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PLAGUE AND PREJUDICE: ARCHAEOLOGY, COVID-19 AND THE RESURGENCE OF SOCIAL JUSTICE MOVEMENTS

RESEARCH PAPER

Rubble Archaeology on the North Edinburgh Shoreline: Creative Research in the Time of COVID-19

Jonathan Gardner

Abstract: This photo essay describes how a COVID-19 lockdown led to the creative investigation of an unlikely archaeological site: Royston Beach on the shoreline of north Edinburgh (Scotland).

Much of the Beach and the land behind it was reclaimed from the tidal estuary of the Firth of Forth between the 1950s and 1990s using vast quantities of demolition rubble produced by the reconstruction of the city. This material – most likely produced from 'slum' clearance and factory demolitions – comprises a heterotemporal jumble of hundreds-of-thousands of bricks, eighteenth and nineteenth century sandstone building fragments, mid-twentieth century concrete foundations, asbestos, plastic waste and much else besides. While some of the reclaimed land was built upon in the 1970s, a large part of this dumped material is now eroding into the sea as tides and storms grow more extreme.

Royston Beach became part of my research project (a three-year, cross-UK comparison of waste-modified terrain entitled, 'Reimagining British Waste Landscapes') as a result of travel-restrictions due to lockdowns. Though emerging from a period of restricted movement, my experiences investigating the Beach fundamentally shaped my approach to understanding the archaeology of waste landscapes and my methodological approach for this ongoing project.

Using a combination of traditional archaeological photography and creative research, in this paper I explore the site and follow the complex spatio-temporal 'itineraries' of waste materials.

Keywords: Rubble, Edinburgh, Waste-Modified Landscapes, Bricks, Photography, Itineraries

Introduction

This paper provides an overview of a piece of unplanned research and the formation of the methodology that emerged as a result in the wake of the COVID lockdowns of 2020 and 2021 in Edinburgh, Scotland. This paper also acts as something of a record of my academic response to a pandemic that is already fast receding into memory, even while the ravages of COVID-19 remain with us. This is not, however, an 'archaeology of COVID' paper, where I use archaeological methods to record the traces of the pandemic itself (e.g., d'Alpoim Guedes *et al.* 2021; Magnani *et al.* 2021; Schofield *et al.* 2021; Witcher 2021). Instead, I want to show how something unexpected emerged from the pandemic in my own approach to contemporary and historical archaeological sites and material and to explore the results this produced. Below, I discuss how pandemic lockdowns prompted a 'pivot' in the kind of archaeological research that was possible, and the emergent effects this had on my ongoing research project 'Reimagining British Waste Landscapes' (October 2020–June 2024).

I begin with an overview of the project itself and its initial conventional methodology, before turning to a strand of the project that emerged at Royston Beach on the shoreline of north Edinburgh: an object-itineraries (Joyce & Gillespie 2015) and a creative based sub-project called 'Brick Holidays' that has outlasted the lockdowns and continues at the time of writing (Autumn 2023).

Reimagining British Waste Landscapes: the project and the pandemic

The context of my pandemic-directed pivot was the commencement of my Leverhulme Trust-funded Early Career Fellowship at Edinburgh College of Art (University of Edinburgh) in Autumn 2020. The original intention for this (then) three-year project had been to examine places that had been wholly or partially constructed from waste materials since the Industrial Revolution in Scotland, England, Wales and Northern Ireland. Such sites, including 'artificial' hills, spoil heaps, reclaimed ground and other anthropogenic waste-shaped terrain, can become revalued and reimagined for different purposes. These include valuation as habitat, forms of natural, cultural and 'hybrid' heritage, and as spaces of artistic or other creativity. My originally planned methodology incorporated contemporary archaeological and critical heritage studies derived approaches, including on-site fieldwork, photography, archival and art historical research, mapping, participant

observation and interviews (these building on earlier work; see Gardner 2022: 2). To some extent much of this approach has persisted, though the range of sites and the degree of human participant-based methods was reduced by pandemic restrictions.

The project began in October 2020 (seven months after the World Health Organization's declaration of the pandemic), just before a second major UK lockdown that lasted between November 2020 and April 2021. This second lockdown meant that, under Scottish Government legislation (Scottish Government 2020), we were not allowed to leave our local area for non-essential purposes to limit the spread of the virus. While I did not seek official clarification, I was fairly confident that my planned archaeological research on waste landscapes across the UK did not count as an 'essential' reason to leave Edinburgh. Thus, beyond continuing with an online literature review (given libraries and archives would remain closed until the summer of 2021 and in-person human participant research was effectively illegal), I found myself rethinking the project.[1]

Given the research focussed on comparisons of waste-modified sites, I decided to search for a local alternative to those I had initially identified around the UK. This had to be somewhere I could (legally) visit and where I could utilise at least some of my planned methods. The alternative site that emerged – Royston Beach – had actually presented itself during daily walks in the first UK lockdown (March–June 2020) but it was not until the research began, and the second lockdown, that I realised its importance to the project.

Royston Beach: *sous les pavés, la plage!*

Royston Beach is located on Edinburgh's northern shoreline, far from the World Heritage Site of the 'Old and New Towns of Edinburgh', and, in non-pandemic times, the over-touristed, Instagrammable streets of the centre. The Beach lies in the district of Granton, a mainly residential and post-industrial area. Granton and the surrounding districts' of Royston, Pilton and Muirhouse have long been 'territorially stigmatised' as peripheral, 'problem' districts by the city (Kallin & Slater 2014), the media and in literature.[2] This is partly a result of these areas' recent high levels of

[1] I acknowledge my privileged position during the pandemic in being able to continue with this project, having security of employment and housing, and not being immunocompromised. I recognise that for many people this was not the case.

[2] The estates of Muirhouse feature in Irvine Welsh's novel about Leith heroin addicts, *Trainspotting* (1993) and Danny Boyle's later film adaptation (Boyle, 1996).

deprivation and poverty and, particularly in the 1980s and '90s, issues with drugs and crime. The roots of this poverty and stigmatisation arose partly from twentieth century housing policies that marginalised people on distant estates (following the 'slum' clearances discussed below), and decades of underinvestment in poorly built and serviced properties, as well as a consequence of rapid deindustrialisation and mass unemployment from the 1970s (Johnston-Smith 2019: 111; Kallin 2018; Mittler 1999). Nonetheless, despite ongoing challenges, the area has long been vibrant in its strong social and community spirit and political activism (Duke 2018; see North Edinburgh Social History Group 2011), and hosts many community organisations and centres.

Royston Beach (sometimes known as 'Granton Beach') lies immediately west of the western breakwater of Granton harbour (Figure 1) and comprises around 2.5 hectares between the low watermark and the land boundary. The reason it caught my attention for this research during the lockdown was because the majority of it is covered by demolition rubble several metres thick – comprising bricks, sandstones, concrete and lesser quantities of other building stones, asbestos, plastic and metal, and is thus a truly waste-modified landscape.

