



This is a repository copy of *Temporary use in England's core cities: Looking beyond the exceptional*.

White Rose Research Online URL for this paper:

<https://eprints.whiterose.ac.uk/id/eprint/154878/>

Version: Accepted Version

Article:

Martin, M., Hincks, S. and Deas, I. (2020) Temporary use in England's core cities: Looking beyond the exceptional. *Urban Studies*, 57 (16). pp. 3381-3401. ISSN 0042-0980

<https://doi.org/10.1177/0042098019898076>

Martin M, Hincks S, Deas I. Temporary use in England's core cities: Looking beyond the exceptional. *Urban Studies*. 2020;57(16):3381-3401. Copyright © 2020 Urban Studies Journal Limited. DOI: <https://doi.org/10.1177/0042098019898076>. Article available under the terms of the CC-BY-NC-ND licence (<https://creativecommons.org/licenses/by-nc-nd/4.0/>).

Reuse

This article is distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND) licence. This licence only allows you to download this work and share it with others as long as you credit the authors, but you can't change the article in any way or use it commercially. More information and the full terms of the licence here: <https://creativecommons.org/licenses/>

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.



eprints@whiterose.ac.uk
<https://eprints.whiterose.ac.uk/>



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

Journal:	<i>Urban Studies</i>
Manuscript ID	CUS-252-19-03.R2
Manuscript Type:	Article
Discipline: Please select a keyword from the following list that best describes the discipline used in your paper.:	Planning
World Region: Please select the region(s) that best reflect the focus of your paper. Names of individual countries, cities & economic groupings should appear in the title where appropriate.:	Western Europe
Major Topic: Please identify up to 5 topics that best identify the subject of your article.:	Planning, Built Environment, Land Use, Method, Redevelopment/Regeneration
You may add up to 2 further relevant keywords of your choosing below.:	Temporary urbanism, Temporary use

SCHOLARONE™
Manuscripts

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,

2014). Policies to promote temporary use, it is argued, provide a means of encouraging progressive land-uses, enabling policy experimentation, facilitating community participation and/or disrupting or moderating ‘business as usual’ development (SfS Berlin, 2007; Madanipour, 2018; Reynolds, 2011).

Accompanying the increased interest in temporary use has been extended debate about how best to interpret it. Attempts in the literature to understand the meaning and significance of temporary use have been wide ranging. Some accounts emphasise the practical value of temporary uses as interim, counter-cyclical solutions during periods of market listlessness. Temporary uses, they contend, provide a valuable expedient mechanism for utilising surplus land in times of economic strain, helping not only to minimise flux in local land markets but also enabling regeneration strategies to remain viable in the absence of anticipated levels of demand (Németh and Langhorst, 2014). In other accounts, temporary uses are interpreted as a reflection of austerity politics, providing a lower-cost alternative to planning and regeneration policies by allowing state and corporate actors to promote the reuse of redundant land on a temporary basis until normal land and property market functionality resumes (Moore-Cherry and McCarthy, 2016; Tonkiss, 2013; Urban Catalyst, 2007). Critical perspectives have implicated temporary use policies in wider strategies of capital accumulation, their creative and political potential co-opted and distorted to legitimise mainstream approaches to urban development (Colomb, 2012). For LaFrombois (2017: 422), in a critique of ‘DIY urbanism’, temporary uses represent an unwarranted privileging of a “...narrow set of unauthorised, grassroots, and citizen-led urban planning interventions...” that fail to connect activities and actors to wider urban systems and policy frameworks (see also Henneberry, 2017 in relation to this latter point).

The aim of this paper, then, is to shed further light on these ongoing debates about the shape and form of temporary use. Most empirically rooted accounts of temporary use to date have been based on intensive qualitative investigation, documenting experiences in urban case study contexts in Europe and North America. This research is an attempt to complement and extend existing approaches by assembling quantitative data on planning applications in order to assess the spatial and temporal patterning of temporary use within and between cities over the period 2000-15. Here logistic regression was employed to examine the relationship between temporary uses and a series of associated characteristics intended to embody the variable economic, land-use and planning contexts in which applications for development were determined. This was

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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

1
2
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).
7
8
9

10
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).
25
26
27
28
29
30
31
32
33
34
35
36

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
51
52
53
54
55
56
57
58
59
60

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

an object of conscious attention” (Knox, 2005: 2). These ordinary expressions of temporary use might include, for example, advertisements/signage, surface car parking, open storage, green space provision (e.g. playing fields), site hoarding, scaffolding, shroud banners, construction compounds and modular buildings for temporary accommodation. In adopting this perspective we are mindful that labels such as ‘ordinary’ and ‘extraordinary’ invoke certain subjectivities that have consequences for how sites are viewed (Doron, 2000). However, in focusing on captured uses, our aim is to move beyond exceptional forms of temporary use by drawing attention to other types of short-term activities that (co-)exist alongside ‘flagship’ projects but which often go unnoticed in wider temporary use debates.

Methodology

The principles outlined above were embodied in a three-stage methodology.

Stage 1: Developing a Temporary Use Dataset for England’s Core Cities

Data were assembled for England’s core cities, the eight largest city-regional economies apart from London. Five of the eight are located in the north (Leeds, Liverpool, Manchester, Newcastle and Sheffield), two in the Midlands (Birmingham and Nottingham) and one in the southwest (Bristol) (Figure 1). Although the core cities play an important role in contributing to national economic output, all have struggled to varying extents with a legacy of economic restructuring that includes significant stocks of surplus land, as uneven economic growth over successive decades has failed fully to offset the structural contraction of their industrial bases (see Champion and Townsend, 2011, 2013; Hincks et al., 2014). Some of the cities have responded to this via strategies that include a role for temporary use. Of the eight core cities, Bristol, Leeds, Liverpool, Newcastle and Nottingham have developed policies that make explicit reference to temporary use. In most cases, however, these policies are concerned more with regulating and/or limiting rather than promoting temporary use as part of wider regeneration efforts. This has meant, for example, controlling temporary advertising (Leeds) or car parks (Newcastle). By contrast, Bristol (Policy BCAP12) and Liverpool (Policy CC 13) are notable as the only cities, at the time of writing, that have adopted planning policies specifically to address the issue of vacant sites by encouraging temporary use.

