



Temporary Use in England's Core Cities: Looking beyond the Exceptional

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Temporary Use in England's Core Cities: Looking beyond the Exceptional

Abstract

This paper develops an understanding of the structural and spatial characteristics of regulated forms of temporary use across England's core cities. The contribution of the paper lies in its adoption of an extensive research design that goes beyond the intensive qualitative approaches that predominate in the temporary use literature. We employ a new and novel dataset of 5890 temporary use interventions that have been recorded over a 15-year period (2000-15). Informed by the temporary use literature, we distinguish between 'extraordinary' (e.g. urban beaches) and 'ordinary' (e.g. car parks) forms of temporary use alongside other characteristics that include the time of occurrence; the function of space appropriated; decisions taken; and whether instances were isolated or reoccurring. Logistic regression is used to test whether the odds that a temporary use was defined as 'ordinary' or 'extraordinary' increased or decreased owing to their underlying structural characteristics. The analysis revealed that applications for extraordinary temporary uses increased in the period following the 2007/08 financial crisis but that ordinary forms of temporary uses remained much more common before and after the recession. It also revealed differences between ordinary and extraordinary uses in relation to the functions of the spaces appropriated and decisions taken by the planning authority in processing the application. Geospatial approaches were then applied to two case study cities – Bristol and Liverpool. The analysis revealed a tendency towards the clustering of temporary uses that was spatially and temporally uneven with extraordinary uses in particular concentrated in the cores/downtowns of the two cities.

Keywords: planning, built environment, land use, method, redevelopment, regeneration, temporary urbanism, temporary use.

Introduction

Recent years have seen sustained research interest in the temporary use of urban spaces. As a response to conventional planning discourses in which under-used or derelict sites have often been viewed as 'void', 'dead' or 'wasted' spaces (Colomb, 2012: 135), policy interventions to promote temporary use have been presented as innovative and cost-effective alternatives (Haydn and Temel, 2006; Oswalt et al., 2013). Under this reading, conventional perceptions of vacant or under-used land as inherently problematic ignore or underestimate alternative and unharnessed environmental, economic and socio-cultural potentials (Németh and Langhorst,

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3 2014). Policies to promote temporary use, it is argued, provide a means of encouraging
4 progressive land-uses, enabling policy experimentation, facilitating community participation
5 and/or disrupting or moderating ‘business as usual’ development (SfS Berlin, 2007;
6 Madanipour, 2018; Reynolds, 2011).
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11 Accompanying the increased interest in temporary use has been extended debate about how
12 best to interpret it. Attempts in the literature to understand the meaning and significance of
13 temporary use have been wide ranging. Some accounts emphasise the practical value of
14 temporary uses as interim, counter-cyclical solutions during periods of market listlessness.
15 Temporary uses, they contend, provide a valuable expedient mechanism for utilising surplus
16 land in times of economic strain, helping not only to minimise flux in local land markets but
17 also enabling regeneration strategies to remain viable in the absence of anticipated levels of
18 demand (Németh and Langhorst, 2014). In other accounts, temporary uses are interpreted as a
19 reflection of austerity politics, providing a lower-cost alternative to planning and regeneration
20 policies by allowing state and corporate actors to promote the reuse of redundant land on a
21 temporary basis until normal land and property market functionality resumes (Moore-Cherry
22 and McCarthy, 2016; Tonkiss, 2013; Urban Catalyst, 2007). Critical perspectives have
23 implicated temporary use policies in wider strategies of capital accumulation, their creative and
24 political potential co-opted and distorted to legitimise mainstream approaches to urban
25 development (Colomb, 2012). For LaFrombois (2017: 422), in a critique of ‘DIY urbanism’,
26 temporary uses represent an unwarranted privileging of a “...narrow set of unauthorised,
27 grassroots, and citizen-led urban planning interventions...” that fail to connect activities and
28 actors to wider urban systems and policy frameworks (see also Henneberry, 2017 in relation to
29 this latter point).
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46 The aim of this paper, then, is to shed further light on these ongoing debates about the shape
47 and form of temporary use. Most empirically rooted accounts of temporary use to date have
48 been based on intensive qualitative investigation, documenting experiences in urban case study
49 contexts in Europe and North America. This research is an attempt to complement and extend
50 existing approaches by assembling quantitative data on planning applications in order to assess
51 the spatial and temporal patterning of temporary use within and between cities over the period
52 2000-15. Here logistic regression was employed to examine the relationship between temporary
53 uses and a series of associated characteristics intended to embody the variable economic, land-
54 use and planning contexts in which applications for development were determined. This was
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3 augmented by more detailed investigation undertaken in two cities, Bristol and Liverpool.
4 Geospatial techniques, including nearest neighbour and Grouping Analysis, were used to
5 examine the spatial distribution of temporary use in the two cities and establish whether
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augmented by more detailed investigation undertaken in two cities, Bristol and Liverpool. Geospatial techniques, including nearest neighbour and Grouping Analysis, were used to examine the spatial distribution of temporary use in the two cities and establish whether ‘captured temporary uses’ exhibit tendencies towards clustering or dispersion over space and time. In the next section, we draw further on the existing literature to inform discussion of the definition and measurement of temporary use, before exploring in more detail the methodology employed and findings from the analysis.

Contextualising ‘Captured’ Temporary Use

The diverse ways in which temporary use has been conceptualised is reflected in the terminology employed in the research literature (Andres, 2013; Moore-Cherry and McCarthy, 2016). Labels such as ‘pop-up’ (Harris, 2015), ‘interim’ (Németh and Langhorst, 2014), ‘meanwhile’ (Angus, 2015), ‘tactical’ (Mould, 2014), ‘insurgent’ (Hou, 2010), ‘makeshift’ (Tonkiss, 2013), ‘terrain vague’ (Sola-Morales, 1995), ‘DIY’ (Finn, 2014), and ‘interwhile’ (Reynolds, 2011) give an indication of the differing ways in which temporary uses are conceived. For Mould (2014), there is a need to distinguish between unsanctioned forms of grassroots temporary use, and top-down choreographed efforts to promote time-limited uses as part of regeneration programmes or corporate real estate strategies. Others have questioned the degree to which temporary use can be considered a coherent category, noting that it includes not only uses installed on previously developed land and definable vacant sites or plots, but also the residual spaces between buildings or other forms of left-behind infrastructure remaining after planning and development (Hou, 2010).