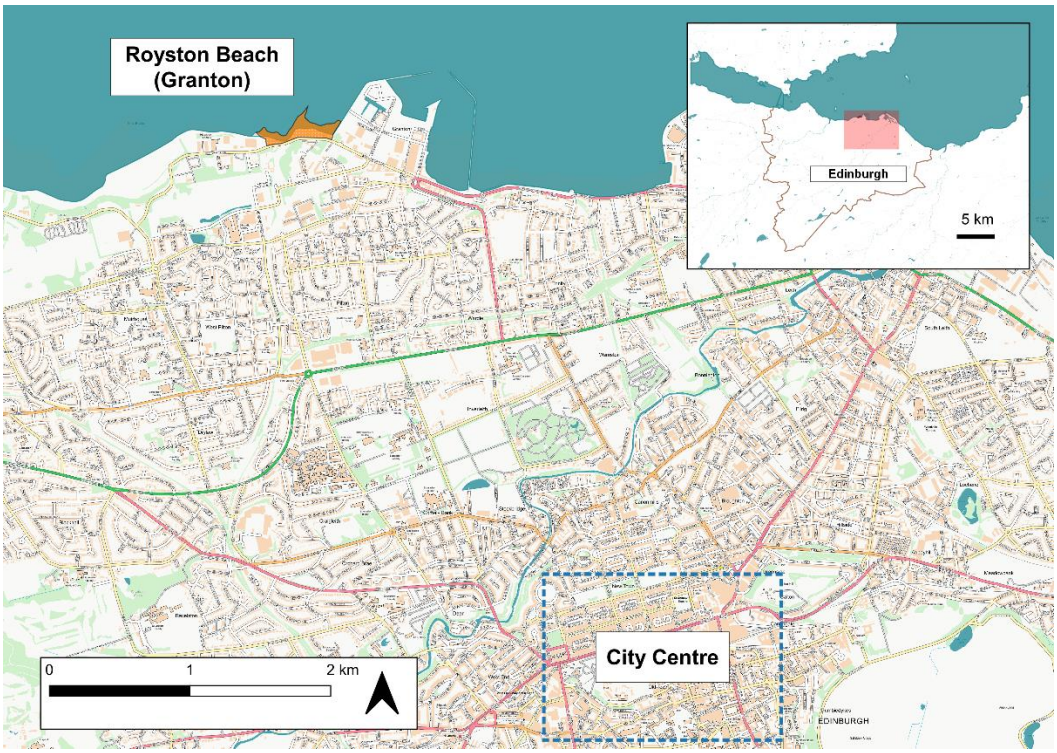

Figure 1: Maps showing the location of Royston Beach in comparison to Edinburgh's boundaries (inset map) and the city centre. The Beach lies adjacent to the now partially-infilled Granton harbour. Polygons by the author. Contains Ordnance Survey data. © Crown copyright and database right 2023. Open Government Licence.

Figure 2: The author photographing bricks on Royston Beach in 2021 (post-lockdown). The former Granton Gasworks gas holder is seen in the background to the southwest. Photograph by Beatrijs de Groot, CC BY-SA-NC 4.0.

Prior to the present study, Royston Beach does not appear to have been discussed in any academic literature and is not even named on maps, with the exception of its largest rock formation, 'General's Rock'. This 100-metre-long ridge splits the Beach into two bays. This is named for the Earl of Hertford, Henry VIII's general who landed an advance force here on 3 May 1544, before proceeding to burn down much of Leith and Edinburgh, along with many of the surrounding settlements in the so-called 'Rough Wooing' of Mary Stuart (Mary Queen of Scots; see Anonymous 1886 [1544], 6).

Rubble itineraries

A useful theoretical foundation for my work is found with the concept of the object 'itinerary'. Offering an alternative to the commodities-focus and anthropomorphism of the object biography concept used in archaeology since its emergence in the 1980s (Kopytoff 1986; Gosden & Marshall 1999), object itineraries allow for a broader notion of the 'agential possibility' of objects and materials, beyond only their

resemblance to and intermingling with human lives and networks of exchange (Barad, quoted in Joyce 2015: 21). Itineraries are both 'methodological approach and a representational trope', accounting for and narrating objects' existence, movement, transformation and persistence beyond only human scales (Joyce 2015: 23). In other words, in an itinerary of a material like demolition rubble, we can try to follow its origins as geological material, its human-led manufacture and usage in construction, its demolition and discard, as well as its reuse(s), while trying to reckon with its (majority) existence outside of human intervention.

Drawing on this, my fieldwork was intended to answer the following questions: *why* is all this rubble here? *Where* did it come from? *When* did it get here? *What* is the significance of the differences in materials (different areas of the Beach contain different proportions of brick, stone or concrete, seemingly indicating different episodes of demolition and dumping)? I was also interested in how the Beach was 'reimagined' and revalued by humans, but also what the material did for animals and plants, and how it had 'acted' on its own in the decades it had lain here.

Initial work

In late 2020 and early 2021 I conducted archaeological mapping and documentation of the Beach, including spreads of demolition material (Figure 2), reuse of rubble in temporary or permanent structures, artworks or other creative uses (e.g. graffiti, sculpture; see Gardner In Press), and functioning and disused infrastructure. In the absence of written records, I hoped these features might provide an insight into how this material came to be here, as well as revealing contemporary uses of the area.[3]

I used Qfield, an open-source mobile GIS app, for mapping and feature recording (Figure 3). This allowed me to record data that could later be downloaded to a QGIS database. This effectively provided a geo-located digital 'context sheet', with different fields for feature type, materials, dimensions etc.[4]

[3] Most of reclaimed land behind the Beach was not investigated as it remains fenced off for the extant concrete plant and disused warehouses. The fill beneath these buildings (an area of c. 9,000 square metres) is likely to be very similar to that investigated on the Beach (around 16,000 square metres). It is unclear how decisions were made in the 1970s as to where these buildings were constructed.

[4] I developed this based on guidance at https://isaacullah.github.io/A-mobile-field-data-collection-workflow/. Other Qfield-based approaches for archaeology are described in several recent publications (e.g. Fábrega-Álvarez & Lynch 2022; see Magnani *et al.* 2021 for a COVID-specific example).

I also decided to photographically (Figure 4) and documentarily record a sample of the variety of bricks on the Beach using a customised QGIS/Qfield form. These bricks are highly diagnostic with visible brick stamps (giving the name of the producing brickworks) establishing where (and sometimes when) they were manufactured using the online 'Scottish Brick History' database.[5] Such recording could obviously not reveal which buildings they once formed a part of however.

While this work was systematic, I began to increasingly question if this was the right approach to what was, in effect, a pile of rubble, though one that seemed to have taken on a life of its own. Furthermore, the sheer quantity of the material was overwhelming. Even without the issue of the ever-shifting deposits through tidal and storm conditions, if I was to record even 10% of the bricks with a visible stamp, I estimated I would be on site for months if not years.