[Figure 1 here]

For these reasons, secondary data were assembled for the sample of eight core cities, with more intensive investigation in Bristol and Liverpool in light of their more proactive attempt to incorporate temporary use as part of local regeneration strategy. The data collection focused on 2000-15, a period that commenced with the publication of the Blair Labour government's Urban White Paper and its commitment to contain new housing development, as far as possible, within urban areas by maximising the reuse of brownfield land (Department of the Environment, Transport and the Regions, 2000). The Urban White Paper drew upon an earlier report by Lord Rogers's government-appointed Urban Task Force (1999), which called for an 'urban renaissance' to reverse long-term counter-urbanisation. The publication of the Urban White Paper in 2000 therefore serves as a natural entry point for our analysis. The 2000-15 period was further subdivided into two distinct periods, pre-recession (2000-2007) and recession and recovery (2008-2015), as a means of considering how the patterning of temporary use varied in a context of changing macro-economic circumstances before and after the global financial crises of 2007-08.

For the eight core cities over the period 2000-15, planning applications data were assembled by using local authority digital web-portals. In order to isolate instances of temporary use and extract the relevant information from the wider database of planning applications, local authority records were searched using seven terms: 'temporary', 'temporary use', 'period of', 'use of land', 'short term/short-term', 'interim' and 'meanwhile'. Using these terms, any planning application identified by the applicant (or an agent) as a temporary use was included in the dataset. These data were then cleaned to remove duplicates, leaving 5890 records over the 2000-15 period. Further manual inspection of the data was undertaken to ensure that the extracted fields – the unique application number, submission date, site address and postcode, description of the proposed development, and the outcome of the application (approved/rejected/appealed) – were complete. Where data fields were empty, accompanying documents were reviewed and missing data entered to ensure complete coverage.

The accompanying planning applications, including maps, technical specifications and detailed contextual descriptions, were manually assessed to allocate the intervention to a *type* of temporary use (i.e. ordinary or extraordinary). To illustrate with examples from Newcastle, a "display of 1 x 2.44m x 1.83m and 1 x 3.66m x 2.44m non-illuminated advertising boards for a temporary period" was defined as an 'ordinary' instance of temporary use, following the definitions outlined above. In contrast, a "change of use of part of public highway to front of

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1-6 Eldon Square to temporary street market (*sui generis*)” was defined as an extraordinary temporary intervention. Following Carmona (2014), the assessment and allocation exercise focused on interpretive criteria, namely the scope/design of the proposed use, the way it was expected to shape the future physical characteristics of the site, and the way the space would be occupied. Alongside the *type* of temporary use proposed, the *time* the planning application was submitted (2000-07 or 2008-15), the *function* of the temporary use, the *decision* taken by the local planning authority on the application, and the number of *occurrences* of temporary use on the site were also extracted. Table 1 provides a more detailed explanation of these variables and their derivation.

[Table 1 here]

Stage 2: Analysing the Structural Characteristics of Captured Temporary Use

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

Stage 3: Analysing the Spatial Patterning of Captured Temporary Use

The final stage involved analysing the spatial patterning of captured temporary uses by employing geospatial techniques in Bristol and Liverpool. Their selection allowed for exploration of two key contrasts between the two cities. The first concerned the characteristics of temporary use recorded in each city: the ordinary type was particularly prominent in Bristol

and the extraordinary category more so in Liverpool. Secondly, while Bristol and Liverpool have similarly long histories as major port cities, multiple studies have highlighted their divergent post-industrial fortunes, with Bristol presented in some accounts as the “star performing city” of the eight core cities and Liverpool experiencing some of the most acute socio-economic challenges (Champion and Townsend, 2011: 1552). This allowed consideration of the extent to which these contrasting urban socio-economic contexts gave rise to variable intra-city spatial patterning in captured temporary use over time.

Against this backdrop, the main dataset assembled in stage one was checked for repeat applications. This was necessary to remove overlapping points for the same activity. The result was to leave a single point for each type of activity that occurred on or within a specific site or space. This focus on sites as opposed to applications resulted in a sample of 376 sites in Bristol and 534 in Liverpool. For each temporary use to be geolocated, XY coordinates were extracted from the online planning applications database for Bristol and Liverpool and their distribution mapped. Second, an average nearest neighbour index (NNI) was calculated based on the average straight-line distance from each temporary use to its nearest neighbour, using the boundaries of the Bristol and Liverpool core cities to determine the spatial extent of the analysis. An NNI score of less than one indicated the pattern of temporary use tended towards clustering, and when greater than one dispersion.

The final stage of the spatial analysis involved identifying local groupings of temporary uses in the two core cities. In separate runs, the Bristol and Liverpool data were subjected to Grouping Analysis available in ArcGIS 10.6 (for the method used, see supplementary material). This technique was employed to identify clusters of temporary uses based exclusively on locational traits, with X and Y coordinates forming the only two variables in the grouping exercise. The result was the creation of clusters of temporary uses with similar locational profiles, but that may or may not share similar structural characteristics (e.g. function or time). The optimum solution was then mapped and descriptive statistics calculated and used to profile the groups based on cross-tabulations with the distributions of the type and time variables.

Modelling Captured Forms of Temporary Use in England’s Core Cities

Of the 5890 applications for temporary uses recorded in the core cities dataset for the period 2000-15, only 11% (n=626) were categorised as extraordinary uses based on the definition under the ‘type’ category shown in Table 1. The number of applications for temporary uses was

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

12% higher in the 2008-15 period than in 2000-07. Of all temporary use applications recorded over the 2000-15 period, the use of public spaces yielded comparatively low levels of temporary activity (4%) compared to applications for temporary use on residual spaces (44%). Applications to reuse structures (26%) and vacant land (26%) were comparable, representing the kind of short-term appropriation of space highlighted in much of the existing literature (see, for example, Oswalt et al., 2013; Németh and Langhorst, 2014).