Embodying these and other conceptual uncertainties in a definition of temporary use is not a straightforward exercise. However, for the purposes of this paper we conceive ‘temporary use’ simply as a “...flexible method of spatial production, which cannot be separated from processes of production and consumption of space, with their political, economic and cultural dimensions” (Madanipour, 2018: 1094). Inherent in this flexibility is the promotion of the use of urban space on a time-limited basis in response to spatially and temporally uneven drivers of development that include the relocation of activities, cycles of investment and disinvestment, crises of overproduction, and changes in technology (Harris, 2015). In this context, empty spaces – referring broadly to vacant land, empty buildings, abandoned or stalled sites, and surplus spaces remaining after development – are integral to the performance of urban development in which capitalist processes shape the spatial and temporal patterning of

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3 production, supply, demand and consumption (Madanipour, 2018). The fact that these
4 processes are concentrated in ways to maximise accumulation means that empty spaces are
5 often understood as a “...inherent feature of capitalism with its cyclical nature and its recurring
6 crises” (Madanipour, 2018: 1095).
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11 In the UK context, applications for planning permission for temporary time-limited uses are
12 subject to the same requirements as ‘permanent’ development. For many permitted
13 developments – recorded under Schedule 2 of The Town and Country Planning (General
14 Permitted Development) (England) Order 2015ⁱ – a temporary change in use may be allowed
15 but for a specific period that varies depending on the type of development that is soughtⁱⁱ. With
16 this in mind, we employ the term ‘captured’ to refer to temporary uses that have been regulated
17 through the planning system, thereby including forms of temporary use that have received
18 comparatively little attention in the research literature. In a regulatory context, it is possible to
19 conceptualise captured temporary uses as those that comply with existing building and planning
20 regulations, or those that are later subject to regulation via enforcement action (Durst and
21 Wegmann, 2017). That enforcement and compliance are spatially uneven and disrupted by the
22 inconsistent practices of regulatory agents, and producers and consumers means that captured
23 temporary uses can assume fragmented forms that are differentially realised across time and
24 space (Durst and Wegmann, 2017; Madanipour, 2018; Ferreri and Vasudevan, 2019).
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37 By ensuring that the definition of temporary use embraces captured development, the intention
38 is to counter the over-emphasis in the literature on the particular at the expense of the general
39 and the avant-garde at the expense of the banal (Adams and Hardman, 2013). This recognises
40 that “...everyday places, activities and behaviours matter as much as the extraordinary ones”
41 (Pearce et al, 2015: 25). As such, we draw a distinction between *ordinary* expressions of
42 temporary use, which reflect “...reliable rhythms and habitualized repetitions” of urban
43 development (Binnie et al., 2007: 167), and *extraordinary* expressions that represent
44 deliberately high-profile landmark and/or creative or innovative developments (Deslandes,
45 2013; O’Callaghan and Lawton, 2015). ‘Extraordinary’ interventions might include, *inter alia*,
46 displays of artwork, music venues and performance spaces, pop-up cafés/bars and restaurants,
47 street markets, developments using converted shipping containers, urban beaches and in some
48 cases urban agriculture and community gardeningⁱⁱⁱ. ‘Ordinary’ temporary uses, by contrast,
49 refer to interim developments that are part of the “...taken-for-granted pattern and context for
50 everyday living through which people conduct their day-to-day lives without having to make it
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3 an object of conscious attention” (Knox, 2005: 2). These ordinary expressions of temporary use
4 might include, for example, advertisements/signage, surface car parking, open storage, green
5 space provision (e.g. playing fields), site hoarding, scaffolding, shroud banners, construction
6 compounds and modular buildings for temporary accommodation. In adopting this perspective
7 we are mindful that labels such as ‘ordinary’ and ‘extraordinary’ invoke certain subjectivities
8 that have consequences for how sites are viewed (Doron, 2000). However, in focusing on
9 captured uses, our aim is to move beyond exceptional forms of temporary use by drawing
10 attention to other types of short-term activities that (co-)exist alongside ‘flagship’ projects but
11 which often go unnoticed in wider temporary use debates.
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20 **Methodology**

21 The principles outlined above were embodied in a three-stage methodology.
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25 *Stage 1: Developing a Temporary Use Dataset for England’s Core Cities*

26 Data were assembled for England’s core cities, the eight largest city-regional economies apart
27 from London. Five of the eight are located in the north (Leeds, Liverpool, Manchester,
28 Newcastle and Sheffield), two in the Midlands (Birmingham and Nottingham) and one in the
29 southwest (Bristol) (Figure 1). Although the core cities play an important role in contributing
30 to national economic output, all have struggled to varying extents with a legacy of economic
31 restructuring that includes significant stocks of surplus land, as uneven economic growth over
32 successive decades has failed fully to offset the structural contraction of their industrial bases
33 (see Champion and Townsend, 2011, 2013; Hincks et al., 2014). Some of the cities have
34 responded to this via strategies that include a role for temporary use. Of the eight core cities,
35 Bristol, Leeds, Liverpool, Newcastle and Nottingham have developed policies that make
36 explicit reference to temporary use. In most cases, however, these policies are concerned more
37 with regulating and/or limiting rather than promoting temporary use as part of wider
38 regeneration efforts. This has meant, for example, controlling temporary advertising (Leeds) or
39 car parks (Newcastle). By contrast, Bristol (Policy BCAP12) and Liverpool (Policy CC 13) are
40 notable as the only cities, at the time of writing, that have adopted planning policies specifically
41 to address the issue of vacant sites by encouraging temporary use.
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3 For these reasons, secondary data were assembled for the sample of eight core cities, with more
4 intensive investigation in Bristol and Liverpool in light of their more proactive attempt to
5 incorporate temporary use as part of local regeneration strategy. The data collection focused on
6 2000-15, a period that commenced with the publication of the Blair Labour government's Urban
7 White Paper and its commitment to contain new housing development, as far as possible, within
8 urban areas by maximising the reuse of brownfield land (Department of the Environment,
9 Transport and the Regions, 2000). The Urban White Paper drew upon an earlier report by Lord
10 Rogers's government-appointed Urban Task Force (1999), which called for an 'urban
11 renaissance' to reverse long-term counter-urbanisation. The publication of the Urban White
12 Paper in 2000 therefore serves as a natural entry point for our analysis. The 2000-15 period was
13 further subdivided into two distinct periods, pre-recession (2000-2007) and recession and
14 recovery (2008-2015), as a means of considering how the patterning of temporary use varied in
15 a context of changing macro-economic circumstances before and after the global financial
16 crises of 2007-08.
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29 For the eight core cities over the period 2000-15, planning applications data were assembled by
30 using local authority digital web-portals. In order to isolate instances of temporary use and
31 extract the relevant information from the wider database of planning applications, local
32 authority records were searched using seven terms: 'temporary', 'temporary use', 'period of',
33 'use of land', 'short term/short-term', 'interim' and 'meanwhile'. Using these terms, any
34 planning application identified by the applicant (or an agent) as a temporary use was included
35 in the dataset. These data were then cleaned to remove duplicates, leaving 5890 records over
36 the 2000-15 period. Further manual inspection of the data was undertaken to ensure that the
37 extracted fields – the unique application number, submission date, site address and postcode,
38 description of the proposed development, and the outcome of the application
39 (approved/rejected/appealed) – were complete. Where data fields were empty, accompanying
40 documents were reviewed and missing data entered to ensure complete coverage.
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51 The accompanying planning applications, including maps, technical specifications and detailed
52 contextual descriptions, were manually assessed to allocate the intervention to a *type* of
53 temporary use (i.e. ordinary or extraordinary). To illustrate with examples from Newcastle, a
54 "display of 1 x 2.44m x 1.83m and 1 x 3.66m x 2.44m non-illuminated advertising boards for
55 a temporary period" was defined as an 'ordinary' instance of temporary use, following the
56 definitions outlined above. In contrast, a "change of use of part of public highway to front of
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3 1-6 Eldon Square to temporary street market (*sui generis*)” was defined as an extraordinary
4 temporary intervention. Following Carmona (2014), the assessment and allocation exercise
5 focused on interpretive criteria, namely the scope/design of the proposed use, the way it was
6 expected to shape the future physical characteristics of the site, and the way the space would be
7 occupied. Alongside the *type* of temporary use proposed, the *time* the planning application was
8 submitted (2000-07 or 2008-15), the *function* of the temporary use, the *decision* taken by the
9 local planning authority on the application, and the number of *occurrences* of temporary use on
10 the site were also extracted. Table 1 provides a more detailed explanation of these variables and
11 their derivation.
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24 *Stage 2: Analysing the Structural Characteristics of Captured Temporary Use*