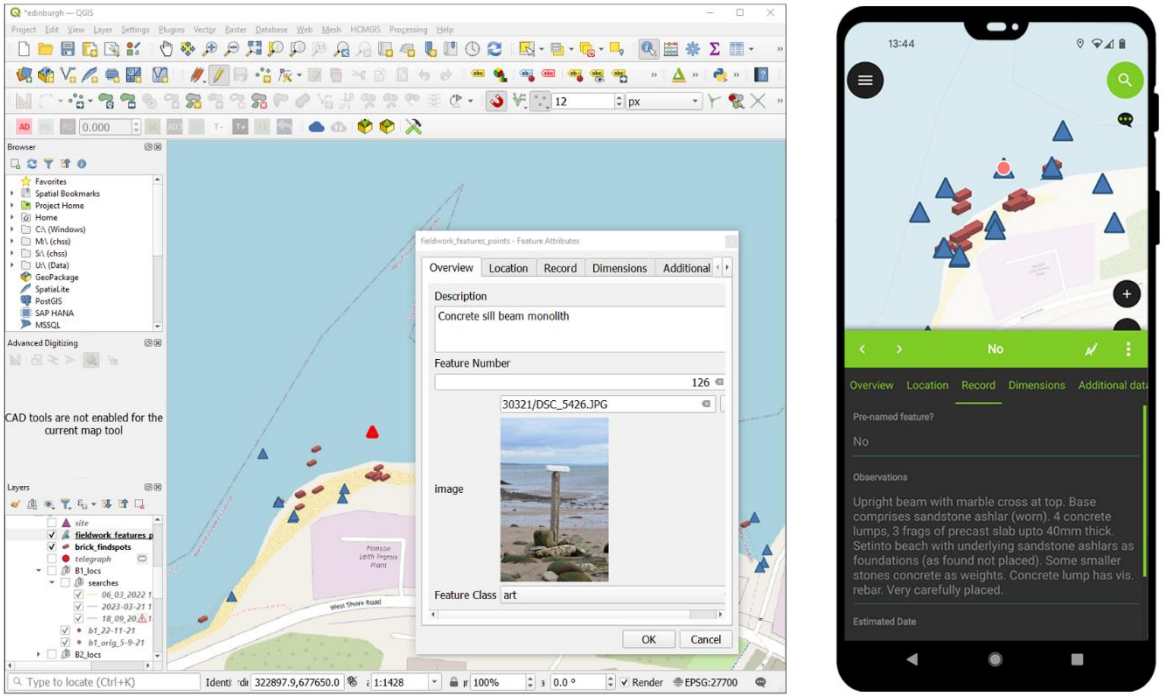

Figure 3: Left: QGIS 3 window showing Royston Beach plotted fieldwork features (blue triangles) and a selected feature (red highlighted triangle) with an open context recording form and geolocated image (a piece of found beach 'artwork'). Right: Screengrab of the mobile app QField that used to plot and capture the same data originally. The red brick symbols here and in the QGIS window are a separate layer used to record individual bricks with brick stamps (see Figure 2). App interfaces reproduced under GNU GPL licenses (QGIS and opengis.ch). Backdrop mapping ©OpenStreetMap contributors.

[5] https://www.scottishbrickhistory.co.uk/

Figure 4: Ten varieties of recorded bricks with readable stamps on Royston Beach (out of a sample of 30). The stamps are (clockwise from top right) SCOTTISH TERRA COTTA Co, NEWMAINS; ETNA; S & KC BUCCLEUCH; NIGHTSTOR; HOOD; NELLFIELD; NIDDRIE; NCB NEWTON; DOUGAL WINCHBURGH. These were made in now-closed brickworks from across Scotland's Central Belt, but it is uncertain which buildings they were once part of. Photographs by the author.

Matt Edgeworth has talked about the need for archaeologists to develop methods for the smallest ('nano') and largest ('mega') scaled sites and artefacts – from nanometre-sized transistors to kilometre-tall underground salt mines – and reminds us of the challenges humans face, as 'middle-sized' objects, in comprehending the vast array of anthropogenic material in the world, past and present, and its interaction with existing geological and organic systems (Edgeworth 2010: 147). My problem with this rubble-strewn beach was less one of these mega- or nano-sized physical scales but instead one of a material excess. This idea of an archaeological scale based on an *excess*, versus a *dearth* of quantities of material culture on sites remains undertheorised (but see Witmore 2019). To expand more on this is beyond the scope of this paper, but it is clear that there are limits to traditional archaeology approaches for contemporary archaeological research. As Edgeworth has discussed more recently (2023), while methods may be 'scaled up' and 'down' to some extent, there remains a conceptual challenge around the sheer excess of the contemporary and recent past that remains to be addressed in archaeology.

My distinction of the Beach into nature and culture -- what got recorded and what did not (bricks, concrete [Figure 5], sandstone blocks versus sand, geology, water, plants) – was also overly-simplistic. The rubble is now the dominant 'geological' material of the site, in area far exceeding the sand or rocks below and wholly reshaping the pre-existing coastline, albeit now being gradually re-reclaimed by coastal erosion (after Byrne 2018: 285). I began to see that, though originally anthropogenically produced, this waste was inseparable from what was now a habitat and the form of the coastline. Furthermore, as I discuss shortly, the rubble was connected back and forward through time as an array of 'geosocial' materials (Yusoff 2017), inextricable from the spatial and social strata of the city and its population, as well as a deeper Scottish industrial and mineralogical past. Thus, in the Spring of 2021 – having recorded numerous major features of the Beach and a sample of thirty different brick and tile varieties – I decided I needed to move forward with a new approach that took this *heterotemporal* (*sensu* Dawdy 2016) and hybrid history into account.

The city in the sea

While deciding how to proceed, my archival efforts to gain an insight into where the rubble had come from drew something of a blank. However, a phone discussion with

the City of Edinburgh Council's Environmental Health Officer did offer a tentative explanation (*pers. comm.* 2021). They told me that at least some of the dumped material on this coast was alleged to be the product of large-scale slum clearances undertaken from the 1960s onwards. Significantly (albeit anecdotally), the section of landfilling immediately west of Royston Beach was said to be from the now-demolished neighbourhoods of St. James and Greenside in the city centre (now within the World Heritage site area). I then found other accounts that suggested material from the 1950s-onwards redevelopment of Leith was also dumped along the shoreline and in Leith and Granton docks until at least the 1970s (Gillon *et al.* 2014)[6]. A 1960s planning brochure, though not detailing the exact origins of the material, also suggests that the land at Royston Beach 'won' from the sea (the current beach area and 1.4 ha behind it originally below sea level) was intended for industrial development (The City & Royal Burgh of Edinburgh 1966: 10–11).

Figure 5: Large triangular 1950s/60s concrete foundations lying on their sides (the piece in the foreground has bent steel rebar at right, indicating the original top surface). Located on the eastern bay of Royston Beach. The reclaimed land and a disused warehouse lies behind. One metre scale. Photograph by the author. CC BY-SA-NC 4.0.

[6] NRS DD17/1690 - Forth Ports Authority: Long Range Plan [1972/3], Part 1, 31–34.

