occasional mortuary remains; projects that were not reported in *PMA*.[9] While archaeologists conducted work in all of these regions, the status and acceptance of the subject lagged behind in Britain.[10] In North America, historical archaeology began to play an important role in the development and application of archaeological methodologies and theories.[11] These include James Deetz's structuralist account of how changing ideologies influenced the form of a wide range of material culture and architecture, as well as the development of 'backyard archaeology' by Charles Fairbanks, which saw a shift away from a focus on structures in support of architectural history, towards the investigation of middens and past activities.[12] Each of these subsequently led to some of the most important and

influential theoretical and methodological developments within historical urban archaeology, many of which continue to have a profound influence on the discipline.[13]

In Australia, this formative period for historical archaeology began to be recognized for highlighting the role of material culture in the formation of national identity and competing notions of 'Britishness' in a colonial context. Investigation of early contact-period sites also created links between prehistoric and historical archaeology that helped shape the notion of continuity in Indigenous occupation and survival.[14] The Bicentenary in 1988 consolidated the association between archaeology and heritage, highlighting the material foundations of settler nationalism in both urban and rural environments.[15]

In Britain, it was not until the 1980s and high-profile projects such as the excavation of the Rose and Globe playhouses in London that major post-medieval urban projects became more commonplace and the field gained greater credibility as a discipline.[16] Davey's call for a synthesis of the state of British urban post-medieval archaeology was not answered until the publication of David Crossley's 1990 book *Post-Medieval Archaeology in Britain*.[17] In the same decade, interest in post-medieval/historical urban archaeology began to emerge in other parts of the world, often influenced by the ground-breaking work that had been, and continued to be, undertaken in North America. Although historical archaeology – in its broader definition – had been conducted in some regions of Africa as early as the mid-20th century, it was during the 1980s and after that the Western-influenced definition began to be explored in urban contexts.[18] Archaeologists have since used ceramics and other material from 19th-century Cape Town, for example, to explore the transformation of British culture in a colonial context and the diverse interactions between indigenous and settler communities.[19] The 1980s also saw the overthrow of authoritarian regimes that had dominated the political landscape of Latin America, leading to a growth in research into the history of colonial cities on the continent, including Buenos Aires and Rio de Janeiro.[20]

In Continental Europe, the idea that the post-medieval period should be studied as a distinct period has been slow to gain acceptance.[21] Since the 1980s, however, there has been greater interest and research, particularly in places such as Germany, the Netherlands, Belgium and the Nordic states on the later phases of multi-period urban sites.[22] The former Soviet Union has also seen some notable research in contemporary archaeology, such as Victor Buchli's (1999) *An Archaeology of Socialism* and Robert Maxwell's work on the exclusion zone around Chernobyl, while James Symonds is undertaking work on the archaeology of the Iron Curtain in the Czech Republic.[23]

In central and south-eastern Europe, as well as Western Asia, archaeology on sites dating to the past few hundred years has often been conducted in the context of Ottoman, Turkish, or Late Islamic-period archaeology, which until recently had limited engagement with the debates taking place within Western post-medieval or global historical archaeology.[24] Despite much interesting work having been conducted, it has often failed to reach a wider academic audience. In addition, the discipline has struggled against a significant amount of public ambivalence towards this period across much of its geographical scope.[25] Other than the study of the Ottomans, the new millennium has seen the first historical archaeological investigations into the development of the major urban centres and colonial structures in the Arabian/Persian Gulf region.[26]

Southern Asia and the Indian subcontinent remains largely focused on prehistory and earlier periods of historical archaeology, although work by David Petts on colonial monuments in Lucknow and Kanpur and excavations by Ranjith Jayasena on the Dutch East India Company fort of Katuwana in Sri Lanka are important recent contributions.[27] There are also some indications that the growth of interest in the heritage industry and political issues of identity are beginning to overcome the resistance to archaeology, which is often seen as an

intellectual luxury in societies facing massive difficulties in meeting the basic human needs of many of their citizens.[28] In South-East Asia, there was growth in urban historical archaeology during the 1990s but much of this work focused on the period prior to AD 1500 and the transition from prehistoric to historic.[29] Some research, however, has focused on more recent centuries, including Skowronek's study of Spanish Colonialism in the Philippines and how it differed from that of the Americas.[30] The turn of the millennium also saw an important study of colonialism and hybridity in architecture of the town of Levuka in the South Pacific.[31]