25 Employing this new and novel dataset, descriptive statistics and logistic regression were used
26 to explore the relationship between the type of temporary use recorded and the underlying
27 structural characteristics. A binary categorisation was adopted as the dependent variable with
28 the (1) extraordinary and (0) ordinary types forming the two groups. Time, function, decision
29 and occurrence were adopted as the independent variables (see Table 1). After the testing of a
30 series of binary logistic regression models, a main effects model was adopted because it
31 produced the best statistical fit. The main effects model takes account of the effects of all the
32 specified variables in the model on the dependent variable, but it does not take account of how
33 interactions between independent variables affect the dependent variable. The model enables
34 us to test whether the odds that a temporary use is defined as ‘ordinary’ or ‘extraordinary’
35 increased or decreased owing to the effects of their underlying structural characteristics. The
36 approach offered a means of measuring relationships between variables to determine which
37 characteristics were significant in explaining the patterns of temporary use recorded in the
38 dataset. It allowed us to go beyond the individual site-level to begin to predict systematically
39 broader patterns and trends of temporary use in the eight core cities.
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53 *Stage 3: Analysing the Spatial Patterning of Captured Temporary Use*

54 The final stage involved analysing the spatial patterning of captured temporary uses by
55 employing geospatial techniques in Bristol and Liverpool. Their selection allowed for
56 exploration of two key contrasts between the two cities. The first concerned the characteristics
57 of temporary use recorded in each city: the ordinary type was particularly prominent in Bristol
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3 and the extraordinary category more so in Liverpool. Secondly, while Bristol and Liverpool
4 have similarly long histories as major port cities, multiple studies have highlighted their
5 divergent post-industrial fortunes, with Bristol presented in some accounts as the “star
6 performing city” of the eight core cities and Liverpool experiencing some of the most acute
7 socio-economic challenges (Champion and Townsend, 2011: 1552). This allowed consideration
8 of the extent to which these contrasting urban socio-economic contexts gave rise to variable
9 intra-city spatial patterning in captured temporary use over time.
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17 Against this backdrop, the main dataset assembled in stage one was checked for repeat
18 applications. This was necessary to remove overlapping points for the same activity. The result
19 was to leave a single point for each type of activity that occurred on or within a specific site or
20 space. This focus on sites as opposed to applications resulted in a sample of 376 sites in Bristol
21 and 534 in Liverpool. For each temporary use to be geolocated, XY coordinates were extracted
22 from the online planning applications database for Bristol and Liverpool and their distribution
23 mapped. Second, an average nearest neighbour index (NNI) was calculated based on the
24 average straight-line distance from each temporary use to its nearest neighbour, using the
25 boundaries of the Bristol and Liverpool core cities to determine the spatial extent of the analysis.
26 An NNI score of less than one indicated the pattern of temporary use tended towards clustering,
27 and when greater than one dispersion.
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37 The final stage of the spatial analysis involved identifying local groupings of temporary uses in
38 the two core cities. In separate runs, the Bristol and Liverpool data were subjected to Grouping
39 Analysis available in ArcGIS 10.6 (for the method used, see supplementary material). This
40 technique was employed to identify clusters of temporary uses based exclusively on locational
41 traits, with X and Y coordinates forming the only two variables in the grouping exercise. The
42 result was the creation of clusters of temporary uses with similar locational profiles, but that
43 may or may not share similar structural characteristics (e.g. function or time). The optimum
44 solution was then mapped and descriptive statistics calculated and used to profile the groups
45 based on cross-tabulations with the distributions of the type and time variables.
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55 **Modelling Captured Forms of Temporary Use in England’s Core Cities**

56 Of the 5890 applications for temporary uses recorded in the core cities dataset for the period
57 2000-15, only 11% (n=626) were categorised as extraordinary uses based on the definition
58 under the ‘type’ category shown in Table 1. The number of applications for temporary uses was
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3 12% higher in the 2008-15 period than in 2000-07. Of all temporary use applications recorded
4 over the 2000-15 period, the use of public spaces yielded comparatively low levels of temporary
5 activity (4%) compared to applications for temporary use on residual spaces (44%).
6 Applications to reuse structures (26%) and vacant land (26%) were comparable, representing
7 the kind of short-term appropriation of space highlighted in much of the existing literature (see,
8 for example, Oswalt et al., 2013; Németh and Langhorst, 2014).
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15 With this context in mind, binary logistic regression was used to test whether the odds of a
16 temporary use being defined as ‘extraordinary’ (coded 1) compared to ‘ordinary’ (coded 0) (the
17 dependent variable) increased or decreased owing to the underlying characteristics embodied
18 in the four independent variables listed in Table 1. A test of the full model against the constant
19 only model was statistically significant with a Chi-Square value of 72.4 (df = 6) at $p < 0.000$.
20 The overall prediction success of the model was 89.4%.
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31 When comparing extraordinary and ordinary types of temporary use, the model returned four
32 statistically significant main effects (Table 2). The odds of a temporary use being extraordinary
33 rather than ordinary were found to be 37% lower in period one (2000-2007) than period two
34 (2008-2015). For the function variable, applications for extraordinary temporary uses were 20%
35 less likely to occur on vacant land than on residual land and public spaces when compared to
36 ordinary uses. In relation to temporary use of structures, applications were 1.5 times more likely
37 for extraordinary than ordinary applications. Unlike the other three independent variables, for
38 the occurrence variable no significant effects were recorded between reoccurring and isolated
39 categories. For the decision variable, refusals of applications for temporary use were 44% less
40 likely for extraordinary applications than ordinary applications.
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50 The results of the regression model reveal a number of important features of temporary use
51 across the core cities. Firstly, applications for extraordinary temporary uses were more likely
52 in the recession and recovery period (2008-15) than in the pre-recession period (2000-2007).
53 Previous research has highlighted the role played by temporary interventions as strategies of
54 reuse in response to crises of production and consumption, notably in the aftermath of the global
55 financial crisis and the subsequent attempts by some governments to promote austerity
56 programmes and reduce public expenditure (Madanipour, 2018; Moore-Cherry and McCarthy,
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3 2016; Tonkiss, 2013). That extraordinary forms of temporary use increased in the aftermath of
4 the financial crisis seemingly holds true here. However, the analysis also reveals that ordinary
5 forms of temporary use remained much more common than extraordinary types, totalling 75%
6 of all applications submitted between 2000 and 2015. This finding is important because the
7 balance between different types of temporary use, and its relationship over space and time, has
8 been afforded little research attention to date.
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15 Secondly, the primacy afforded to ‘urban wastelands’ (Urban Catalyst, 2003) and brownfield
16 land in analyses of temporary use belies a much more diverse set of land use redevelopment
17 practices when extraordinary and ordinary forms of temporary use are distinguished from one
18 another. Indeed, the model revealed that applications for extraordinary temporary use were
19 more likely to occur on residual and public spaces and in structures than on vacant land/sites
20 (the latter category most analogous to conventional categorisations of previously-developed
21 brownfield land). This would seem to challenge the primacy of brownfields as sites most likely
22 to accommodate extraordinary forms of temporary use (e.g. Oswalt et al., 2013). At the same
23 time, the analysis also supports the expectation that public rather than privately owned land
24 would be more strongly associated with experimental temporary uses (Németh and Langhorst,
25 2014). Despite the low overall proportion of temporary use on public spaces (4%), 70% of all
26 temporary uses on public spaces were defined as extraordinary whilst of all these extraordinary
27 temporary uses, 24% were on public spaces, second only to structures (35%).
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39 Thirdly, our expectation had been that approval rates for extraordinary types of temporary use
40 would be lower than for ordinary uses, given that the former tend to be less conservative and
41 more controversial (Bishop, 2015). Across the eight core cities, however, applications for
42 extraordinary uses were more likely to be approved. This calls into question the assumption
43 that temporary use is primarily associated with a weak planning context and an inability to
44 regulate development, where contentious proposals face fewer barriers to consent (Urban
45 Catalyst, 2007). An alternative interpretation is that what might appear ostensibly to be a more
46 permissive regulatory regime in reality reflects the priority given to temporary uses, both
47 formally or informally, in planning or regeneration strategies, either as a response to a hiatus in
48 developer interest or as a means of attracting more innovative uses and catalysing future
49 revitalisation, however superficial the actual commitment to temporary use might be (see
50 Martin *et al.*, 2019).
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3 Fourth, the model revealed that isolated as opposed to repeat applications were non-significant
4 in statistical terms. In contrast, the time, function and decision variables were of greater
5 significance in determining differences between the two temporary use types. What this
6 suggests is that while extraordinary temporary uses might well act as stopgap solutions for the
7 re-appropriation of space under weak/permissive planning regimes or in the context of poorly
8 articulated visions of future development (Bishop and Williams, 2012), the opportunities and
9 precarities often associated with such practices are only part of the story. The proportion of
10 recurring applications suggests that captured temporary uses could represent instances of
11 compliance or reflect enforcement measures, as planning, licensing and health and safety
12 systems recover control of developments that originated beyond their initial regulatory reach
13 (Adams, 2008; Bishop and Williams, 2012; Durst and Wegmann, 2017). Changes to planning
14 policy in England – including the introduction of the meanwhile use lease in 2009 (DCLG,
15 2009) and the revision of the 1987 Use Classes Order^{iv} – may also have encouraged greater
16 flexibility in how land and properties were used during the study period and conceivably could
17 have affected levels of reoccurrence over time.
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31 **The Spatial Patterning of Temporary Use in Bristol and Liverpool**