Despite this important new lead, I came to realise that it would be almost impossible to establish which individual buildings a given stone, brick, or piece of concrete had come from. As discussed above, it became apparent that trying to use traditional methods in such contemporary archaeological contexts was not likely to yield satisfying results. However, this is not to say the materials here could not speak to a broader kind of material itinerary or narrative; one more interesting that simply recounting what building was knocked down and when.

Brick Holidays

The rubble on Royston Beach is slowly dissolving into the sea; the blunted bricks, dissolving ashlars, and rounded concrete slabs the result of decades of abrading against each other in the tideline. With the bricks, this patination reveals a colourful variety in their fabrics and differences in firing. This made me wonder how long it took for a sharp-edged brick (even if extracted from a demolition site) to resemble a worn beach pebble, and, further still, to return entirely to its constituent clay mineral components.

I decided to observe this process of patination of bricks in real time, while attempting to engage with this complex itinerary from the mining of minerals to the production of a dump site. As much of this past was outside of human awareness, in addition to the archive and archaeological work already conducted, it necessitated a degree of speculation or a form of 'fictioning': 'the *deliberate* imbrication of an apparent reality with other narratives' (also Burrows & O'Sullivan 2019; O'Sullivan 2018: 53; my emphasis). This was not to 'make up' the story of these materials, but, within the frame of the long tradition of archaeological speculation (Marila 2020), to propose a story of how these bricks continue to weave together different places, times, people and organisms. This approach also embraces the inherently 'heterotemporal' nature of all archaeological deposits (Dawdy 2016: 8); materials from multiple, overlapping pasts remaining in – and sometimes interrupting – the present (see also Gardner 2022: 37, 220).

This phase of the research came to be named 'Brick Holidays' in recognition of its active intervention in the itinerary of these materials by moving them temporarily to different places. I framed this as a process of 'creative research'; something – as Doug Bailey (2014: 247–8) has argued in favour of – neither art nor archaeology but which

nonetheless provided an open-ended opportunity for interpretation and engagement with sites and their materials, and resisting a final or authoritative explanation.

Figure 6: Top: NIDDRIE brick as found on Royston Beach. Bottom: WHITEHILL brick on Royston Beach, 5 cm scale. Both bricks were removed by the author and replaced by new bricks in the same locations (bricks B1 and B2 respectively). Photographs by the author. CC BY-SA-NC 4.0.

Going on holiday

My approach with Brick Holidays is derived from observation of a tension between the relative transitoriness yet material fixity of bricks; in other words, how they once formed sturdy buildings yet at other points could move not only across the city, but also up and down the Beach itself; how they were made of Carboniferous clays hundreds of millions of years old yet were now gradually eroding into a rising sea caused by the burning of coal, oil and gas from those self-same deposits. This research is therefore divided into two segments. *Part 1* focuses on how new bricks left on Royston Beach change over the course of the project, while *Part 2* traces the longer itineraries of historic bricks back to their places of manufacture and speculates on their future fate. In both cases the tool kit is simple: two historic bricks and two new replacement bricks (with a spare), some drawing film and pencils, a bicycle, a handheld GPS, and a digital camera.

Part 1

To begin, I identified two worn historic in-situ bricks on the beach (i.e. unmoved and unaltered by me) with readable brick stamps that were located below the high-water mark and that were produced by colliery-based brickworks located close to Edinburgh. These, a NIDDRIE and a WHITEHILL brick (Figures 6 and 7) were chosen because of the relative ubiquity of these makes on the Beach,[7] their extensive usage in construction across Edinburgh and the Lothians, and for the fact that their brickworks sites (both now redeveloped) would be easy to access in *Part 2*.

I commenced on 6th September 2021 by photographing these two bricks *in situ* on the Beach (Figure 7) and then removed them for the remaining duration of the research project. Following this removal, I cleaned, drew and photographed them; treating them as a conventional archaeological objects (Figure 8). This level of archaeological attention for what were ordinary and ubiquitous objects encompassed something of my attempt to bridge what was 'real' archaeology and what was a more speculative or creative response. Artists such as Mark Dion have famously 'played at' being archaeologists, though Dion himself claims no 'mastery' or imitation; rather, saying that it should be 'obvious that I am a dilettante struggling to find my way' (quoted in Bailey 2014: 233). I too felt like I was playing a role; intentionally

[7] I retain the original capitalisation of the brick stamps when referring to the bricks as individuals (i.e. NIDDRIE), but revert to capitalisation of only the first letter when in reference to the brickworks or district (i.e. Niddrie).

'overdoing' the level of my recording. It may have been the strange years in which I worked but, somehow, in removing these bricks, I also came to think of this as a 'break' from the tides and storms – a holiday – from their 'work' of slow disintegration.

Figure 7: Top: WHITEHILL brick removed from Royston Beach. Bottom: NIDDRIE brick. Both removed on 21st September 2021 then cleaned and photographed as part of Brick Holidays. 10cm scales. Photographs by the author. CC BY-SA-NC 4.0

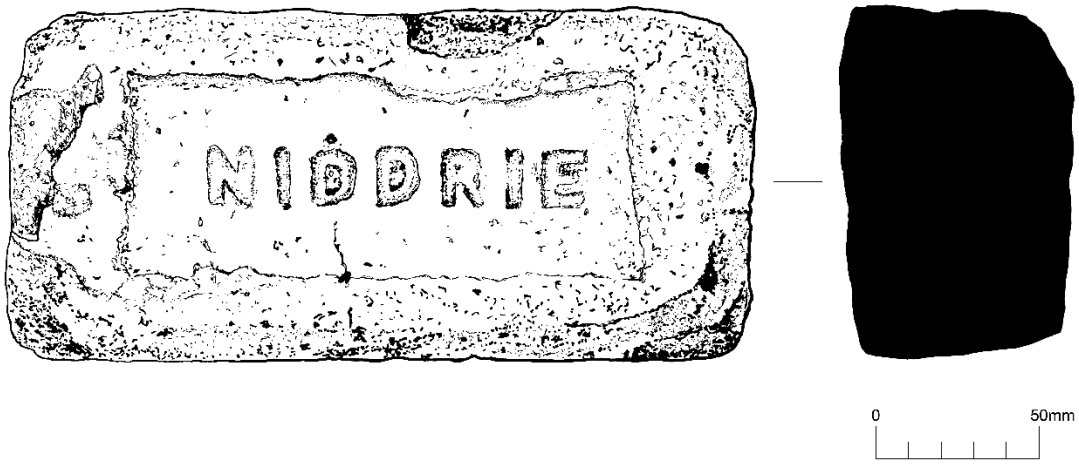

Figure 8: Measured drawing of the NIDDRIE brick after it was removed from the Beach. The brick was likely manufactured between 1924 and 1947. Drawing by the author. CC BY-SA-NC 4.0.