At the beginning of the 21st century, post-medieval urban archaeology continues to expand into new geographical areas. The last few decades have also seen a wider acceptance of contemporary archaeology as being within its remit. Originating in the 1970s at the University of Arizona, Richard Gould, Michael Schiffer and others developed the notion of modern material culture studies and 'an archaeology of us', perhaps best exemplified by William Rathje's long-term study of contemporary refuse practices, which has demonstrated the value of applying archaeological methods to present-day assemblages.[32] Notable studies in the context of urban archaeology include the archaeology of homelessness, which in addition to offering new insights into the material lives of this marginalized group has also actively sought to engage its members in fieldwork and analysis.[33] Anthropologist Daniel Miller has also focused on the role of material culture in how ordinary people organize their lives in London today.[34]

LEGISLATION, COMMERCIAL ARCHAEOLOGY AND PUBLIC ARCHAEOLOGY

The rise of commercial archaeology and its current influence within post-medieval urban archaeology is one of the most significant changes that has occurred within the discipline

during the past 50 years. In many parts of the world, it is through commercial archaeology

that the vast majority of work is currently conducted.[35] This system has its origins in the

United States and the enactment of Section 106 of the National Historic Preservation Act of

1966 (NHPA). This legislated that any developments with Federal government involvement

required assessment for their potential impact on cultural resources. To meet this

requirement, as well as those resulting from other legislation, there was a dramatic increase in

the numbers of professional archaeologists employed by government agencies and

commercial archaeological organizations. By 1980, the majority of archaeologists in the US

were either professional or commercial archaeologists.[36] In addition, the legal obligation to

consider the likely effects of a proposed development on potentially significant cultural

resources older than 50 years was a significant step towards the greater appreciation of the

value of the archaeology of the recent past — particularly urban archaeology — beyond those

sites that are associated with famous people or landmark events. The rise of commercial

archaeology in other parts of the world generally occurred later, but resulted from similar

legislative changes in conjunction with the increasing neoliberal belief in the need for

commercial tendering and the desire to minimize the number of government employees.

However, there remains at least a notional degree of variation in the degree of government

oversight and regulation between different countries.[37]

In the UK, this change began during the 1980s, but did not reach its fruition until

1990 with the issuance of Planning Policy Guidance Note 16 (PPG16).[38] This resulted in a

dramatic increase in archaeological work and the growth of a large commercial archaeology

sector. However, since the global recession in 2008, there has been a major decline in

employment amongst both contractors and government in the UK.[39] Internationally, the

convergence of heritage legislation with capitalism and (urban) re-development has generated

employment for thousands of archaeologists, 'saved' many sites from destruction via

preservation through recording, and played a role in furthering heritage education. The growth of this archaeological service industry alongside conventional academic archaeology, however, has also given rise to a range of issues and problems of relevance to post-medieval urban archaeology. These include the power of capital and finance to determine heritage outcomes, the commodification of the past, and pressure to direct the intellectual study of the discipline towards a more professional training paradigm. In addition, the problems of low pay, job insecurity and challenges to the intellectual independence of professional archaeologists remain unresolved.[40] A persistent problem is also the split between practice and theory and the often hostile relationship between commercial and academic archaeology, which shows little sign of abating despite the collaborative efforts of many individuals and organisations.[41]

Unlike sites of great antiquity, archaeological sites of the more recent past are neither rare nor limited.[42] Instead, we are overwhelmed by the abundance of places and materials from the past few centuries. Nevertheless, the sheer ubiquity of places from the 19th and 20th century means they are generally less valued and thus destroyed at a rapid rate. What is needed is recognition that much of the archaeology of this 'familiar' past is important and worth preserving, offering the opportunity to create new stories about the recent past that focus on people as much as things.[43]

The dramatic increase in developer-funded excavations in recent decades has resulted in thousands of unpublished contract reports. This 'grey literature' is largely unread and often hard to access. Projects such as OASIS and ArchWilio in the UK, the Digital Archaeological Record in the United States and FAIMS and NSW Archaeology Online in Australia have attempted to address this problem by creating online digital repositories which provide not only archives of old site reports, but often ready access to extensive reusable datasets.[44] These new digital tools have enormous potential to improve the scope of archaeological research by

improving access to materials and promoting more comprehensive regional and comparative studies.[45]