32 In this section, Bristol and Liverpool provide the focus for further detailed analysis of the spatial
33 patterning of temporary use. Nearly half (48%) of all temporary uses in Bristol and over two-
34 thirds (67%) in Liverpool were concentrated in the ‘urban cores’, as defined in the relevant
35 planning documents for the two cities (see BCC, 2015; LCC, 2018). The significance of these
36 patterns of spatial concentration is reflected in the fact that Bristol’s urban core accounts for
37 just 9.6% of the total area covered by the local authority boundary and Liverpool’s accounts for
38 less than one-third (28.4%). The next step involved using the average nearest neighbour index
39 (NNI) to test whether sites of temporary use in Bristol and Liverpool tended towards localised
40 spatial clustering or dispersion over the period 2000-15 (Table 4). In doing so, the extent of
41 localised clustering or dispersion of sites was calculated for all instances of temporary use (‘A’
42 in Table 3) and for segmented instances based on a combination of type and time (‘B’). Seven
43 spatial outliers were removed in each city, leaving a sample of 369 sites in Bristol and 527 in
44 Liverpool^v.
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57 When the analysis focused on all sites of captured temporary use (‘A’), the NNI revealed a
58 broad tendency towards spatial clustering in both cities. When segmented by type (‘B’), there
59 was evidence that ordinary uses clustered to a degree in both cities but that extraordinary uses
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3 clustered to a more significant extent in Liverpool compared to Bristol (Table 3). The analysis
4 reveals that in the pre- and post-recession periods, clustering of ordinary and extraordinary uses
5 was evident in both cities. Given the trends in the associated scores, there is a less than a one
6 percent chance that these clustered patterns were a result of random effects. The only
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8 divergence from this pattern was found in relation to the type variable in Bristol, where the
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10 score related to the extraordinary use category suggests that the observed patterning was not
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12 significantly different to what would be expected for a random distribution.
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17 [Table 3 here]
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21 Against this context of clustering in both cities, Grouping Analysis was used to segment sites
22 of temporary use in the two cities based on their *locational attributes*. The same samples used
23 in the NNI analysis were retained for the Grouping Analysis in each city. In running the
24 Grouping Analysis, it was found that the optimum solution for Bristol was five clusters whilst
25 in Liverpool it was eight (Figures 2 and 3).
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30 [Figures 2 and 3 here]
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34 Analysis of the characteristics of each group by type and time variables reveals extensive
35 variation in the characteristics of temporary uses on different sites (Table 4). In Bristol, Group
36 1 covers the main downtown urban core and surrounding environs, and accounts for 51% of all
37 sites in the sample. In Liverpool, Group 4 covers the city centre or downtown and its surrounds,
38 representing 42% of all sites. In both cities, ordinary forms of temporary uses dominate all
39 groups: between 85 and 98% of sites in each cluster in Bristol and 78 and 94% in Liverpool. In
40 both cities, the percentage of extraordinary temporary uses was highest in the city centre or
41 downtown groups (28% for Group 1 in Bristol and 22% for Group 4 in Liverpool). These
42 figures confirm that ordinary forms of temporary use predominate in both cities, but that
43 extraordinary uses are largely concentrated in their respective city centres. In Liverpool, 83%
44 of all extraordinary temporary uses were located in the urban core, and in Bristol this increased
45 to 94%.
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3 In the post-recession period, the majority of Groups in Bristol experienced an increase in the
4 number of sites on which temporary uses occurred. During the same period in Liverpool, all
5 groups experienced an increase in the number of temporary use sites, the exception being Group
6 1. The proportion of proposed extraordinary uses in Bristol increased or remained unchanged
7 in the pre- and post-recession periods in all groups, the exception being Group 5 which
8 experienced a decline. In Liverpool, a similar pattern is evident, with Group 5 the only one
9 experiencing a decline in the proportion of temporary uses over time. These trends confirm that
10 extraordinary temporary uses became more frequent in both cities after the financial crisis. At
11 the same time, however, the analysis also demonstrates that in both cities, applications for
12 ordinary uses actually exceeded those of extraordinary uses.
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22 That ordinary forms of temporary use are integral to mainstream urban development goes some
23 way to explaining their pervasiveness, but political and economic contexts are also likely to be
24 important in explaining trends in temporary use more broadly. At the national level, the Urban
25 White Paper (DETR, 2000) sought to address the continuing legacy of deindustrialisation in
26 urban areas of England by identifying and remediating stocks of vacant and derelict land.
27 However, in the aftermath of the financial crisis, this agenda began to erode as macro-economic
28 circumstances weakened and austerity politics was rolled out. As national regeneration
29 programmes were dismantled and fiscal resources cut, land and property market circumstances
30 deteriorated leading to local policy-makers opting to promote or simply accept short-term uses
31 of land as alternatives to conventional forms of development (Moore-Cherry and McCarthy,
32 2016; Martin *et al*, 2019). For Bristol, the increased scarcity of public funding as a result of
33 central government's austerity programme may have raised local political sensitivity about the
34 allocation of resources to sometimes controversial high-profile developments – especially given
35 that ordinary temporary uses (notably car parking) were an obvious and viable lower cost
36 alternative (Martin *et al*, 2019). In Liverpool, local regeneration strategy for the most part
37 eschewed pro-active encouragement for flagship or innovative temporary uses, and this too can
38 be viewed as a feature of the local political context that explains the relative preponderance of
39 ordinary uses (Martin *et al*, 2019).
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54 Against this context, the locational analysis reveals important features in the distribution of
55 temporary use in the two cities. First, the NNI suggests that spatial proximity between sites
56 needs to be afforded greater consideration in interpretations of the production of temporary use
57 than has been the case to date. Second, although extraordinary forms of temporary use may
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3 have occurred on the same site more than once, helping in part to explain why the number of
4 new sites proposed was relatively limited in both cities^{vi}, the analysis confirms the spatial and
5 temporal exceptionalism of ‘extraordinary’ uses when compared to ‘ordinary’ ones. This
6 pattern of reuse was reinforced through the results of the Grouping Analysis, which found that
7 extraordinary uses tended to concentrate more readily in the core/downtowns of both cities. Yet
8 even in these central locations it was ordinary forms of temporary use that predominated, a
9 feature of temporary use that has not been widely acknowledged in previous research.