On the same day as the removal of two 'old' bricks (NIDDRIE and WHITEHILL) I immediately substituted them with two *newly manufactured* bricks. These I sourced from the Raeburn Brick company in Blantyre (near Glasgow), the only remaining brick producer in Scotland that uses clay from a local source. Though I did not disclose my reason for ordering, Raeburn kindly sent me a sample of three of their bricks for the price of £20. I selected a variety called 'Bothwell Castle Red Wirecut' on the basis that they were (partially) handmade and quite variable in appearance, much like those I had removed.[8]

Unlike the older bricks, the new bricks are made to modern standards and are cored with three vertical holes. Despite their mass-produced nature, the new bricks subtly vary from one another in colours left by firing, and clamp and wirecut marks making them relatively easily to distinguish from one another. Having three bricks in my order, I chose to keep the final one spare as an unchanged 'control brick' for comparison, resting on a holiday of its own in the relative comfort of my home until the end of the project.

Before deposition, the new bricks were weighed, drawn (Figure 9) and photographed. When the NIDDRIE and WHITEHILL bricks were lifted, the new bricks were immediately slotted into the voids that they left behind and then photographed *in situ* (Figure 10); these new bricks were named B1 (taking the place of the NIDDRIE) and B2 (in the place of WHITEHILL). The position of the new bricks were then

[8] You can order a sample yourself here: https://www.raeburnbrick.co.uk/product/bothwell-castle-red-wirecut/

geolocated with a GPS but otherwise left unmarked.[9] The bricks were then left *in situ* where they remain at the time of writing (November 2023).

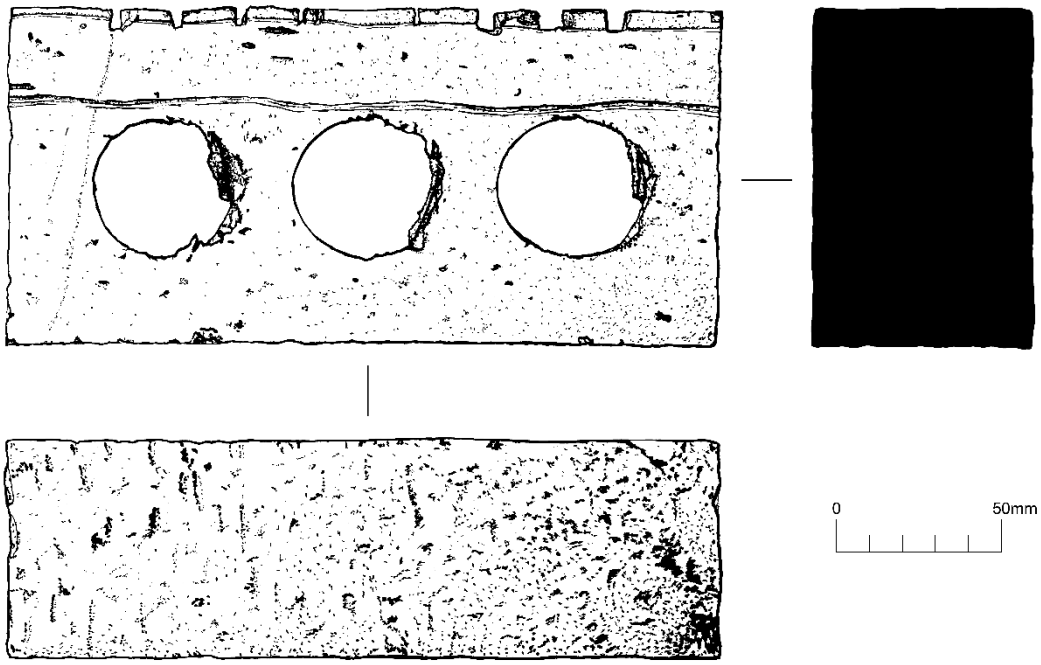

Figure 9: Measured drawing of one of new bricks, B1, prior to its placement on Royston Beach as part of Brick Holidays. Drawing by the author. CC BY-SA-NC 4.0.

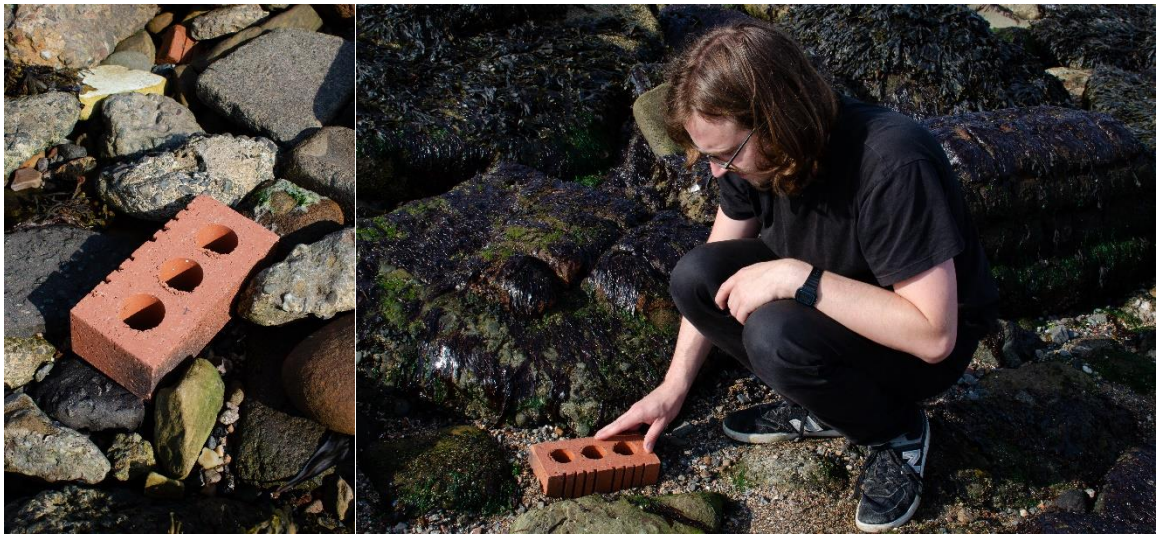

Figure 10: Left: The placement of the new brick, B1, in the location of the NIDDRIE brick on the west of Royston Beach on 21st September 2021. Right: The author depositing new brick B2 on the eastern bay of Royston Beach on the same date on the site of the removed WHITEHILL brick. Left: Photograph by the author. Right: Photograph by Beatrijs de Groot (both CC BY-SA-NC 4.0).

[9] I decided against gluing trackers to the bricks or marking them with paint to avoid further contaminating this already badly damaged marine environment. Bricks B1 and B2 were located around 90 metres from one another and in separate bays of the Beach so could not be mixed up accidentally.

Figure 11: Photographs of bricks B1 (top) and B2 (bottom) showing images of visits to document them following their deposition in the tideline of Royston Beach over approximately 18 months. While B1 disappeared by March 2022, brick B2 remains accessible and shows ongoing patination and inhabitation by marine organisms. Despite my inability to locate B1, both bricks likely remain on the Beach at the time of writing (November 2023). If possible, they will both be recovered and replaced with the original NIDDRIE and WHITEHILL bricks in Spring 2024. Photographs by the author.