Although much has been made in recent years about the lack of publication from many commercial projects,[46] such statistics are often misleading as they try to impose an academic model of publication onto the commercial sphere. As Mackay and Karskens note, many commercial projects are unsuitable for publication and have a specific function within the planning process.[47] In addition to commercial pressures with respect to time and resources, most reports follow a well-established format to answer basic questions about site history and material remains that is often difficult to combine with the requirements of research publication, such as in-depth comparative analysis or addressing specific research questions. In addition, it is important that such documents are freely accessible and in the public domain to enable informed planning decisions as well as subsequent research. Publication in pay-to-access journals or monographs should be supplemental to these technical reports in order to ensure that the results of a project are freely available so that subsequent planning decisions can be made on a well-informed basis.[48]

While some see this situation as a crisis in archaeological publishing, the traditional idea of large and expensive site reports is increasingly a relic of an earlier time in the discipline when large excavations were much less common.[49] As the profession of (urban) historical archaeology has expanded since the 1980s in numerous countries, it has forced archaeologists to consider 'the questions that count' and what it is we want to learn about the past.[50] Research agendas have evolved in response to changing priorities as archaeologists have reached out to wider public audiences. Site visits, popular books, websites and field participation are now well established tools to engage with communities that are fascinated with the past beneath their feet and who, in some respects at least, are the 'owners' of our common past.[51] Publish or perish has become public or perish.

A number of UK archaeologists in recent times have noted that despite the large amount of developer-funded archaeology that has occurred over the last few decades, most attention has focused on the Roman, Saxon and Medieval periods, with limited analysis of post-medieval sites and artefacts – and even less of post-1800 material.[52] With so much material from older periods preserved on urban sites, there has often been great pressure to remove archaeological evidence of more recent periods to maximize time and effort on earlier phases.[53] This trend has been exacerbated by a sense that post-1800 material is more or less overburden or modern disturbance, despite Britain by this stage being the centre of a global empire.[54] While a number of cemeteries from the 18th and 19th century, including St Pancras, New Bunhill Fields and Christ Church Spitalfields in London have been extensively investigated,[55] there has been comparatively little urban archaeology on a large scale of the recent past that has found its way into the published literature or wider material histories of urban areas. Fortunately, this is not universal; important exceptions include reviews of work in towns including Gloucester,[56] Norwich,[57] Portsmouth[58] and Cambridge,[59] while Sarah Tarlow has examined the archaeology of British towns and cities in terms of urban 'improvement'.[60] Extensive excavations at the Spitalfields Market site have also shed light on the religious life, architecture, sanitation and administration of this post-medieval London suburb.[61]

Despite these noteworthy exceptions, the situation in the UK stands in contrast to urban archaeology in the Americas and Australasia, where remains from the last few centuries dominate the archaeology of cities. While archaeologists in New York have traced thousands of years of human occupation,[62] places such as Melbourne, Chicago and Los Angeles were founded as modest settlements in the 19th century that soon exploded into globally important metropolitan centres.[63] Immigration and population growth saw these and similar places grow at a fast rate, raising many issues with regard to sustainable development

and urban planning. The extreme geographic spread and comparative youth of many New World cities has had important implications for their archaeological remains, which tend to be shallow and easily disturbed, and where urban downtown cores have received much of the archaeological attention at the expense of immense surrounding suburbs.

Preservation *in situ* is often seen as an important way to preserve archaeological remains, becoming in some cases the preferred choice when sites are threatened by development. This approach, however, is also open to abuse and has led to cases where sites have been 'preserved' by burying them under hundreds of tons of soil and concrete. This type of reburial makes such sites inaccessible to future generations, at least in the medium term, and risks altering the ground conditions in a way that adversely affects preservation.[64] The concept also carries with it an assumption that future generations will retain as much interest in archaeology and heritage as we do today. Rick Bonnie argues that preservation in place is about 'the equal right of every generation to interact with the archaeological record in its own way'.[65] Nevertheless, this seems to be a right denied to the current generation who are required to preserve sites in situ rather than to excavate. This view also fails to recognize just how recently legislation was introduced to require archaeology to be considered as part of the planning process, and the very real possibility that these protections will be reduced in response to pressure from developers and other interested parties to cut bureaucracy and promote industry.[66]

An alternative approach has been to excavate threatened sites and incorporate surviving structures or recovered finds into the final development in order to present the history of a site to visitors. This has been implemented effectively at places such as the Pointe-à-Callière Museum in Montreal and the Rocks 'Big Dig' Education Centre in Sydney. Such projects are beneficial in helping build and maintain local identities and communities, as well as enhancing visitor experience of history and heritage. This often includes online

digital reconstructions, which while being invaluable and highly accessible, are currently no substitute for observing and connecting with the tangible remains of past buildings, features and artefacts. This is especially the case in modern urban centres, where older, human-scale, low-level buildings and neighbourhoods are being replaced by massive office and apartment towers. Preservation of urban archaeological fabric endeavours to retain at least some connection with the material human past.