With this context in mind, binary logistic regression was used to test whether the odds of a temporary use being defined as ‘extraordinary’ (coded 1) compared to ‘ordinary’ (coded 0) (the dependent variable) increased or decreased owing to the underlying characteristics embodied in the four independent variables listed in Table 1. A test of the full model against the constant only model was statistically significant with a Chi-Square value of 72.4 (df = 6) at $p < 0.000$. The overall prediction success of the model was 89.4%.

[Table 2 here]

When comparing extraordinary and ordinary types of temporary use, the model returned four statistically significant main effects (Table 2). The odds of a temporary use being extraordinary rather than ordinary were found to be 37% lower in period one (2000-2007) than period two (2008-2015). For the function variable, applications for extraordinary temporary uses were 20% less likely to occur on vacant land than on residual land and public spaces when compared to ordinary uses. In relation to temporary use of structures, applications were 1.5 times more likely for extraordinary than ordinary applications. Unlike the other three independent variables, for the occurrence variable no significant effects were recorded between reoccurring and isolated categories. For the decision variable, refusals of applications for temporary use were 44% less likely for extraordinary applications than ordinary applications.

The results of the regression model reveal a number of important features of temporary use across the core cities. Firstly, applications for extraordinary temporary uses were more likely in the recession and recovery period (2008-15) than in the pre-recession period (2000-2007). Previous research has highlighted the role played by temporary interventions as strategies of reuse in response to crises of production and consumption, notably in the aftermath of the global financial crisis and the subsequent attempts by some governments to promote austerity programmes and reduce public expenditure (Madanipour, 2018; Moore-Cherry and McCarthy,

2016; Tonkiss, 2013). That extraordinary forms of temporary use increased in the aftermath of the financial crisis seemingly holds true here. However, the analysis also reveals that ordinary forms of temporary use remained much more common than extraordinary types, totalling 75% of all applications submitted between 2000 and 2015. This finding is important because the balance between different types of temporary use, and its relationship over space and time, has been afforded little research attention to date.

Secondly, the primacy afforded to ‘urban wastelands’ (Urban Catalyst, 2003) and brownfield land in analyses of temporary use belies a much more diverse set of land use redevelopment practices when extraordinary and ordinary forms of temporary use are distinguished from one another. Indeed, the model revealed that applications for extraordinary temporary use were more likely to occur on residual and public spaces and in structures than on vacant land/sites (the latter category most analogous to conventional categorisations of previously-developed brownfield land). This would seem to challenge the primacy of brownfields as sites most likely to accommodate extraordinary forms of temporary use (e.g. Oswald et al., 2013). At the same time, the analysis also supports the expectation that public rather than privately owned land would be more strongly associated with experimental temporary uses (Németh and Langhorst, 2014). Despite the low overall proportion of temporary use on public spaces (4%), 70% of all temporary uses on public spaces were defined as extraordinary whilst of all these extraordinary temporary uses, 24% were on public spaces, second only to structures (35%).

Thirdly, our expectation had been that approval rates for extraordinary types of temporary use would be lower than for ordinary uses, given that the former tend to be less conservative and more controversial (Bishop, 2015). Across the eight core cities, however, applications for extraordinary uses were more likely to be approved. This calls into question the assumption that temporary use is primarily associated with a weak planning context and an inability to regulate development, where contentious proposals face fewer barriers to consent (Urban Catalyst, 2007). An alternative interpretation is that what might appear ostensibly to be a more permissive regulatory regime in reality reflects the priority given to temporary uses, both formally or informally, in planning or regeneration strategies, either as a response to a hiatus in developer interest or as a means of attracting more innovative uses and catalysing future revitalisation, however superficial the actual commitment to temporary use might be (see Martin *et al.*, 2019).

Fourth, the model revealed that isolated as opposed to repeat applications were non-significant in statistical terms. In contrast, the time, function and decision variables were of greater significance in determining differences between the two temporary use types. What this suggests is that while extraordinary temporary uses might well act as stopgap solutions for the re-appropriation of space under weak/permissive planning regimes or in the context of poorly articulated visions of future development (Bishop and Williams, 2012), the opportunities and precarities often associated with such practices are only part of the story. The proportion of recurring applications suggests that captured temporary uses could represent instances of compliance or reflect enforcement measures, as planning, licensing and health and safety systems recover control of developments that originated beyond their initial regulatory reach (Adams, 2008; Bishop and Williams, 2012; Durst and Wegmann, 2017). Changes to planning policy in England – including the introduction of the meanwhile use lease in 2009 (DCLG, 2009) and the revision of the 1987 Use Classes Order^{iv} – may also have encouraged greater flexibility in how land and properties were used during the study period and conceivably could have affected levels of reoccurrence over time.

The Spatial Patterning of Temporary Use in Bristol and Liverpool

In this section, Bristol and Liverpool provide the focus for further detailed analysis of the spatial patterning of temporary use. Nearly half (48%) of all temporary uses in Bristol and over two-thirds (67%) in Liverpool were concentrated in the ‘urban cores’, as defined in the relevant planning documents for the two cities (see BCC, 2015; LCC, 2018). The significance of these patterns of spatial concentration is reflected in the fact that Bristol’s urban core accounts for just 9.6% of the total area covered by the local authority boundary and Liverpool’s accounts for less than one-third (28.4%). The next step involved using the average nearest neighbour index (NNI) to test whether sites of temporary use in Bristol and Liverpool tended towards localised spatial clustering or dispersion over the period 2000-15 (Table 4). In doing so, the extent of localised clustering or dispersion of sites was calculated for all instances of temporary use (‘A’ in Table 3) and for segmented instances based on a combination of type and time (‘B’). Seven spatial outliers were removed in each city, leaving a sample of 369 sites in Bristol and 527 in Liverpool^v.