The next stage was to check up on B1 and B2 regularly over the course of the research until Spring 2024 (before the end of the project). This element was undertaken with the aim of, a) tracking how far the bricks moved from their original position; b) observing the process of abrasion and weathering such beach bricks experience through a period of at least 24 months; and c), to understand how the brick functioned on the Beach as part of an emergent system of organic and non-organic usage and valuation. The provision of the two new bricks, located on different sides of the Beach provided a degree of built-in redundancy should I encounter difficulties, though this was by no means a scientifically controlled study of tidal action.

To date (November 2023), B1 and B2 have been visited five times, with gaps of between two and six months between visits. Remarkably, re-locating one of the bricks (B2) has proven relatively straightforward, if time consuming (discussed below). In contrast, though not moving far on my first re-visit (22nd November 2021), brick B1 disappeared in the winter of 2021/22 and I have been unable to find it since. More accurately, it is fair to say that it was I who lost it, given that it is almost certainly still present in or around the same area of the Beach, probably buried or covered with seaweed. The digital marks of my efforts to relocate B1 followed by GPS tracks (Figure 12) have begun to resemble a scribbled drawing and provide a trace of this inherently risky methodology. I resolved that the brick has to be let go of, for a while at least, though I am hopeful it will turn up again by the end of the project. If it does not however, my intention is to retain the NIDDRIE brick and let B1 take its place on the Beach permanently.

My efforts to track B2 have proved more successful. Repeat visits and extensive searches have meant I have always been able to find it. This despite it having moved several metres southwest up the Beach between September 2021 and September 2023 (based on GPS plots). With each visit, B2 increasingly resembles the older bricks around it, meaning it became necessary to confirm its 'fingerprint' of surface features, including distinctive surface imperfections with older photographs on my phone to confirm I had identified the right brick (Figure 13).

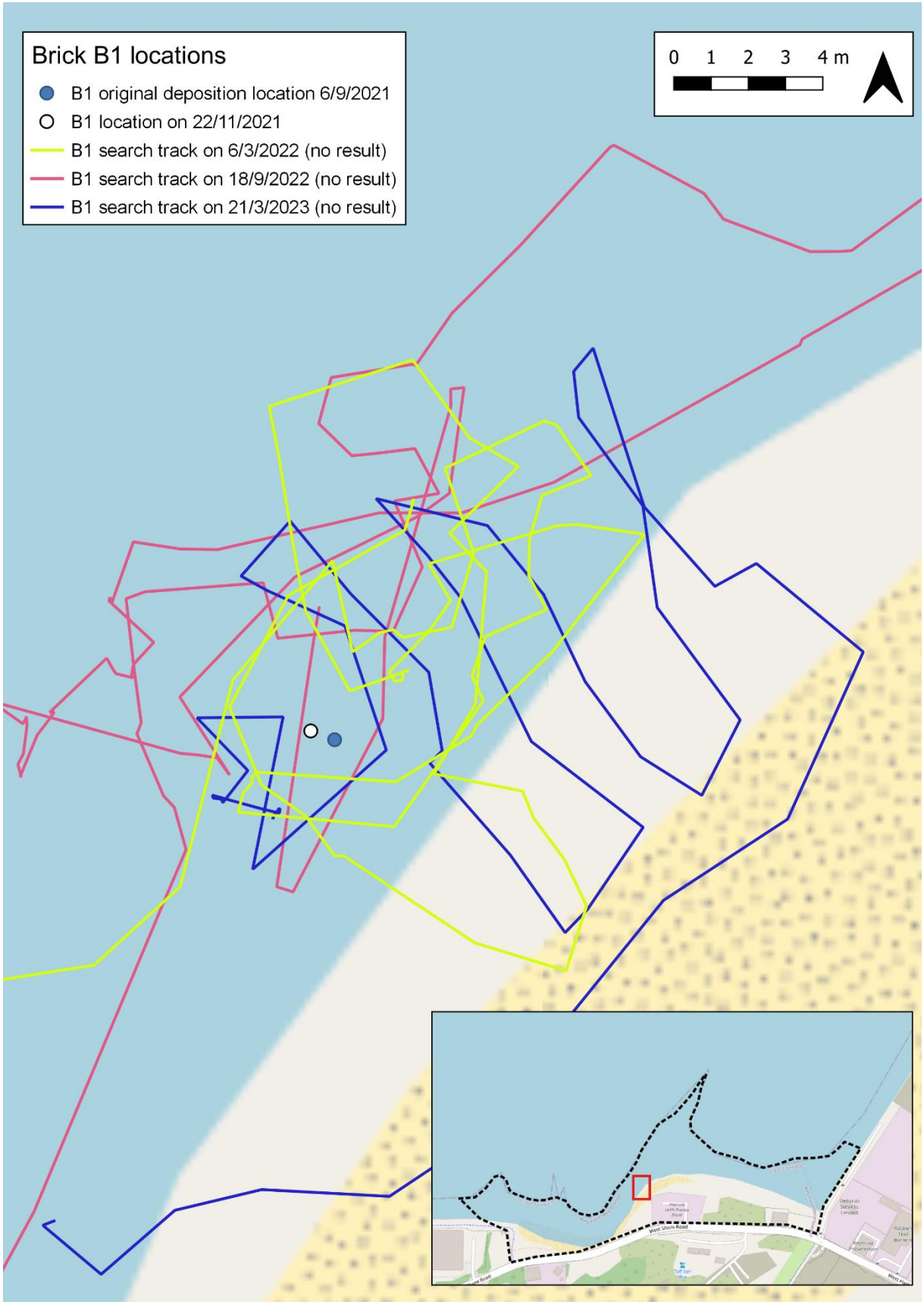

Figure 12: GPS tracks recording my search for the missing brick B1 over three dates between 2022 and 2023 on Royston Beach. Polylines and points by the author. Backdrop mapping ©OpenStreetMap contributors.

Figure 13: DSLR image of my phone screen lying against B2 itself on the Beach. The screen image shows B2 and its diagnostic marks (circled) as it was on 18th September 2022 in comparison to the same brick on 21st March 2023. This level of comparison was required to confirm it was the same brick (note also the striations running down the top of the brick at left). Photograph by the author.

While to some extent this wear and patination was expected, I was unprepared for quite how quickly it occurred (Figure 14). This process was well underway within six months of deposition with algae also rapidly growing on the top and bottom surfaces of the brick. On each revisit I have also observed that the small channels on the rear stretcher face host a variety of animals, including sand hoppers (sand fleas), periwinkles and small barnacles.

Brick B2 is also increasingly playing the role of collector (or archaeologist) itself. Its three cored voids have proven adept at capturing smaller broken brick fragments, small pieces of concrete, a crab carapace, and, most recently, fragments of window glass and broken shells. Unsurprisingly, each of these small assemblages are something of microcosm of the wider Beach, an ever-changing amalgam of brick, stone, concrete, glass and other anthropogenic waste materials, and beach sand.

Figure 14: Brick B2 *in situ* on 21st March 2023, showing patination and abrasion. The brick continues to collect seashore debris and marine organisms. Photograph by the author. CC BY-SA-NC 4.0.