Community engagement has emerged as a vital element of urban archaeology in recent years, where professional projects are planned and carried out with the involvement of members of the public, often including schoolchildren. This trend recognizes a number of important factors, including the state/public 'ownership' of sub-surface remains in many jurisdictions, the loss of amenity that often accompanies urban re-development, the public monies at stake in such projects, and the historical and cultural connections people have with their environments. Public participation extends from initial planning and design of research questions to site survey, excavation, processing of finds, and the interpretation and presentation of results, and often involves the participation of thousands of people. Well-known examples over the years have included public projects in Manchester, Sydney and Boston [67] and the recently established *Journal of Community Archaeology and Heritage* now provides a formal medium to communicate the results of such work. Public archaeology gives a voice not only to those who lived in the past but also to those in the present, including marginalized and subaltern groups.[68]

Public engagement with urban archaeology can nevertheless come into conflict with the views of archaeologists, historians, conservators and others charged with presenting and interpreting sites and materials to a wider audience. For many individuals, their interest in the past as 'consumers' of heritage often has more to do with personal histories and immediate social contexts than with the formal history that engages the attention of heritage

professionals.[69] This represents an important shift from a passive to a more active understanding of the past. It also raises questions about the ownership of history and the multiple audiences that archaeologists address whenever they venture onto a site. People are legitimately fascinated by their own past, approaching it with a complex mix of enthusiasm, distaste, nostalgia and excitement, making personal connections between the material remains and stories from their own lives and communities. People empathize and identify more readily with the recent past than with remote times and places because they see their own history before them. Their emotional engagement with the past is as valid as the intellectual accounts imposed by archaeologists and other heritage professionals.

Public responses to archaeology and urban heritage thus intersect with notions of engagement and attachment, concepts related to the earlier notion of social significance. Attachment refers to an individual's or group's relationship with and response to physical remains and heritage places and intangible heritage and memory. Attachment to urban places and things forms through everyday life and experiences, work and living, and culture and beliefs. This has become especially important in urban contexts, where alienation and social isolation can be countered or at least mitigated by closer engagement with local community and the physical remains of the past in the present, to create attachment to place and a greater sense of belonging, identity and cultural vibrancy.

CHANGING THEORETICAL MODELS AND METHODOLOGIES

The archaeology of cities is a distinctive practise. Urban areas are unique environments for fieldwork, where 'sites' are often largely defined by the boundaries of re-development, resulting in a degree of arbitrariness in site definition. City sites typically feature complex stratigraphic deposits, extensive use and reuse of materials through time, toxic residues and

disturbance from service conduits. Excavation often recovers vast numbers of artefacts, meaning that tightly focused research questions and effective sampling strategies are an essential part of planning archaeological work.

Issues of scale have been vital to the development of urban archaeology. Ranging from individual artefacts and features through to entire cities as urban landscapes, the spatial scale of re-development and excavation has structured the nature and scope of research problems addressed. The most popular scale of analysis in urban (and many other) domains of archaeology has long been the household, based on the city allotment with house, yard and associated features. Archaeologies of households can reveal specific experiences of individuals and social groups and place them within local, regional, national and global contexts. It is also increasingly acknowledged, however, that in order to move beyond the uniqueness of each household assemblage, archaeologists need to examine artefact patterns at a wider scale, at the level of the neighbourhood or district in the same city and compare these patterns between cities around the world.[70] Eleanor Casella has recently outlined a network approach to understand the multi-scalar flows of people, technologies and commodities that characterize globalization and immigration that is highly relevant to urban archaeological contexts:[71] 'Dig locally, think globally' has emerged as a modern mantra.[72]

An important methodological development has been the rare but valuable opportunity in a number of places to excavate the archaeological remains of urban neighbourhoods when large, often neglected or run down city spaces have become the subject of urban renewal and redevelopment. This scale of analysis permits the comparison and contrast of artefact assemblages between numerous households, allowing us to trace subtle changes in consumer behaviour and discard patterns and how these changed through time. Issues of class, gender and ethnicity have also been explored in detail and when combined with detailed historical research into past inhabitants through family and household recombination, the linkage of