16 17 **Conclusion**

18 This paper has sought to develop an understanding of the spatial distribution and structural
19 characteristics of ‘captured’ forms of temporary use in England’s core cities over the period
20 2000-15. The contribution of the paper to wider debates on temporary use lies in its adoption
21 of a research design that goes beyond the intensive qualitative approaches that dominate the
22 now extensive literature on temporary use, and which on occasion tend to emphasise exemplary
23 or innovative instances of time-limited development. In adopting an extensive approach that
24 makes use of data on planning applications for temporary development, there is an obvious risk
25 of underestimating the transformative potential of informal temporary uses that exist outside
26 the scope of formal land-use planning (see, for example, Groth and Corijn, 2005). However,
27 we have argued here that a focus on formally documented temporary uses is important in
28 extending analysis beyond the higher profile developments that often feature in the literature,
29 rectifying what LaFrombois (2017) calls a ‘blind spot’ in research to date.

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41 Trend analysis and regression modelling revealed a complex pattern of temporary use across
42 the eight core cities. Between 2000 and 2015, 5890 planning applications for temporary
43 development were recorded, the majority of which (almost 90%) were for what we term
44 ordinary forms of temporary use. The analysis demonstrated that the proportion of applications
45 for temporary use was 12% higher in the period after 2008, as cities grappled with the effects
46 of global financial crises. Although the number of applications for what we call extraordinary
47 forms of development in the dataset is relatively small (n=626), the volume increased from 212
48 in the 2000-07 period to 414 between 2008 and 2015. This suggests that higher-profile
49 temporary developments played an increasingly important role in efforts to offset economic
50 downturn and compensate for weakening land and property market conditions (Moore-Cherry
51 and McCarthy, 2016). Whether the growth of temporary uses along these lines represents the
52 emergence of “spaces of hope in the city” (Tonkiss, 2013: 323), or constitutes a more prosaic
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3 countercyclical response by developers or policymakers to dwindling developer interest,
4 remains uncertain. Although it is not possible here to expose the underlying drivers of
5 temporary use in the eight core cities, distinguishing empirically and conceptually between
6 different forms of temporary use helps begin to reveal processes of urban spatial production
7 and consumption that underlie the reuse of land and buildings, and which help to determine
8 their spatial and temporal imprints (Madanipour, 2018).
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10 Findings from the trend and regression analysis also help to advance understanding of the nature
11 of temporary use. The results suggest the need to recognise that temporary uses fulfil an
12 important role beyond the inner-urban brownfield land on which much of the previous research
13 has focused (Andres and Grésillon, 2013). This is especially the case when assessing the
14 distribution of extraordinary types of temporary use, which our analysis suggests are more
15 likely to be developed on under-utilised publicly owned land than on brownfield sites, as they
16 are conventionally understood. While there is a rich and diverse literature on what Andres
17 (2013) terms ‘differential spaces’ in which derelict land is subject to processes of appropriation,
18 transformation and regulation, the analysis in this paper augments this by demonstrating the
19 importance of appreciating other urban spaces in accommodating temporary uses.
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34 The trend and regression analysis also shed further light on the diverse ways in which temporary
35 uses emerge. The findings reveal the relative preponderance of approvals of repeat applications
36 for extraordinary temporary development. The frequency of repeat applications could be
37 interpreted as suggesting that temporary uses sometimes acquire an unanticipated degree of
38 permanence and/or that what are envisaged as short-term expedients can endure when expected
39 upturns in land and property market fortunes fail to materialise (Martin *et al*, 2019). A potential
40 interpretation of this, further corroborative investigation notwithstanding, is that extraordinary
41 temporary uses may sometimes evolve as more than interim or stopgap solutions that exists for
42 short-periods (as noted by Haydn and Temel, 2006; Oswalt *et al.*, 2013).
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51 Through the geospatial analysis, it was found that temporary uses in both Bristol and Liverpool
52 showed a tendency towards spatial clustering, as evidenced through the Nearest Neighbour
53 Index. The geography of clustering was also revealed through the Grouping Analysis, which
54 demonstrated that the concentration of high-profile uses in the cores/downtowns of the two
55 cities become more pronounced in the post-recession period. It is perhaps unsurprising to find
56 extraordinary temporary uses being (re-)produced unevenly within cities as different areas
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3 jostle to attract, create and/or retain landmark temporary uses. However, the roles played by
4 ordinary forms of temporary use in the context of local land markets struggling to recover from
5 post-crisis economic downturn have often been overlooked in interpretations of temporary
6 urbanism (see Tonkiss, 2013).
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11 The findings here highlight the value of employing planning applications data and geospatial
12 approaches to add to our understanding of intra-city patterning of temporary development as a
13 complement to intensive historical and narrative-based approaches to temporary use (Colomb,
14 2012; Andres, 2013). Further research is needed to identify locations – within and beyond our
15 sample – where temporary uses are more or less likely to occur based on certain underlying
16 characteristics (e.g. morphology, topography or ownership). Similarly, this study relied on a
17 dataset of captured forms of ordinary and extraordinary temporary uses, but there is also the
18 potential to use the applications dataset to develop alternative classifications of short-term use
19 based on specific functions (such as urban beaches or community gardens). Finally, further
20 work could extend the focus to identify spatial and temporal associations between different
21 forms of temporary use and sites of new commercial redevelopment or patterns of gentrification
22 in recognition that vacancy, as a feature intrinsic to the functioning of increasingly deregulated
23 local land markets, exposes temporary users to forms of precarity and risk that varies across
24 time and space (Martin *et al*, 2019; Ferreri and Vasudevan, 2019).
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54 ⁱ <http://www.legislation.gov.uk/ukxi/2015/596/schedule/2/made>