Part 2

While the new bricks B1 and B2 remain on the Beach for now, the NIDDRIE and WHITEHILL bricks remain 'on holiday' at the time of writing (November 2023). In my effort to intervene in and reimagine what waste materials do as geosocial constituents of urban landscapes, I sought to follow the itineraries of these bricks backwards (and forwards) as far as possible.

WHITEHILL

The WHITEHILL brick was manufactured in the Whitehill Collieries and Brickworks located in the village of Rosewell, Midlothian, not far from the settlement of Roslin. The brickworks – like many in Scotland – were a by-product of the extensive coal mining industry in the area (working the Lower Coal Measures of the Upper Carboniferous Series), with the clay for the brickworks coming from coal mines surrounding the village. The works opened in 1861 and, following the nationalisation of all UK coal mines in 1947, were said to be producing 58,000 bricks a day in 1953 (Cranston n.d.). The works closed around 1977 and a housing estate was completed on the site by 2007.

Given the large number of bricks the works were producing, it is clear that 'my' WHITEHILL brick is one of millions made. Despite this, it is possible to ascertain from the brick stamp that it pre-dates the Coal Board nationalisation of 1947 as bricks made after this point were stamped 'NCB WHITEHILL' (and later, 'SCB WHITEHILL' [Scottish Coal Board]) which is lacking on my brick (Cranston n.d.). Given that the dumping on Royston Beach took place between the 1950s and 1990s, the WHITEHILL brick likely came from a nineteenth or early twentieth century brick-built residential or industrial construction that was demolished in the extensive programs of 'slum' and factory clearance that took place in the second half of the twentieth century (Abercrombie & Plumstead 1949; Edinburgh Corporation 1966; Johnston-Smith 2019; Peacock 1976; Robb 2017; Stevenson 1944).

The site of the brickworks in Rosewell, is now home to a series of new housing estates, constructed since the early 2000s. No trace of the works survives and it does not appear to be recognised in any heritage interpretation material at present, though the mine workings from which the bricks came continue to cause issues of subsidence in the village that have been the subject of legal proceedings (e.g. Wright & Darling 2012).

While we will likely never know where this particular brick was used as a building material, it is nonetheless tempting to speculate on the more interesting examples of the buildings such bricks were confirmed to have been used in. For example, Cranston reproduces a news article of 1896 that describes how the old Edinburgh Gasworks (on New Street near to Waverley, Edinburgh's central train station) had built the majority of its new southern chimney from Whitehill bricks (Cranston n.d.).[10] While it is unlikely the WHITEHILL came from this structure (given the gap between the gasworks' demolition in the early twentieth century and the first known dumping at Royston Beach in the 1950s), it does provide a suggestion of the type of building such a brick could have been used in. When a real brick is connected in this speculative sense with these industrial facilities it also goes someway to counteracting 'the myth of Edinburgh as a non-industrial city' (Madgin & Rodger 2013: 512), a simplistic vision of the city as made up of predominately stone-built medieval and

[10] It is unclear when this was demolished (likely in the 1920s) but the city's gasworks moved to Granton, close to Royston Beach, and opened in 1903.The foundations of this chimney were uncovered in recent excavations, though the base was made with red bricks from a rival brick company (see McLaren *et al.* 2022: 71).

Georgian architecture, picturesque streets and romantic vistas; a portrayal that continues to this day in the simplistic 'tartan tat' vision of Edinburgh now sold to tourists.

Figure 15: Niddrie Brickworks in October 1974. View from northeast showing Hoffman brick kilns and chimneys. This area is now home to Fort Kinnaird shopping centre. Image: 000-000-186-212-R ©Crown Copyright: HES.

NIDDRIE

The NIDDRIE brick was manufactured at Niddrie Brickworks in southeast Edinburgh. These works are listed as opening in 1924 (Figure 15) – although bricks seem to have been made here before this in a different plant with the same material. The Brickworks were operated by the Niddrie and Benhar Coal Company with clay from its nearby coal pits used to make up to 20,000 bricks a day. As with Whitehill, following the nationalisation of coal mines in 1947 the bricks became stamped 'NCB NIDDRIE' from 1947 and then 'SCB NIDDRIE' from 1969 until the business was bought by the Glasgow Iron and Steel Company Limited (stamped 'GISCOL') in 1984, who operated it until its closure in 1991 (Cranston 2017). Again, this indicates that my brick pre-dates 1947.

The site today comprises part of a large out-of-town shopping park called 'Fort Kinnaird', the second largest retail park in the UK and owned by the real estate company, British Land, and global real estate corporation, M&G. The section of the park located on the former brickworks was built in the mid-1990s as 'Edinburgh Fort', an addition to the original 1989 retail complex (originally 'Craig Park', then 'Kinnaird Park'), and hosts major retailers such as WH Smith (a newsagent and bookseller) and Boots (a pharmacy chain). The kilns of the brickworks and the main chimney (demolished in 1995) were located in what is now a carpark directly in front of a range of stores aligned southwest-northeast (Figure 16).[11]

Figure 16: Fort Kinnaird shopping centre. Site of Niddrie Brickworks. The removed NIDDRIE brick from Royston Beach was brought back to this site in May 2023 as part of Brick Holidays. Photograph by the author. CC BY-SA-NC 4.0.

In an attempt to both follow and confound this historical narrative, I decided to return to this brickworks with the brick itself, intervening in its itinerary and returning it to whence it came. In early May 2023, I began once again at Royston Beach where the brick was photographed (Figure 17) before being taken on a 13-kilometre route by bicycle through the remnants of Edinburgh's former industrial districts and, carried over a series of now-disused industrial and mineral rail lines (now cycle paths) to the site of the brickworks.

[11] The 'Fort' part of the name appears to be merely a branding device rather than having any historic or toponymical significance in this area.

Figure 17: The removed NIDDRIE brick at Royston Beach on 17th May 2023, before its journey back to its 'birthplace' at Fort Kinnaird. Photograph by the author. CC BY-SA-NC 4.0.

Having obtained prior permission to photograph on the private land of Fort Kinnaird, I set about photographing the brick in its rather worn state in front of the more regular brick-skinned retail units (Figure 18). Passers-by and (forewarned) security guards alike showed almost no interest in my presence or the brick. Inevitably the experience felt anti-climactic, yet I felt a ridiculous sense of achievement at this, admittedly strange, pilgrimage having been achieved.

Figure 18: The NIDDRIE brick at Fort Kinnaird (site of the Niddrie Brickworks) on 17th May 2023, following the end of its journey from Royston Beach. Photograph by the author. CC BY-SA-NC 4.0.

While the facades of Fort Kinnaird and its well-kempt public realm are not made from Niddrie bricks, I found there are plenty of them to be seen nearby. Walking (with my brick) from Fort Kinnaird to Whitehill Road (no relation to the other brickworks or brick), between the back of New Look (a clothing chain store) and adjacent to the monumental aluminium and steel hangar of Pets at Home, lie the five surviving 'Niddrie Cottages'. These, along with a small church opposite (now Craigmillar Community Art Centre), and a later cottage nearby, comprise the sole structures that survive from the operation of the brickworks and collieries.