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sets of artefacts with specific individuals and families has provided valuable new insight into urban life and cultural patterns.[73] James Symonds has recently noted, however, that while such fine-grained analyses are well adapted to many New World cities, the much more complex stratigraphy of urban sites in the UK demands the construction of long-term narratives that link artefacts, layers and features with phases and activities.[74]

One example of a neighbourhood-scale investigation has been the Rocks in Sydney, Australia, first settled by convicts and emancipists in the late 18th century. Excavation in 1994 focused on two half-city blocks where more than 40 homes once stood, recovering three-quarters of a million artefacts in the process.[75] Researchers framed their research within a series of questions that related the neighbourhood to the city and the world beyond, including the impact of the Industrial Revolution on a pre-industrial town, gender patterns, standards of living and the changing role of government. Archaeologists also used physical evidence to contest the historical reputation of the Rocks as a disease-ridden slum.[76] Similar scales of excavation occurred in neighbourhoods at Five Points in New York, West Oakland and San Francisco in California, Hungate in York and Little Lon in Melbourne. Archaeologists used vast quantities of artefacts to challenge mythic expectations of crime and violence and re-imagine these places as vanished but once vibrant working-class urban communities.[77] Recent work on urban 'slum-life' has also explored the complex social networks that sustained community life and the interactions between poverty, mobility and transience, while new techniques in bioarchaeology have the potential to reveal the impacts of malnutrition, disease and trauma on the bodies of slum-dwellers and other urbanites.[78]

Integrated urban-scale archaeological research has also been a feature of work in the Historic District of Old Québec in Canada. For more than 30 years, archaeologists have investigated a range of sites within and around the Old City that have generated important new knowledge about the early modern period in the New World. Highlights of this work

featured in a dedicated issue of *Post-Medieval Archaeology* in 2009,[79] with numerous sites

and materials investigated in relation to forts and defence, government and administration,

trade and industry, and relations with Indigenous inhabitants and parent communities in

France. A feature of archaeological practice in Québec City has been the collaborations and

partnerships linking a range of universities and government institutions that have contributed

to a deeper understanding of colonial life in French Canada, supported by a substantial array

of archaeological monographs and site reports.[80] Recent work has also engaged with urban

environmental archaeology, utilising data on plants, animals and insects to measure the

impact of new arrivals in the Euro-Québecois period.[81]

Another important domain of urban archaeology has been its intersection with

maritime archaeology, at the interface between land and sea. In San Francisco, New York and

Wellington, New Zealand, for example, old ships were sunk or beached as part of landfill and

preserved beneath the streets and city buildings.[82] Around Sydney Harbour the heads of bays

were filled to create new land for industrial and recreation areas,[83] while small timber wharf

islands were built at Copenhagen in the 18th century.[84] Sawmill waste was used to reclaim

land at Hokianga Harbour on the North Island of New Zealand,[85] while wharves and river

walls along the Thames in London have been associated with land reclamation for

centuries.[86] Much of the Netherlands has been reclaimed from both the sea and from

riverlands, with the urban geography of cities including Amsterdam and Rotterdam defined

by their relationships to water, harbours, dikes, polders and canals. In New York, 'water lots'

were sold from the late 17th century, permitting the owners to build wharves and fill the

space behind to create valuable new waterfront land. Waterlogged conditions generally

provide excellent conditions for preservation. Excavation of these landfill sites in Manhattan

has shown that the supply of fill came from a range of sources, including ships' ballast,

residential trash and dredge waste.[87] The physical shape of cities in some cases has also been

dramatically transformed in other ways, with hills levelled, marshes drained, canals and waterways excavated and ravines filled to make the urban landscape suitable for human needs.