When the analysis focused on all sites of captured temporary use (‘A’), the NNI revealed a broad tendency towards spatial clustering in both cities. When segmented by type (‘B’), there was evidence that ordinary uses clustered to a degree in both cities but that extraordinary uses

1
2
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
7
8 divergence from this pattern was found in relation to the type variable in Bristol, where the
9
10 score related to the extraordinary use category suggests that the observed patterning was not
11
12 significantly different to what would be expected for a random distribution.
13
14
15

16
17 [Table 3 here]
18
19

20
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).
26
27
28
29

30
31 [Figures 2 and 3 here]
32
33

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%.
46
47
48
49
50
51
52
53
54

55
56 [Table 4 here]
57
58
59
60

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

In the post-recession period, the majority of Groups in Bristol experienced an increase in the number of sites on which temporary uses occurred. During the same period in Liverpool, all groups experienced an increase in the number of temporary use sites, the exception being Group 1. The proportion of proposed extraordinary uses in Bristol increased or remained unchanged in the pre- and post-recession periods in all groups, the exception being Group 5 which experienced a decline. In Liverpool, a similar pattern is evident, with Group 5 the only one experiencing a decline in the proportion of temporary uses over time. These trends confirm that extraordinary temporary uses became more frequent in both cities after the financial crisis. At the same time, however, the analysis also demonstrates that in both cities, applications for ordinary uses actually exceeded those of extraordinary uses.

That ordinary forms of temporary use are integral to mainstream urban development goes some way to explaining their pervasiveness, but political and economic contexts are also likely to be important in explaining trends in temporary use more broadly. At the national level, the Urban White Paper (DETR, 2000) sought to address the continuing legacy of deindustrialisation in urban areas of England by identifying and remediating stocks of vacant and derelict land. However, in the aftermath of the financial crisis, this agenda began to erode as macro-economic circumstances weakened and austerity politics was rolled out. As national regeneration programmes were dismantled and fiscal resources cut, land and property market circumstances deteriorated leading to local policy-makers opting to promote or simply accept short-term uses of land as alternatives to conventional forms of development (Moore-Cherry and McCarthy, 2016; Martin *et al*, 2019). For Bristol, the increased scarcity of public funding as a result of central government’s austerity programme may have raised local political sensitivity about the allocation of resources to sometimes controversial high-profile developments – especially given that ordinary temporary uses (notably car parking) were an obvious and viable lower cost alternative (Martin *et al*, 2019). In Liverpool, local regeneration strategy for the most part eschewed pro-active encouragement for flagship or innovative temporary uses, and this too can be viewed as a feature of the local political context that explains the relative preponderance of ordinary uses (Martin *et al*, 2019).

Against this context, the locational analysis reveals important features in the distribution of temporary use in the two cities. First, the NNI suggests that spatial proximity between sites needs to be afforded greater consideration in interpretations of the production of temporary use than has been the case to date. Second, although extraordinary forms of temporary use may

have occurred on the same site more than once, helping in part to explain why the number of new sites proposed was relatively limited in both cities^{vi}, the analysis confirms the spatial and temporal exceptionalism of ‘extraordinary’ uses when compared to ‘ordinary’ ones. This pattern of reuse was reinforced through the results of the Grouping Analysis, which found that extraordinary uses tended to concentrate more readily in the core/downtowns of both cities. Yet even in these central locations it was ordinary forms of temporary use that predominated, a feature of temporary use that has not been widely acknowledged in previous research.

Conclusion

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

Trend analysis and regression modelling revealed a complex pattern of temporary use across the eight core cities. Between 2000 and 2015, 5890 planning applications for temporary development were recorded, the majority of which (almost 90%) were for what we term ordinary forms of temporary use. The analysis demonstrated that the proportion of applications for temporary use was 12% higher in the period after 2008, as cities grappled with the effects of global financial crises. Although the number of applications for what we call extraordinary forms of development in the dataset is relatively small (n=626), the volume increased from 212 in the 2000-07 period to 414 between 2008 and 2015. This suggests that higher-profile temporary developments played an increasingly important role in efforts to offset economic downturn and compensate for weakening land and property market conditions (Moore-Cherry and McCarthy, 2016). Whether the growth of temporary uses along these lines represents the emergence of “spaces of hope in the city” (Tonkiss, 2013: 323), or constitutes a more prosaic

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

countercyclical response by developers or policymakers to dwindling developer interest, remains uncertain. Although it is not possible here to expose the underlying drivers of temporary use in the eight core cities, distinguishing empirically and conceptually between different forms of temporary use helps begin to reveal processes of urban spatial production and consumption that underlie the reuse of land and buildings, and which help to determine their spatial and temporal imprints (Madanipour, 2018).

Findings from the trend and regression analysis also help to advance understanding of the nature of temporary use. The results suggest the need to recognise that temporary uses fulfil an important role beyond the inner-urban brownfield land on which much of the previous research has focused (Andres and Grésillon, 2013). This is especially the case when assessing the distribution of extraordinary types of temporary use, which our analysis suggests are more likely to be developed on under-utilised publicly owned land than on brownfield sites, as they are conventionally understood. While there is a rich and diverse literature on what Andres (2013) terms ‘differential spaces’ in which derelict land is subject to processes of appropriation, transformation and regulation, the analysis in this paper augments this by demonstrating the importance of appreciating other urban spaces in accommodating temporary uses.

The trend and regression analysis also shed further light on the diverse ways in which temporary uses emerge. The findings reveal the relative preponderance of approvals of repeat applications for extraordinary temporary development. The frequency of repeat applications could be interpreted as suggesting that temporary uses sometimes acquire an unanticipated degree of permanence and/or that what are envisaged as short-term expedients can endure when expected upturns in land and property market fortunes fail to materialise (Martin *et al*, 2019). A potential interpretation of this, further corroborative investigation notwithstanding, is that extraordinary temporary uses may sometimes evolve as more than interim or stopgap solutions that exists for short-periods (as noted by Haydn and Temel, 2006; Oswalt *et al.*, 2013).