These former miners' cottages interested me because, although built in 1912, twelve years before the new brickworks opened (HES n.d.), they and their surrounding walls are nonetheless made of bricks whose distinctive yellow hue is almost identical to the brick I brought with me (Figure19). Here we catch a glimpse of the kinds of structure my brick may have been used for originally, especially given the brickworks were originally opened to support a post-World War I housebuilding boom (Cranston 2017).

Figure 19: Niddrie bricks in use at surviving miners' cottages near to Fort Kinnaird. Photographs by the author. CC BY-SA-NC 4.0.

Summary: staying on holiday

Following the success of the journey of the NIDDRIE brick back to its origin, a similar journey will be undertaken with the WHITEHILL brick to the more distant works at Rosewell in the near future. What, then, have we learned about the Beach, these bricks and processes of reimagining waste landscapes from this process?

Brick Holidays, as an object itineraries-derived approach, attempted to link formerly disparate places and times in a spatial and geological sense. For example, my journey with the NIDDRIE brick back to its birthplace was an intervention in the journey of this object that not only places it back into an ongoing social relationship with humans (see Nativ 2022), but also makes explicit (via the images and this text) in a very simple sense how one place connects with another through a single object. Edinburgh was founded (as indeed all cities are) on such processes of the extraction of raw materials and their transformation, movement, use, and disposal; a 'geologic reciprocity' of materials both 'raw' and waste (Denizen 2013: 41), as well as an imbrication with those who mined them (see Mumford 1934, Chapt. 2), built with them or discarded them.

While no trace of the coal mine or the brickworks survives at Fort Kinnaird, the bricks can nonetheless be connected to an even more distant past, that of the geology which remains unexhausted beneath the stores. The bands of coal, clay and sandstone of the Carboniferous beneath Edinburgh literally provided the means by which the city and much of the eastern central belt of Scotland was built and, with the closure of the mines and brickworks, the spaces left behind then provided convenient gap sites for out-of-town shopping parks and swathes of suburban housing estates, all surrounded by motorways built on coal and oil shale waste.[12]

The bricks formed of clay from the depths of the Niddrie and Rosewell mines, once helped build the city's houses and factories, only to be ultimately discarded on Edinburgh's northern periphery as landfill. My intervention reverses this flow, moving from this northern edge, via the centre of the city to close to the origin point once more. This movement therefore also attests to the ongoing industrial change that has reshaped the city and the country as a whole.

There is something poignant about the fill of the Beach likely being the remnants of so-called slums or shuttered factories. Though early twentieth century housing conditions in central Edinburgh were undeniably grim, the slum-clearance of districts like Greenside and St. James saw entire communities broken up and shipped out to the periphery – much like the rubble itself – with little consideration for what would be lost, both socially and architecturally (see Johnston-Smith 2019). This has cast a

[12] See, for example, Davis & Jeffs 1990: 748.

long shadow on the city, with some of these former central districts now in a second wave of development following the failures of the first, and commanding ever-higher property values while more distant areas still struggle with poverty and stigma (Kallin & Slater 2014; Kallin 2015).

The itineraries of the bricks therefore also attest to two potential futures; one consisting of further demolition and redevelopment and another that attests to ruination through catastrophic climate change. The first future, redevelopment being a state of pre-destined ruination, is not a new idea. Writing in the 1960s about the deindustrialisation and ongoing rebuilding of the New Jersey 'Meadowlands' near to New York City, the artist Robert Smithson noted how such edgelands, for all their suburban sprawl and identikit car showrooms, would nonetheless seem to reveal something fundamental about our civilisation. As 'ruins in reverse', he suggested that the future was already in the process of obsolescence (Smithson 1967); that these 'monuments' of capitalism and convenience would also one day be gone in a way not dissimilar to Walter Benjamin's dialectical vision of history assembled from the decaying shopping arcades of Paris (Benjamin 1999: Conv. G.). The retail park of Fort Kinnaird, built on the demolished brickworks and the coal mines will one day also be demolished, almost certainly to be replaced by more suburban housing, skinned in bricks. The Fort's own foundations might even be grubbed up and repurposed in another land reclamation somewhere else.

As for the bricks on the Beach, new and old, while still very much recognisable as human made artefacts, they are nonetheless beginning to become part of the underlying geology. The new bricks I placed on the foreshore, in housing invertebrates and plants, as well as collecting other anthropogenically made waste fragments, attest not only to the long term persistence of human waste but its ultimate sublation. Bricks B1 and B2 are gradually reducing slowly back into their constituent clay minerals which will merge with the sandy bottom of the Firth of Forth. The already-worn surfaces of these new bricks reminds me of Caitlin's DeSilvey's words that, 'the artefact is not a discrete entity but a material form bound into continual cycles of articulation and disarticulation' (DeSilvey 2006: 335). Perhaps one day these minerals will form part of new mudstone strata which, in turn, may be buried by organic remains and layers of sand over hundreds of millions of years,

echoing the earlier formation processes of the Carboniferous.[13] While they take on increasingly entropic and fragmentary properties, the bricks on the Beach nonetheless still partially function as intended, their mass and ability to move in tides and storms collectively act as a wave break, slowing the erosion that is taking place here.

This erosion at the Beach and my efforts to follow these bricks also hint at the second future, one in which a predicted scenario of near-one metre of sea level rise will make much of the coast of Edinburgh uninhabitable. While redevelopment plans in Granton some twenty years ago had grand visions of clearing the rubble away and building luxury apartments and importing clean sand (Llewelyn-Davies 2000; at one, rather unhinged, stage these included a thistle-shaped artificial island: Picken 2006), a new Masterplan plans to retain the Beach simply as a 'Landscaped Coastal Flood Defence' (Collective Architecture 2020: 40). Such a sea level rise, driven from ice melt and thermal expansion of seawater by global heating is the calling in of a debt, the repayment of industrial borrowings from the Carboniferous. This looming threat is the ultimate product of coal mines like those of Niddrie and Rosewell, and more recently, of the burning of the oil and gas still carried past Royston Beach each day by seaborne tankers serving Scotland's vast petroleum industry.

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Author statement: Jonathan Gardner is an archaeologist and heritage researcher based at Edinburgh College of Art. His work examines how the materials of the past can sometimes act unexpectedly in the present. During the first part of the pandemic he was unemployed and trying to write a book (beginning his current position in October 2020). In the process of procrastinating and going on walks along the post-industrial shoreline of Edinburgh during several lockdowns, a chance encounter with a rubble-strewn beach proved unexpectedly influential. While undoubtedly similar to the experience many others had during this time, it was this paying attention to things from the past that we might otherwise have overlooked that ultimately inspired the research and paper presented here.

[13] That said, if suddenly buried in mud or other material in the right conditions rather than left to crumble, such bricks may still retain their recognisable shape if not their chemical and material properties even tens of millions of years in the future (Zalasiewicz 2008: 186).

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