At a more intimate, domestic scale, the analysis of cesspit fills is part of a wider concern with public health and the archaeological implications of sanitary reform and the removal of household wastes. By the mid to late 19th century in many urban areas, cesspits were in-filled and abandoned, replaced with pan collection and sewer networks to dispose of night soil and other refuse.[88] Along with rubbish pits and in-filled wells, cellars, cisterns and building voids, these 'clearance groups' have drawn the attention of archaeologists due to the large quantities of well preserved material they often contain and the insights they offer into consumption and hygiene behaviours.[89] Careful analysis of such material has also helped to refine artefact typologies, dating patterns and knowledge of manufacturing techniques.[90]

Excavators have usually described cesspit fills as single event deposits, often the result of a household clean-out or the secondary deposition of stockpiled material, rather than the accumulation of years of human and domestic waste.[91] Archaeologists have used cesspits to compare households and study consumption patterns, diet and health, along with the growing distinctions in the 19th century between night soil, organic waste and inorganic rubbish.[92] Fill deposits can be used to interpret the life cycles of properties and household economies, a task often complicated by high turnover rates in tenanted buildings and the difficulties in linking fills to families.[93] In some middle-class contexts, however, longer-term residencies have provided a closer connection between material remains and wealthier occupants.[94] Jacqui Pearce and others have also used fill deposits from inns to examine their social role in 18th and 19th-century society and compare how the material differs from domestic assemblages.[95] Pits need not, however, be regarded simply as passive receptacles of waste. Craig Cessford has described a well in Cambridge used in the 17th century that

incorporated in its construction both contemporary materials as well as 13th-century stonework and 14th-century timber. The story of the well reinforces the long temporal span of many urban archaeological features, their history of reuse, and the relationship between construction in one place and destruction in another.[96]

In recent decades, archaeologists have used these different scales of analysis in urban contexts to investigate the notion of identity, a complex amalgam of class, gender, age, ethnicity and language. Post-medieval urban archaeology has sought to disentangle the multiple strands of personal and group identity by severing the simple link between different aspects of identity and material culture (pots do not equal people), and by challenging stereotypes of minority groups and communities.[97] Archaeologists have challenged the conventional historical perception of urban 'slumlands' as dens of squalor and violence, using rich artefact deposits to develop more nuanced and complex interpretations of life in inner-urban areas, especially in the 19th century. While over-crowding, dirt and disease were common features of life in these places, they were also occupied by skilled working people who created homes side-by-side with migrants from around the world. Urban archaeologists have uncovered the remains of not only tiny buildings, leaky cesspits and open drains of working-class neighbourhoods but also the ornaments, dinner services, sanitary improvements and educational materials they purchased to offset the hardships of daily life.[98]

THE DEVELOPMENT OF NEW ARCHAEOLOGICAL METHODS

The methods and methodologies of urban archaeology in the 21st-century have changed substantially in many ways over the past 50 years, in common with most other domains of archaeological practice. These developments have been summarized in detail in numerous

other publications.[99] In this section, we highlight some of those we consider particularly notable.

NEW TECHNOLOGIES

The development and adoption of new digital technologies has transformed many aspects of archaeological practice and have enabled new methods of recording, analysis and reporting. In addition to the ubiquity of personal computer devices, digital photography has largely replaced film, and data sharing and dissemination of reports via the Internet has become commonplace. In the UK, the Historic Environment Record (HER) or Urban Archaeological Database (UAD) has superseded the former Sites and Monuments Record (SMR) to provide searchable databases of heritage assets and previous fieldwork for each area of the country, often via the web. Geographical Information Systems (GIS) have also been used by archaeologists to explore the spatial geographies of the recent (and remote) past.[100] This approach is especially useful when the physical location of roads, buildings and other features is vital to understanding their historical significance. Census returns and property records, for example, provide quantitative data that are geographical in origin and which can be mapped to generate new insight into the spatial and temporal relationships between people and places through time.[101] The technology also allows the incorporation of paper maps into a digital environment to create dynamic views of past places and landscapes. Historical GIS is important for assessing the probable location of earlier places, and when used with a GPS-enabled tablet device it becomes possible to literally 'see' and walk within the landscape originally depicted.

Field practice has also been transformed by the use of dGPS and remote sensing. Geophysical survey techniques including resistivity, magnetometry and ground penetrating radar have become well established in archaeology over the years as an aid to identifying

buried remains and forming more focused and strategic excavations. Many results are reported in journals such as *Archaeological Prospection* and *Journal of Field Archaeology*. In urban historical environments, one of the most valuable and efficient applications of remote sensing has been in cemeteries, where various approaches have been used to locate burials.[102] All of these techniques, which generally rely on measuring the resistivity or conductivity of signals or pulses passed through the earth, are affected by soil types, surface obstacles and the nature of buried materials. In built-up urban contexts, where sub-surface cultural matrices are often highly complex and disturbed, several techniques can be used in conjunction to offset the limitations of a single approach.[103]