Through the geospatial analysis, it was found that temporary uses in both Bristol and Liverpool showed a tendency towards spatial clustering, as evidenced through the Nearest Neighbour Index. The geography of clustering was also revealed through the Grouping Analysis, which demonstrated that the concentration of high-profile uses in the cores/downtowns of the two cities become more pronounced in the post-recession period. It is perhaps unsurprising to find extraordinary temporary uses being (re-)produced unevenly within cities as different areas

jostle to attract, create and/or retain landmark temporary uses. However, the roles played by ordinary forms of temporary use in the context of local land markets struggling to recover from post-crisis economic downturn have often been overlooked in interpretations of temporary urbanism (see Tonkiss, 2013).

The findings here highlight the value of employing planning applications data and geospatial approaches to add to our understanding of intra-city patterning of temporary development as a complement to intensive historical and narrative-based approaches to temporary use (Colomb, 2012; Andres, 2013). Further research is needed to identify locations – within and beyond our sample – where temporary uses are more or less likely to occur based on certain underlying characteristics (e.g. morphology, topography or ownership). Similarly, this study relied on a dataset of captured forms of ordinary and extraordinary temporary uses, but there is also the potential to use the applications dataset to develop alternative classifications of short-term use based on specific functions (such as urban beaches or community gardens). Finally, further work could extend the focus to identify spatial and temporal associations between different forms of temporary use and sites of new commercial redevelopment or patterns of gentrification in recognition that vacancy, as a feature intrinsic to the functioning of increasingly deregulated local land markets, exposes temporary users to forms of precarity and risk that varies across time and space (Martin *et al*, 2019; Ferreri and Vasudevan, 2019).

References

- Adams D (2008) Mapping out the regulatory environment and its interaction with land and property markets. *Energy Policy* 36(12) 4570–4574.
- Adams D and Hardman M (2013) Observing Guerrillas in the Wild: Reinterpreting Practices of Urban Guerrilla Gardening. *Urban Studies* 51(6): 1103–1119.
- Andres L (2013) Differential spaces, power hierarchy and collaborative planning: a critique of the role of temporary uses in shaping and making places. *Urban Studies* 50(4): 759–775.
- Andres L and Grésillon B (2013) Cultural brownfields in European cities: a new mainstream object for cultural and urban policies. *International Journal of Cultural Policy*, 19(1): 40–62.
- Angus J (2015) More than a stopgap solution. *Town & Country Planning*, 84, 191–222.

- Binnie J, Edensor T, Holloway J, Millington S and Young C (2007) Editorial: Mundane Mobilities, banal travels. *Social and Cultural Geography*, 8(2), 165-174.
- Bishop P (2015) From the subversive to the serious: temporary urbanism as a positive force. *Architectural Design* 85(3): 136–141.
- Bishop P and Williams L (2012) *The Temporary City*. London: Routledge.
- BCC [Bristol City Council] (2015) *Bristol Central Area Plan*. Bristol, Bristol City Council.
- Carmona M. (2014) The Place-shaping Continuum: A Theory of Urban Design Process. *Journal of Urban Design*, 19(1), 2-36.
- Champion T and Townsend A (2011) The Fluctuating Record of Economic Regeneration in England's Second-order City-regions, 1984-2007. *Urban Studies* 48(8): 1539–1562.
- Champion T and Townsend A (2013) Great Britain's Second-Order City Regions in Recessions. *Environment and Planning A* 45(2), 362-382.
- Colomb C (2012) Pushing the urban frontier: temporary uses of space, city marketing, and the creative city discourse in 2000s Berlin. *Journal of Urban Affairs* 34(2): 131–152.
- DCLG [Department for Communities and Local Government] (2009) *Looking After Our Town Centres*. DCLG, London.
- Deslandes A (2013) Exemplary amateurism: thoughts on DIY urbanism. *Cultural Studies Review* 19(1): 216–227.
- DETR [Department of the Environment, Transport and the Regions] (2000) *Our Towns and Cities: The Future – Delivering an Urban Renaissance*. DETR, London.
- Doron G M (2000) The dead zone and the architecture of transgression. *City* 4(2), 247-263.
- Durst N J and Wegmann J (2017) Informal housing in the United States. *International Journal of Urban and Regional Research*, 41(2): 282–297.
- Ferreri M and Vasudevan A (2019) Vacancy at the edges of the precarious city. *Geoforum* (online first).
- Finn, D (2014) DIY urbanism: implications for cities. *Journal of Urbanism*, 7, 381-398.
- Groth J and Corijn E (2005) Reclaiming urbanity: Indeterminate spaces, informal actors and urban agenda setting. *Urban Studies* 42(3): 503–526.

- Harris E (2015) Navigating Pop-up Geographies: Urban Space-Times of Flexibility, Interstitiality and Immersion. *Geography Compass* 9(11): 592–603.
- Haydn F and Temel R (2006) *Temporary urban spaces: concepts for the use of city spaces*. Berlin: Birkhäuser.
- Henneberry J (2017) *Transience and Permanence in Urban Development*. Oxford: John Wiley and Sons.
- Hincks S, Webb B and Wong C (2014) Fragility and Recovery: Housing Localities and Uneven Spatial Development in the UK. *Regional Studies* 48(11): 1842–1862.
- Hou J (2010) *Insurgent Public Space: Guerrilla Urbanism and the Remaking of Contemporary Cities*. Oxon: Routledge.
- Knox P L (2005) Creating Ordinary Places: Slow Cities in a Fast World. *Journal of Urban Design*, 10(1), 1-11.
- LaFrombois M (2017) Blind spots and pop-up spots: A feminist exploration into the discourses of do-it-yourself (DIY) urbanism. *Urban Studies* 54(2): 421–436.
- LCC [Liverpool City Council] (2018) *The Draft Liverpool Local Plan (pre-submission draft)*. Liverpool, Liverpool City Council.
- Madanipour A (2018) Temporary use of space: urban processes between flexibility, opportunity and precarity. *Urban Studies* 55(5): 1093–1110.
- Martin M, Deas I and Hincks S (2019) The Role of Temporary Use in Urban Regeneration: Ordinary and Extraordinary Approaches in Bristol and Liverpool. *Planning Practice & Research*. Online First <https://doi.org/10.1080/02697459.2019.1679429>
- Moore-Cherry N and McCarthy L (2016) Debating Temporary Uses for Vacant Urban Sites: Insights for Practice from a Stakeholder Workshop. *Planning Practice & Research* 31(3): 347–357.
- Mould O (2014) Tactical Urbanism: The New Vernacular of the Creative City. *Geography Compass*, 8(8): 529–539.
- Németh J and Langhorst J (2014) Rethinking urban transformation: Temporary uses for vacant land. *Cities* 40(Part B): 143–150.