55 ⁱⁱ For example, land can be used temporarily for up to 28 days in any calendar year of which
56 not more than 14 days in total may be for the purposes of holding a market or motor racing
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5 event. In contrast, when land is used for the purpose of commercial filmmaking, the period of
6 use cannot exceed 9-months in any 27-month period. Similarly, the temporary use of a site as
7 a state-funded school for a single academic year is defined as any period beginning with 1st
8 August and ending with the next 31st July.
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11 iii Urban agriculture and community gardening might not necessarily be considered an
12 ‘extraordinary’ activity given their long-lineage as spaces of community socialisation and food
13 production. However, in the methodology section we outline a set of criteria for assessing
14 ‘ordinary’ and ‘extraordinary’ uses that included urban agriculture and community gardening.
15 This was through our reading of these activities as “...visionary and innovative projects” that
16 were assessed according to whether, from the planning application narrative, these individual
17 activities represented “...exemplary practices explicitly addressing urban food provision and
18 food rights, individual and communal health, urban and peri-urban environmental quality and
19 socio-environmental justice” (Tornaghi, 2014: 552).
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22 iv *The Town and Country Planning* (Use Classes) Order 1987 allocates the uses of land and
23 buildings to categories termed “Use Classes”. The categories are indicative of the specialisation
24 and functions that are characteristic of each class.
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27 v Using the Near tool, available in ArcGIS 10.6, the distances (metres) between each temporary
28 use data point and their most proximate (nearest) neighbours were calculated as a new field
29 based on a planar method. Those points that were deemed to be at a distance greater than 2.5
30 standard deviations were identified as spatial outliers and excluded from the analysis.
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33 vi Among sites featuring extraordinary uses, 40% in Bristol and 36% in Liverpool were subject
34 to reoccurring applications. Of these, in Liverpool 79 (54%) were reoccurring applications for
35 the same or comparable activities, and in Bristol the corresponding figure was 35 (28%).
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Table 1. Characteristics of Temporary Use

Variable	Derivation of Categories
<p>Type: Defined via the application summary and proposal fields in the local authority planning applications portal. Here, a succinct description of each planning application for temporary use is registered and recorded, for example: ‘temporary erection of a non-illuminated site sign board’ or ‘local development order for temporary urban agriculture’.</p>	<p>Ordinary Temporary Use: Refers to interim developments that might be considered part of a “...taken-for-granted pattern and context for everyday living through which people conduct their day-to-day lives without having to make it an object of conscious attention” (Knox, 2005: 2). These ordinary expressions of temporary use included inter alia advertisements/signage, surface car parking, open storage, site hoarding, scaffolding, shroud banners, construction compounds, and modular buildings for temporary accommodation.</p>
	<p>Extraordinary Temporary Use: Refers to creative or innovative temporary developments, deliberately high-profile proposals, landmark examples or cultural endeavours. Such as temporary: ‘displays of artwork’, ‘art installations’, ‘developments using converted shipping containers’, ‘urban agriculture’, ‘music concerts’, ‘film sets’, ‘pop-up cafés/bars and restaurants’, ‘temporary performance spaces’, ‘street markets’, ‘model car racing facilities’, ‘mooring of watermills/wheelhouses’, ‘informal play areas’, ‘public theatres’ and ‘urban beaches’.</p>
<p>Time: The date an application for temporary use was received by the local authority or the date an appeal decision may have been taken.</p>	<p>Pre-Recession (2000-2007): Corresponds with applications that were received in the years prior to the global economic crisis of 2008. The year 2000 served as the entry point for the analysis and the cessation of the property market boom in 2007 the closing point for this category.</p>
	<p>Recession and Recovery Period (2008-2015): Corresponds with applications that were received at the commencement of and in the years following the global financial crisis. The year 2008 served as the entry point for the analysis, running until 2015 when data collection ceased. The closing point for this category captures the subsequent recovery period experienced in many British cities following the global financial crisis.</p>
<p>Function: Defined via the planning application map function in the local authority planning applications portal or through the supplementary documentation accompanying the application, namely the submitted ‘site location plan’. The combination provided an accurate boundary area/delimitation for every application for temporary use.</p>	<p>Land: Corresponds with applications whose confines were associated with clearly defined, bounded plots, parcels and sites.</p>
	<p>Structures: Corresponds with applications whose confines were associated with clearly defined buildings and assemblies with a listed address.</p>
	<p>Public Spaces: Corresponds with applications whose confines were associated with clearly defined public spaces such as streets, squares, parks and open spaces.</p>
	<p>Residual Spaces: Corresponds with applications whose confines were associated with difficult to develop locations, such as spaces between buildings (alleyways), awkward wedges at the end of streets/sites (such as corners or verges), spaces left over after planning (SLOAP) as well as redundant infrastructure (such as electricity boxes).</p>
<p>Decision: Defined via the planning decision and appeal decision fields extracted from the local authority planning applications portal for each application of temporary use.</p>	<p>Refuse: Corresponds with an ‘Application Refused’ decision recorded and registered by the local planning authority.</p>
	<p>Withdraw: Corresponds with an ‘Application Withdrawn’ decision recorded and registered by the local planning authority.</p>
	<p>Approve/Grant: Corresponds with an ‘Application Approved’, ‘Application Granted’ or ‘Application Granted Subject to Condition(s)’ decision recorded and registered by the local planning authority.</p>
<p>Occurrence: Defined via the unique address and postcode featured in the dataset of captured temporary uses. Duplicate analysis was employed to determine the frequency in appearance of both the address and postcode fields for each temporary use application.</p>	<p>Isolated: Corresponds with applications whose unique address and postcode appeared only once in the dataset of captured temporary uses following duplicate analysis.</p>
	<p>Reoccurring: Corresponds with applications whose unique address and postcode appeared multiple times in the dataset of captured temporary uses following duplicate analysis</p>

NB ‘Type’ formed the dependent variable in the logistic regression model. The other variables formed the independent variables

Table 2. Binary Logistic Regression Model of Temporary Use (Main Effects)

Variable	B	Exp(B)	Sig.	Wald
Extraordinary Temporary Use				
Time				
Pre-Recession (2000-2007)	-.459	.632	0.000	26.41
Recession and Recovery Period (2008-2015)	-	-	-	-
Function				
Land	-.225	.799	0.021	3.92
Structures	.433	1.542	0.000	19.81
Residual/Public Spaces	-	-	-	-
Decision				
Refuse	-.581	.559	0.006	7.42
Withdraw	.025	1.025	0.876	0.24
Approve/Grant	-	-	-	-
Occurrence				
Isolated	-.136	.872	0.112	2.53
Reoccurring	-	-	-	-
-2 log-likelihood: 391.178				
Chi Square: Time (26.41; p<0.000); Function (34.88; p<0.000); Decision (7.53; p<0.023); Occurrence (2.53; p<0.112)				

Table 3. Nearest Neighbour Index for Bristol and Liverpool

Local Authority Area and Feature	No. Spatial Outliers	Final No. of Obs.	Observed Mean Distance (m)	Expected Mean Distance (m)	NNI	Z-Score	P-Value
A. Nearest Neighbour Analysis <i>(All Instances of Temporary Use)</i>							
Bristol	7	368	168.3	294.5	0.56	-16.0	.000
Liverpool	7	527	148.7	259.4	0.57	-18.7	.000
B. Nearest Neighbour Analysis <i>(Segmented by Type and Time)</i>							
Bristol							
<i>Ordinary</i>	9	331	176.3	314.7	0.56	-15.3	.000
<i>Extraordinary</i>	1	35	701.6	716.5	0.97	-0.2	.820
<i>Pre-recession</i>	5	212	252.1	376.7	0.66	-9.2	.000
<i>Post-recession</i>	2	156	258.4	440.5	0.58	-9.9	.000
Liverpool							
<i>Ordinary</i>	8	447	168.0	281.7	0.60	-16.3	.000
<i>Extraordinary</i>	2	76	256.9	512.9	0.50	-8.3	.000
<i>Pre-recession</i>	6	340	196.4	312.4	0.63	-13.1	.000
<i>Post-recession</i>	4	184	271.0	400.0	0.68	-8.4	.000