Environmental Archaeology/Archaeometry

Over the past 50 years, environmental archaeology has emerged as a distinct discipline that has led to the development of a range of new sources of evidence about life in the past such as biomolecular archaeology, microstratigraphy and archaeological chemistry.[104] New developments in information technology have also facilitated data sharing and the creation of reference databases such as the Animal Bone Metrical Archive Project (ABMAP) to assist in analysis and interpretation.[105] One of the most important changes that have occurred has been the development of scientific dating methods such as accelerator mass spectrometry (AMS), optically stimulated luminescence (OSL) and dendrochronology, which have become more accurate and practical due to the reduction in the size of samples needed and the greater affordability of analysis. Geochronological dating of multiple samples is now a routine part of many archaeological projects, which has transformed our understanding of archaeological sites and materials.[106]

Recent years have also seen significant advances in exploiting the research potential of plant remains (especially grains and seeds) and pollen, as part of a wider engagement with

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biological and environmental archaeology. A dyeing vat from 17th-century Copenhagen, for example, was subsequently backfilled with material that preserved the remains of more than 100 plant species. Analysis of this material has revealed changing patterns of household consumption and the introduction of numerous new foodstuffs to urban Danish households.[107] Numerous fruits, cereals, herbs, nuts and weeds recovered from a 16th-century castle in Flanders revealed the diversity of plant foods available even during a time of war.[108] The use of archaeobotanical samples, in conjunction with stratigraphic, faunal and other evidence, can help to date deposits and provide detailed information about household diet and health.

Despite these advances, however, environmental archaeology from its outset developed largely in isolation from many important theoretical developments that took place within the wider discipline, retaining its pre-existing uniformitarian assumptions. In recent years, there has been more attention focused on how best to incorporate archaeological science within post-processual approaches.[109]

Excavation Methods

Excavation methods and methodologies in the 21st century betray considerable diversity in approach. They are influenced as much by disciplinary tradition and personal preference as by an informed methodology, institutional policy, or the various guides to best practice. For example, while the differences between North American and British field techniques are relatively well known, there remains considerable diversity within each of these national groupings.[110] In Britain, there is significant variation based on the degree to which an organisation or archaeologist has adopted single context planning, as developed by Edward Harris and the Museum of London.[111] In many — if not the majority — of cases, the methodology proposed by Harris has been modified so that multiple context plans and the

recording of physical sections (either through the partial excavation of features, the use of baulks, or the recording of cumulative sections) remain an essential part of field practice.[112] Added to this is the complication that many post-medieval urban excavations conducted as part of the planning process are not undertaken as open area excavations but as trenches. Furthermore, commercial open area excavations frequently have a greater degree of spatial and time constraints than research and volunteer excavations.

Although many archaeologists in Britain have not fully adopted Harris's methodology, the Harris matrix, or one of its derivatives, has become widely accepted in British urban post-medieval archaeology as an essential element of a site's record. There is also widespread acknowledgement of the stratigraphic importance of interfaces.[113] Harris's influence clearly goes beyond Britain and in many cases other countries have adopted the ideas of the Museum of London and Harris more comprehensively and rapidly than in the UK.[114]

Variations in field methods, sometimes of the same site, potentially create a significant barrier for researchers attempting to conduct comparative analyses using the vast amount of grey literature and archaeological collections.[115] This is not only in relation to academic and amateur projects, as is sometimes suggested.[116] The preference for a trowel and mattock over a long handled shovel and a sieve (as is commonplace in North America) largely relates to pedagogical tradition, while practices such as the partial excavation of features or determining the number and size of evaluation trenches often has little to do with sound archaeological reasoning and more to do with commercial pressures.[117] The speed with which many sites are evaluated or excavated is as impressive as it is problematic, for variations in the expertise of individual diggers can have a significant influence on the identification and recording of contexts, finds and features. These variations, often exacerbated through the use of pro-forma context sheets where rapid judgements are required

to be made, and where expressions of uncertainty are discouraged, will often be largely invisible in the site record and resulting reports. Problems such as these can be minimized where there is adequate supervision, training and opportunity for discussion; yet these require time and resources that are in short supply and show little sign of increasing.[118] Such issues have led to experiments in alternative methods of recording, including the use of tablets, video, stereoscopy and encouragement towards more descriptive and self reflective recording by individual excavators, but these ideas, even where they have been successful, have yet to be widely incorporated into post-medieval urban projects.[119]