- O’Callaghan C and Lawton P (2015) Temporary solutions? Vacant space policy and strategies for reuse in Dublin. *Irish Geography* 48(1): 68-87.
- Oswalt P, Overmeyer K and Misselwitz P (2013) *Urban Catalyst: The Power of Temporary Use*. Berlin: DOM Publishers.
- Patti D and Polyak L (2015) From Practice to Policy: frameworks for temporary use. *Urban Research and Practice*, 8(1), 122-134.
- Pearce P, Wu M-Y, Chen T. (2015) The spectacular and the mundane: Chinese tourists’ online representations of an iconic landscape journey. *Journal of Destination Marketing and Management*, 4, 24-35.
- Reynolds E (2011) Interwhile uses. *Journal of Urban Regeneration and Renewal* 4(4): 371–380.
- Senatsverwaltung für Stadtentwicklung (SfS) Berlin (2007) *Urban Pioneers, Temporary Use and Urban Development in Berlin*. Berlin: Jovis Verlag.
- Solà-Morales, I. (1995) ‘Terrain Vague’ : In Davidson, C. (ed) *Anyplace*. Cambridge, MA: MIT Press, pp. 118–123.
- Tonkiss F (2013) Austerity urbanism and the makeshift city. *City* 17(3): 312–324.
- Tornaghi C (2014) Critical geography of urban agriculture. *Progress in Human Geography*, 38(4), 551-567.
- Urban Catalyst (2003) *Strategies for Temporary Uses: Potential for Development of Urban Residual Areas in European Metropolises*. Berlin: Studio Urban Catalyst.
- Urban Catalyst (2007) Patterns of the unplanned. In: Franck K and Stevens Q (eds) *Loose Space: Possibility and Diversity in Urban Life*. New York: Routledge, pp. 271–288.
- Urban Task Force (1999) *Towards an Urban Renaissance: Final Report of the Urban Task Force*. London: Spon Press.

ⁱ <http://www.legislation.gov.uk/ukxi/2015/596/schedule/2/made>

ⁱⁱ For example, land can be used temporarily for up to 28 days in any calendar year of which not more than 14 days in total may be for the purposes of holding a market or motor racing

event. In contrast, when land is used for the purpose of commercial filmmaking, the period of use cannot exceed 9-months in any 27-month period. Similarly, the temporary use of a site as a state-funded school for a single academic year is defined as any period beginning with 1st August and ending with the next 31st July.

ⁱⁱⁱ Urban agriculture and community gardening might not necessarily be considered an ‘extraordinary’ activity given their long-lineage as spaces of community socialisation and food production. However, in the methodology section we outline a set of criteria for assessing ‘ordinary’ and ‘extraordinary’ uses that included urban agriculture and community gardening. This was through our reading of these activities as “...visionary and innovative projects” that were assessed according to whether, from the planning application narrative, these individual activities represented “...exemplary practices explicitly addressing urban food provision and food rights, individual and communal health, urban and peri-urban environmental quality and socio-environmental justice” (Tornaghi, 2014: 552).

^{iv} *The Town and Country Planning* (Use Classes) Order 1987 allocates the uses of land and buildings to categories termed “Use Classes”. The categories are indicative of the specialisation and functions that are characteristic of each class.

^v Using the Near tool, available in ArcGIS 10.6, the distances (metres) between each temporary use data point and their most proximate (nearest) neighbours were calculated as a new field based on a planar method. Those points that were deemed to be at a distance greater than 2.5 standard deviations were identified as spatial outliers and excluded from the analysis.

^{vi} Among sites featuring extraordinary uses, 40% in Bristol and 36% in Liverpool were subject to reoccurring applications. Of these, in Liverpool 79 (54%) were reoccurring applications for the same or comparable activities, and in Bristol the corresponding figure was 35 (28%).

Table 1. Characteristics of Temporary Use

Variable	Derivation of Categories
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’.	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.
	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 caf��s/bars and restaurants’, ‘temporary performance spaces’, ‘street markets’, ‘model car racing facilities’, ‘mooring of watermills/wheelhouses’, ‘informal play areas’, ‘public theatres’ and ‘urban beaches’.
Time: The date an application for temporary use was received by the local authority or the date an appeal decision may have been taken.	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.
	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.
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.	Land: Corresponds with applications whose confines were associated with clearly defined, bounded plots, parcels and sites.
	Structures: Corresponds with applications whose confines were associated with clearly defined buildings and assemblies with a listed address.
	Public Spaces: Corresponds with applications whose confines were associated with clearly defined public spaces such as streets, squares, parks and open spaces.
	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).
Decision: Defined via the planning decision and appeal decision fields extracted from the local authority planning applications portal for each application of temporary use.	Refuse: Corresponds with an ‘Application Refused’ decision recorded and registered by the local planning authority.
	Withdraw: Corresponds with an ‘Application Withdrawn’ decision recorded and registered by the local planning authority.
	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.
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.	Isolated: Corresponds with applications whose unique address and postcode appeared only once in the dataset of captured temporary uses following duplicate analysis.
	Reoccurring: Corresponds with applications whose unique address and postcode appeared multiple times in the dataset of captured temporary uses following duplicate analysis