NB: the NNI calculation excludes spatial outliers

** An NNI score less than one indicates a patterning of temporary use tending towards clustering and a score greater than one towards dispersion.*

Table 4. Summary of Temporary Uses for Groups by Bristol and Liverpool

City	Group No	Type of Temporary Use (% of total No within group)		Timeframe for Temporary Use (% of total No within group)		Type by Time (% of total No within group)			
		Ordinary	Extraordinary	Pre-recession	Post-recession	Ordinary/ Pre-recession	Ordinary/ Post-recession	Extra-ordinary/ Pre-recession	Extra-ordinary/ Post-recession
Bristol	1	161 (85)	28 (15)	82 (43)	107 (57)	63 (33)	98 (52)	9 (5)	19 (10)
	2	53 (96)	2 (4)	15 (27)	40 (73)	14 (25)	39 (71)	1 (2)	1 (2)
	3	50 (98)	1 (2)	26 (51)	25 (49)	25 (49)	25 (48)	0 (0)	1 (2)
	4	39 (95)	2 (5)	17 (41)	24 (59)	16 (39)	23 (56)	1 (2)	1 (2)
	5	31 (97)	1 (3)	16 (50)	16 (50)	16 (50)	15 (47)	1 (3)	0 (0)
Liverpool	1	37 (84)	7 (16)	22 (50)	22 (50)	16 (36)	21 (48)	1 (2)	6 (14)
	2	33 (92)	3 (8)	9 (25)	27 (75)	7 (19)	26 (72)	1 (3)	2 (6)
	3	45 (92)	4 (8)	15 (31)	34 (69)	12 (24)	33 (67)	1 (2)	3 (6)
	4	172 (78)	49 (22)	70 (32)	151 (68)	46 (21)	126 (57)	25 (11)	24 (11)
	5	28 (93)	2 (7)	14 (47)	16 (53)	14 (47)	14 (47)	2 (7)	0 (0)
	6	33 (94)	2 (6)	13 (37)	22 (63)	12 (34)	21 (60)	1 (3)	1 (3)
	7	59 (88)	8 (12)	30 (45)	37 (55)	26 (39)	33 (49)	4 (6)	4 (6)
	8	42 (93)	3 (7)	12 (27)	33 (73)	10 (22)	32 (71)	1 (2)	2 (4)

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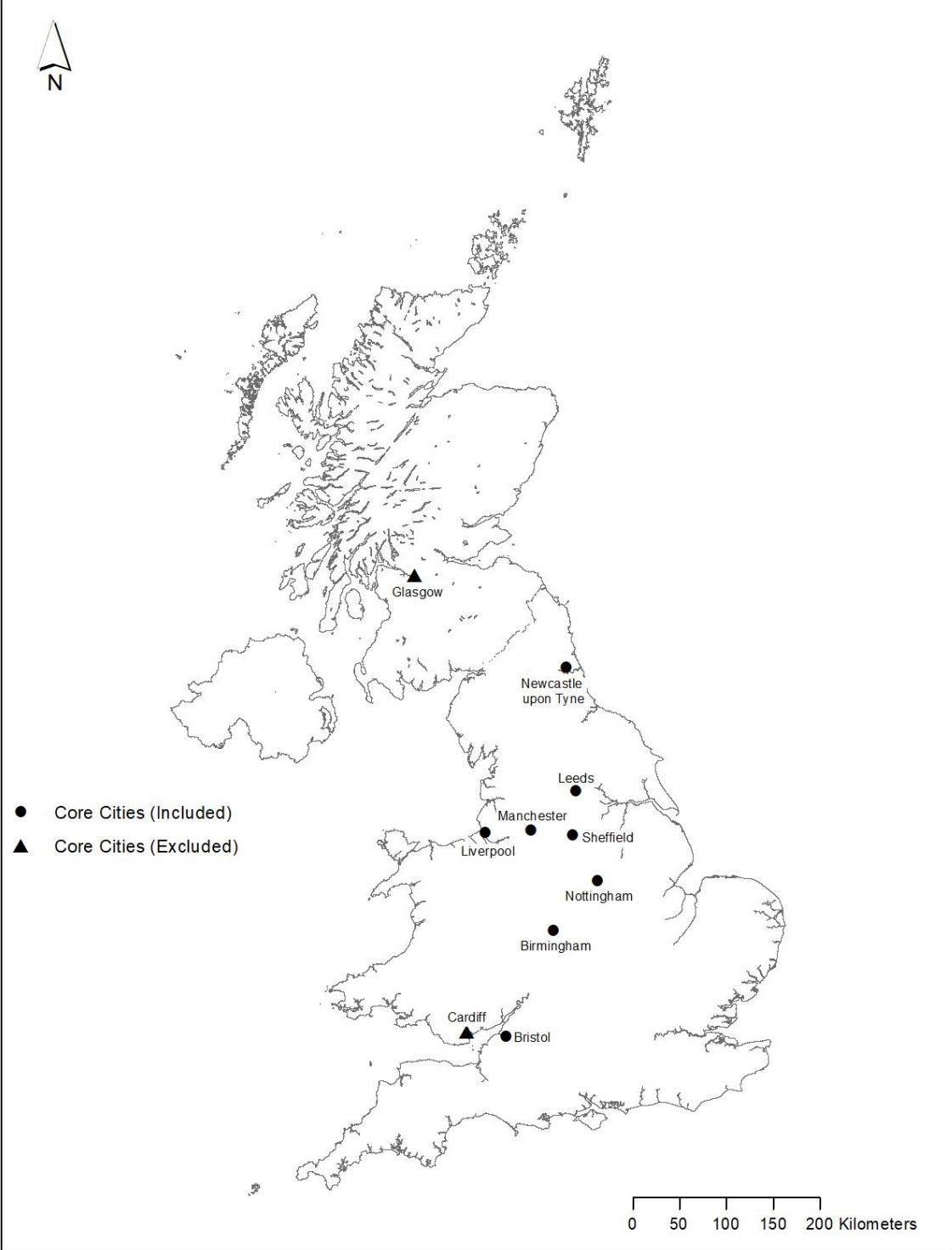