Archer and Bartoy note that there has been a relative lack of discussion on the methods and methodologies used in post-medieval archaeology, in contrast to the debates that have taken place in relation to archaeological theory.[120] Although it is often said that post-processual archaeology has not influenced fieldwork in the same way as New Archaeology, the recognition that excavation is an interpretive process is quite widespread among British archaeologists.[121] However, it seems true that the epistemological issues that were so important to processual archaeologists no longer seem to be of such concern.[122]

PROSPECTS FOR CITIES IN THE MODERN WORLD

Post-medieval urban archaeology is now a rich, diverse and global domain of research. The last few decades have witnessed a dramatic increase in the amount of work being undertaken, particularly in a commercial context, and the subject has gained greater acceptance as an important field of study. Yet, since the global recession of 2008, there has been a major reduction in archaeological employment across commercial, government and academic institutions within the UK. Combined with the withdrawal of funding for university students and a political desire to streamline the planning system, the discipline faces many challenges

in the years ahead. It is therefore disappointing that there remains ongoing rivalry, if not

sometimes outright animosity, between the commercial and academic sectors. We hope that

the collaborations that have taken place on urban projects in London,[123] York,[124] Sydney,[125]

Melbourne,[126] New York[127] and elsewhere will become the norm rather than the exception.

Efforts to increase the accessibility of grey literature and datasets such as OASIS will

contribute towards this goal. New digital technologies including reusable data repositories

will facilitate synthesis, analysis and comparison of the large assemblages and vast datasets

often generated in urban archaeology, leading to better understanding of materials and the

ways in which goods, people and ideas flowed around the world.

Greater academic and commercial collaboration will benefit from a recognition that

both sectors often have differing aims and areas of expertise. Rather than trying to make

commercial archaeology more academic and academic archaeology more commercial, it may

be more productive to embrace each domain as complementary but distinct. There is great

potential for such projects, especially in the UK, where the abundant material remains of the

more recent 'familiar' past have often seemingly obviated the need to explore the domestic

and the everyday, at a time when people produced, consumed and discarded more goods than

ever before.[128] There remains much work to be done on understanding the urban development

of Britain and its colonies at a time when the British Empire ruled much of the world. Not

least of this involves understanding the growth of suburbs, which emerged in the 19th century

around city cores, a process consolidated by railways and amplified in the 20th century by the

automobile. At the same time, poor working-class neighbourhoods grew around the

manufacturing centres of Sheffield, Manchester, Birmingham, Leeds and London itself.

Urban landscapes expressed social divisions based on class, money, employment, education

and opportunity, while the fabric of cities was transformed by industrialization, immigration

and expanding global trade. Archaeological studies in the UK have begun to recognize the

rich potential of exploring the relationships between social life and industrialisation in Manchester,[129] London[130] and Cheshire.[131] 'Garden houses' have also been analysed as rural retreats from the busyness and pollution of city life, and as an important element of elite merchant culture and identity in early modern Bristol and London.[132] At the other end of the socioeconomic scale, archaeologists have investigated the contents of an abandoned council flat in terms of late 20th-century social disenfranchisement and alienation,[133] and engaged with contemporary homelessness to improve public policy.[134] An archaeology of the suburbs can explore the material and cultural patterns of life where so many urban dwellers have lived, at the interface between the city and the country.

Cities are among the most visible artefacts and symbols of human power. They embody immensely intricate networks of relationships between people and things, places and institutions. Yet cities are not separate from their rural hinterlands and the wider world beyond. Rather, the urban, suburban and rural exist in close relation, each linked by the provision of markets and services and the dynamic exchange of people, goods, ideas and capital. A new approach to historic urban landscapes, adopted by UNESCO in 2011, seeks to understand better the relationships between a city's natural, cultural and human resources and the wider world beyond. The archaeology of cities must recognize these connections between urban and rural landscapes in developing portraits of their shared world.

The need to understand the material and historical development of cities has never been greater, with more than half of the world's population now crowding into urban centres.[135] The provision of housing, employment, infrastructure and services has challenged authorities for centuries and their responses, both successful and otherwise, have resulted in an extensive material legacy in the form of deposits, buildings and entire urban landscapes. Problems and issues confronted over the years are being and will be faced again, leaving in turn further layers of evidence for archaeologists of the future to ponder. The historical

archaeology of cities has created a rich, diverse and compelling set of narratives to challenge conventional understanding of urban lives in the past. As a discipline, we must continue to draw on the material lessons from the past to confront the urban future that awaits us.

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