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 (All Instances of Temporary Use)							
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 (Segmented by Type and Time)							
Bristol							
Ordinary	9	331	176.3	314.7	0.56	-15.3	.000
Extraordinary	1	35	701.6	716.5	0.97	-0.2	.820
Pre-recession	5	212	252.1	376.7	0.66	-9.2	.000
Post-recession	2	156	258.4	440.5	0.58	-9.9	.000
Liverpool							
Ordinary	8	447	168.0	281.7	0.60	-16.3	.000
Extraordinary	2	76	256.9	512.9	0.50	-8.3	.000
Pre-recession	6	340	196.4	312.4	0.63	-13.1	.000
Post-recession	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)

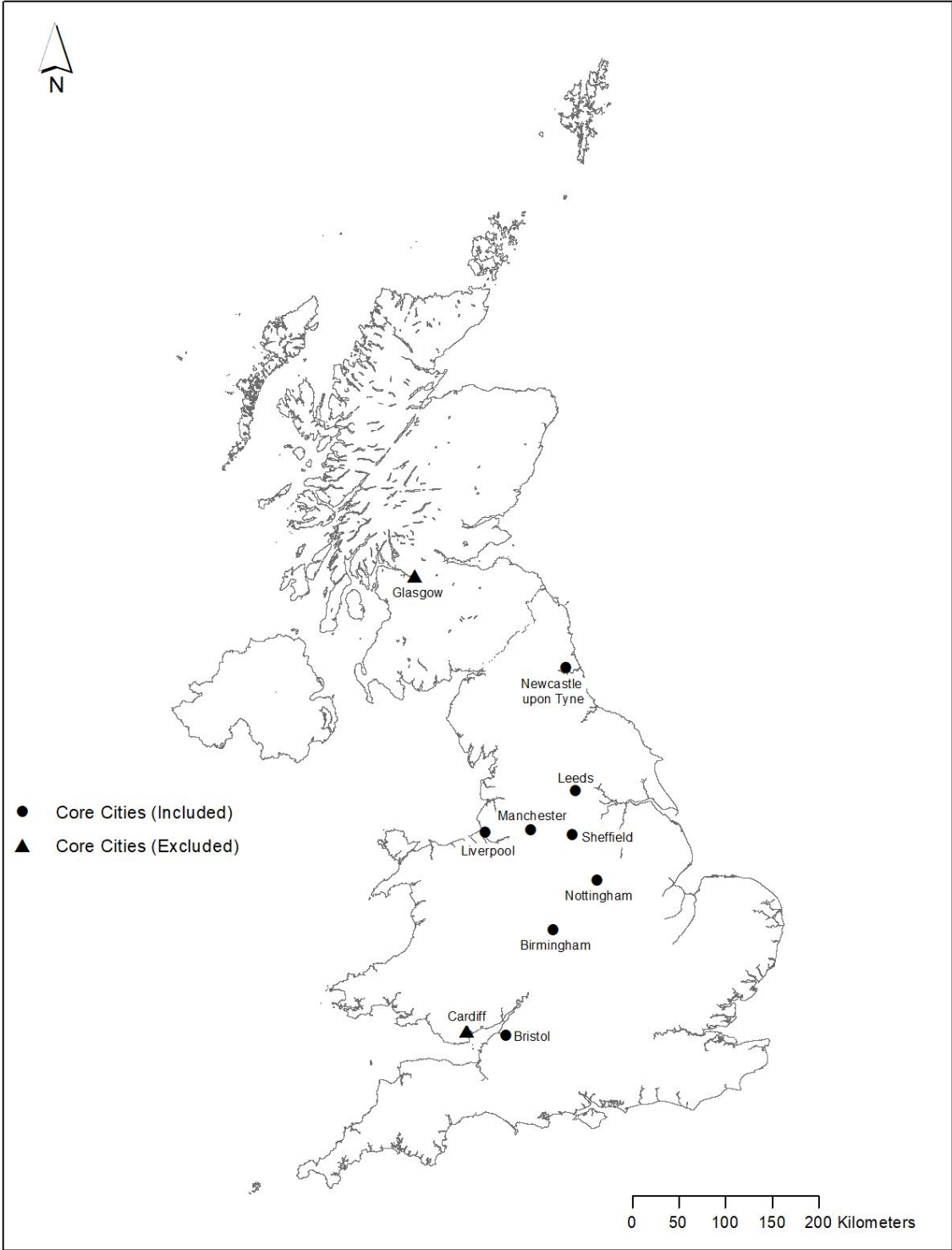


Figure 1. Core Cities

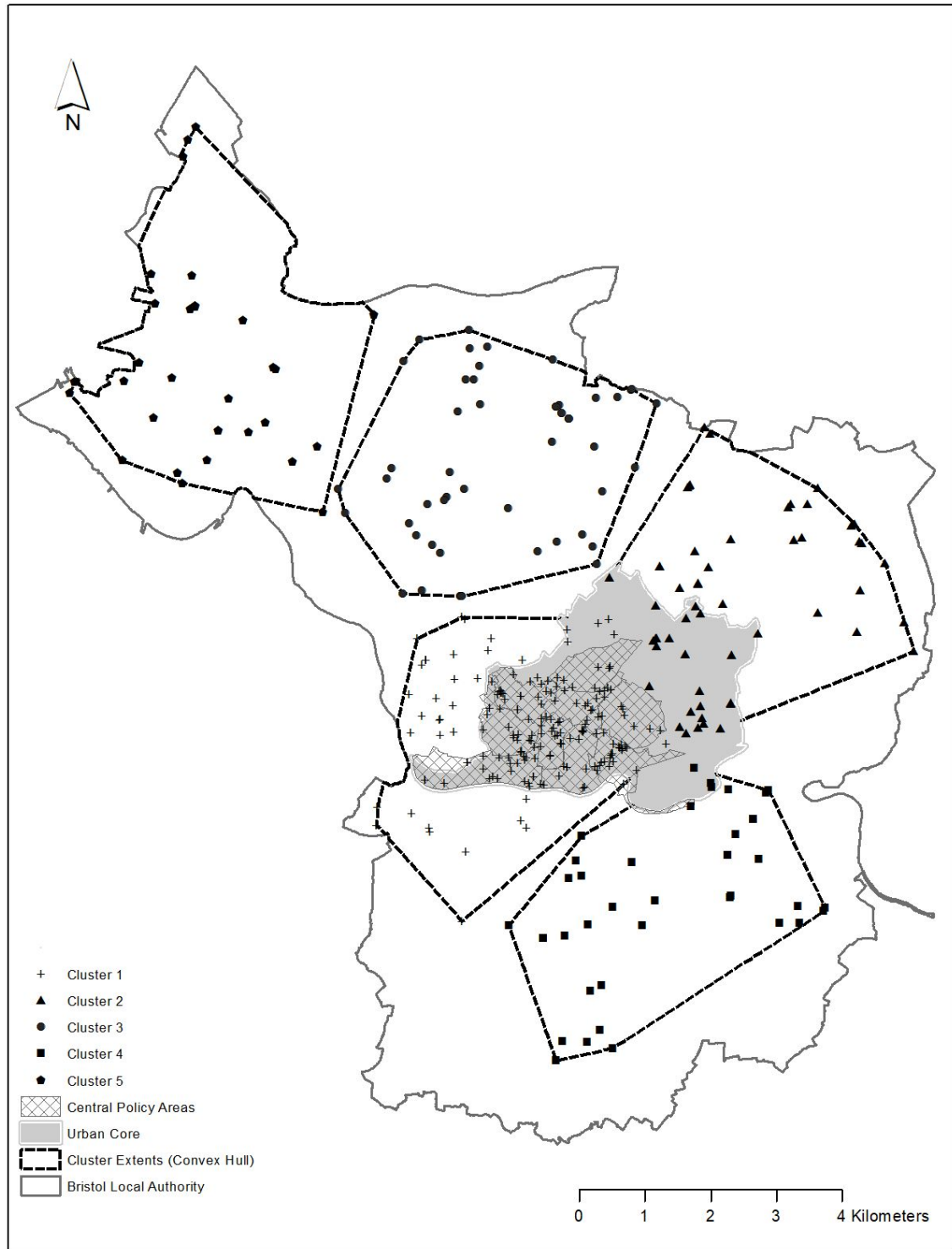


Figure 2. Temporary Use Clusters Bristol

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

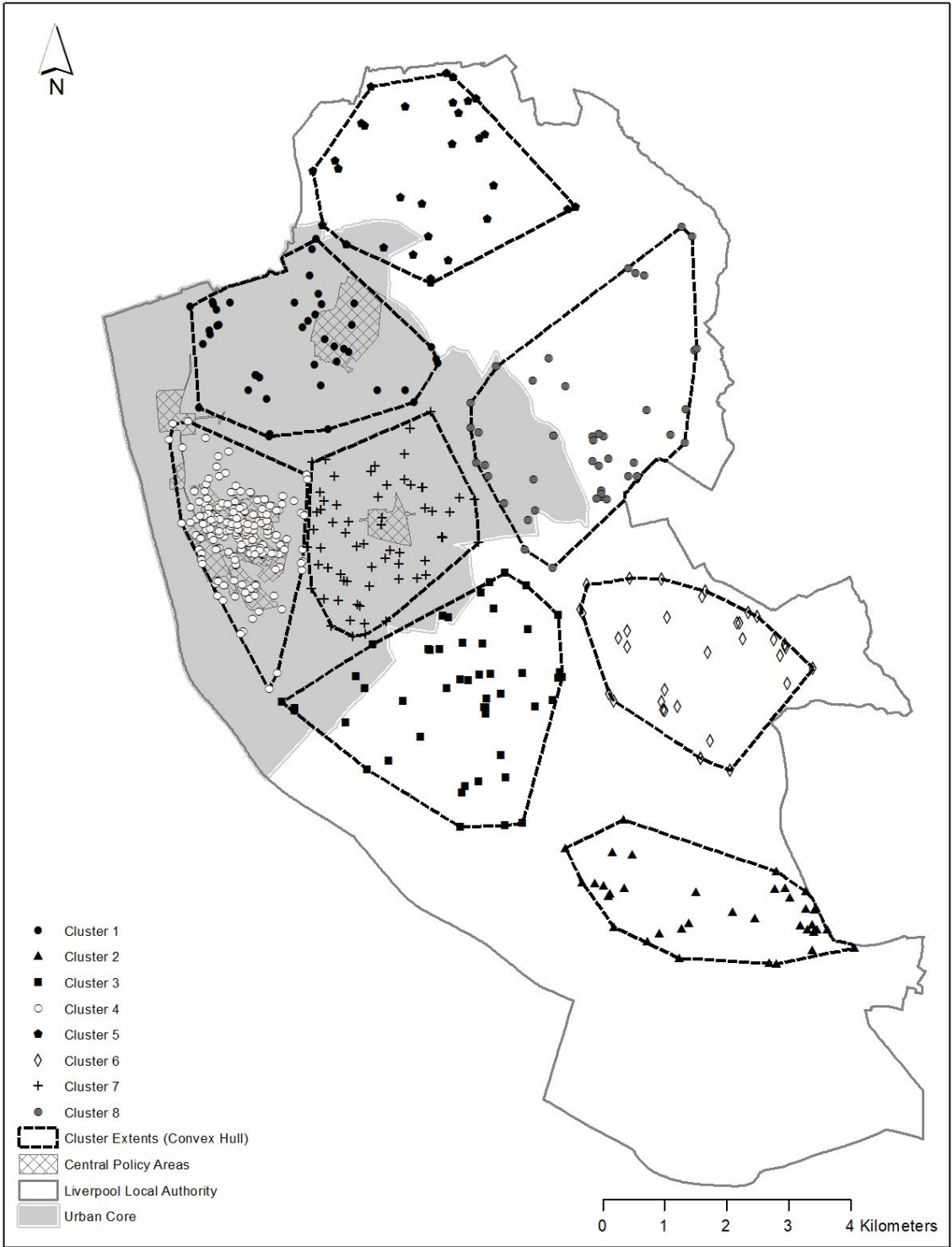


Figure 3. Temporary Use Clusters Liverpool

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

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60