Figure 1. Core Cities

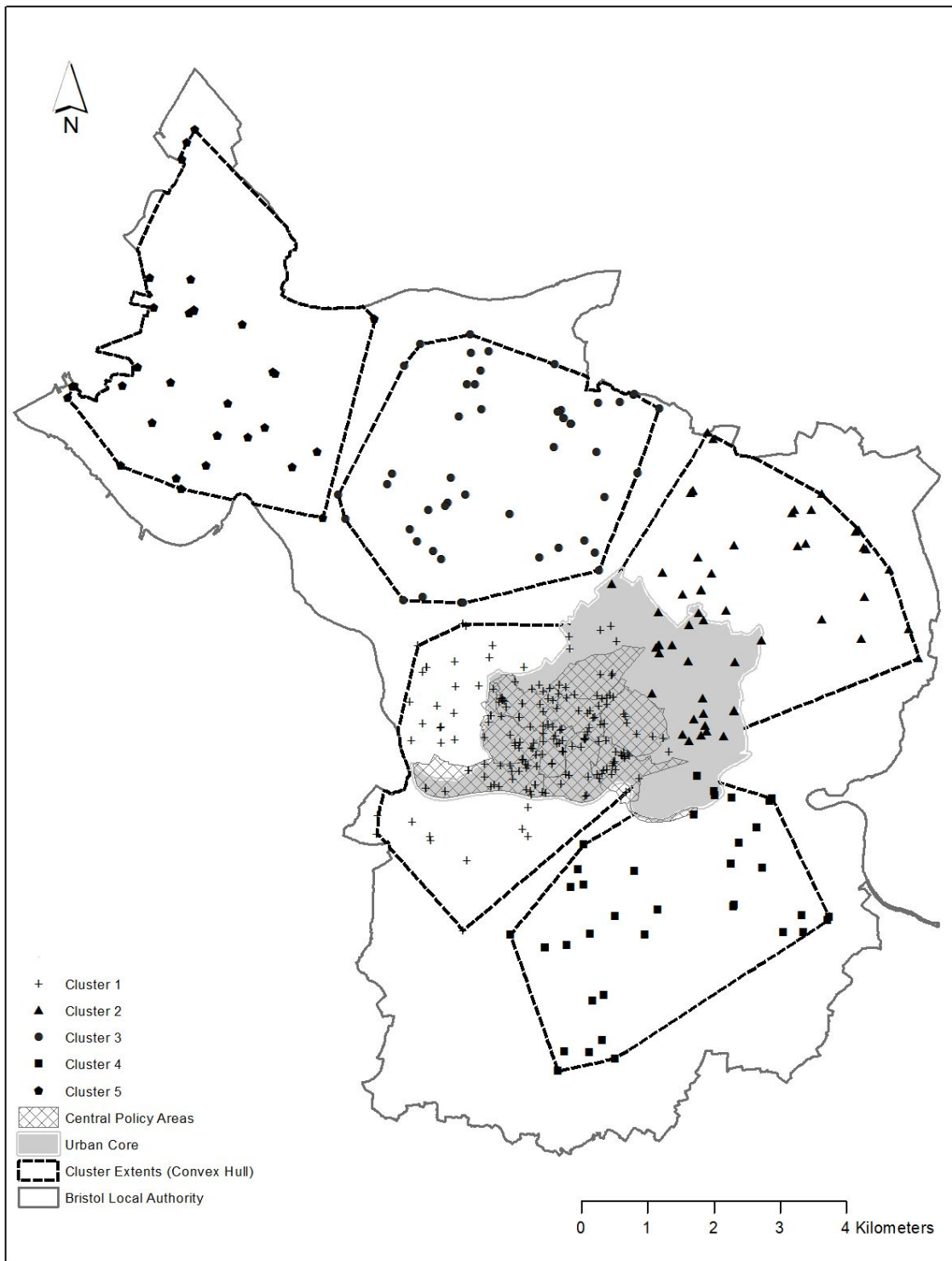


Figure 2. Temporary Use Clusters Bristol

NB: Central Policy Areas: Bristol Temple Quarter; Broadmead; Habourside; Old City; Old Market and the Dings; Redcliffe; St. Michaels; St. Pauls and Stokes Croft; West End

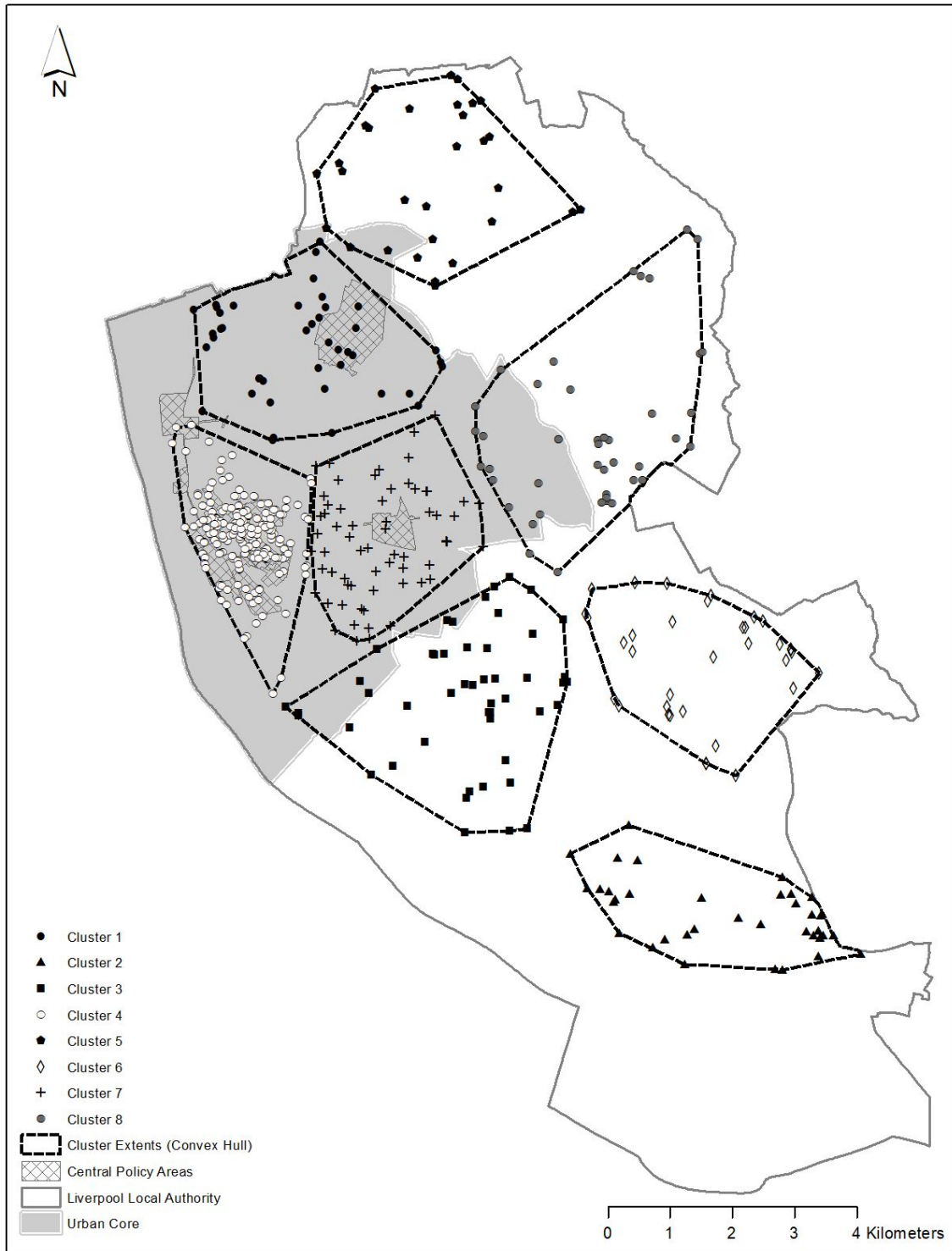


Figure 3. Temporary Use Clusters Liverpool

NB: Central Policy Areas: Ropewalks; Edge Lane West; Commercial Quarter; Baltic Triangle; Commercial District; Stanley Dock Conservation Area I&II; The Albert Dock Conservation Area; Pier Head; Anfield

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