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UNDERSTANDING THE PLANNING CHALLENGES OF BROWNFIELD DEVELOPMENT IN COASTAL URBAN AREAS OF ENGLAND

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Abstract

Coastal settlements, whether rooted in port, defence or tourism economies, have experienced considerable economic, social and environmental change over the last 30-40 years, which has often resulted in building obsolescence and vacant land. Brownfield sites, especially on the waterfront, are strategically valuable, but can be constrained by costs of treatment, the fragmentation of available plots and declining property values. This paper addresses the need for a better understanding of the characteristics of brownfield land in coastal settlements and the challenges facing planning in the regeneration of these sites through an analysis of the National Land Use Database and a survey of Heads of Planning Service. There is a plentiful supply of brownfield sites on the coast, but one-third requires remedial treatment. Planners regard brownfield land as a priority, but depend upon public funding for successful regeneration. Economic circumstances and frequent policy shifts have impeded the redevelopment of brownfield land on the coast. There is a need for new imaginative approaches that will help coastal communities reap the undoubted benefits of brownfield sites. Only places on the 'cosmopolitan' coast expressed confidence in their ability to deliver regeneration without government funding or intervention.

Introduction

Historically, port cities and other coastal towns have occupied strategically important locations for trade, defence, industry, leisure and environmental protection (Hoyle and Pinder, 1992). During the twentieth century, coastal settlements experienced considerable economic, social and environmental change, which has created very location specific problems for regeneration (Galland and Hansen, 2012). Port cities and their manufacturing base have been impacted by globalisation and changes in technology (including containerisation), while naval dockyards have contracted in response to successive defence reviews after the end of the Cold War ('peace dividend') (Marshall, 2001). Traditional seaside resorts, referred to as the least understood of Britain's 'problem' areas, have confronted new circumstances in the face of competition from overseas package holidays as well as a much more diversified range of domestic tourism products and destinations (Beatty and Fothergill, 2003).

One manifestation of these radical social and economic changes is the extent of brownfield land awaiting redevelopment in coastal settlements. Brownfield land has been defined as 'any land or premises which has previously been used or developed and is not currently fully in use, although it may be partially occupied or utilised. It may also be vacant, derelict, or contaminated. Therefore a

brownfield site is not necessarily available for immediate use without intervention' (Alker, Joy, Roberts and Smith, 2000, p.49). In coastal areas, brownfield land can consist of redundant port facilities, warehouses and manufacturing sites; derelict dockyards and other military installations; and derelict tourist accommodation and attractions. While these kinds of site are similar to brownfield sites found in most towns and cities, the coastal dimension adds new challenges to their regeneration, including the limits of knowledge of effective planning intervention (Rickey and Houghton, 2009). The aim of this paper is two-fold. First, through an analysis of the existing National Land Use Database (NLUD) previously developed land data, the characteristics of brownfield land in coastal urban areas are examined. Second, through a survey of the attitudes and perceptions of local planning professionals in English coastal urban local authorities, the multi-dimensional challenges of regenerating coastal brownfield land are evaluated.

Brownfield redevelopment in coastal urban regeneration

Despite the prevalence of brownfield land and an acknowledgement by central government that brownfield development can tackle social, economic and environmental issues (Raco and Henderson, 2006), many barriers exist to these sites being developed. Barriers to development include fear of unknown environmental conditions and contamination, regulatory controls, potential delays prior to and during development, increased costs associated with brownfields and negative image of brownfield sites (Syms, 2004), which can create low rental or sales revenues (De Sousa, 2000). The barriers associated with brownfields can make them unviable and thus unattractive to potential developers in comparison with greenfield land (Thornton, *et al.*, 2007; Wedding and Crawford-Brown, 2007).

Fear of the unknown is often the most intractable barrier to overcome as it is difficult for developers to determine the cost of dealing with issues such as contamination or buried structures and utility services (Syms, 2004). A site investigation that includes a historical background study and an intrusive physical investigation (drilling, test pits) may help alleviate such uncertainty (Syms, 2004). However, there is a residual risk that further contamination may be discovered. Thus, while contamination may not exist, the perceived potential risks associated with costly clean-ups act as a deterrent to development. In cases where contamination is encountered, it can be difficult to contain or remove, and dealing with it may result in delays which add to the costs associated with the redevelopment of the site and/or changes to the quantum of development (such as higher density development in order to offset the added expenditure on site preparation work) (Tiesdell and Adams, 2004).

In coastal urban areas, brownfield sites possess many advantages and opportunities for the regeneration that may not be present in other inland urban areas. The prominence of waterfront sites is often used as a catalyst for

regeneration and recreating the image of an entire city (Marshall, 2001). Regeneration also provides an opportunity to form a new relationship between the coast and the city as the waterfront is often the showpiece used to attract investors back into a city (Marshall, 2001). Land and property with coastal and sea views typically command a 'premium' price, which might encourage investors and developers to overcome some of the potential barriers inherent with such sites.

However, the challenges affecting the redevelopment of brownfield land are accentuated in coastal urban settlements because of the particular circumstances facing these locations. First, such settlements are disadvantaged by their geography. The existence of a coastline shapes their morphology so that they only possess 180^{o} hinterlands (rather than 360^{o}), which has implications for markets and viability (DCLG, 2007). Coastal areas can also have difficult topographies, such as steep-sided river valleys and cliff lines, which may also support sensitive and protected environmental habitats and resources. The risk associated with coastal development is enhanced by the action of more extreme weather conditions, including storms, erosion, flooding and the need for increased property maintenance. These risks are likely to be accentuated by climate change over the coming decades.

Second, the economies of coastal settlements can be characterised as 'single industry towns' – fishing, commercial cargo handling, defence or tourism. Such places can be associated with manual occupations, low wages, and seasonal employment with a lack of career opportunities (DCLG, 2007). The relative isolation of such settlements, often lying at the end of transport links, which may be deficient in terms of quality, frequency and speed of services, constrain the opportunities to diversify. As a consequence, levels of aspiration and educational attainment are often low within the local population, which further constrains the ability of the settlement to attract other businesses. Contrary to the popular image, many coastal settlements experience high levels of urban deprivation (Agarwal and Brunt, 2006).

Third, the demographic profile of coastal settlements is characterised by an inward migration of older residents seeking retirement, and an outward migration of younger residents seeking higher education and/or employment opportunities elsewhere. There can also be an inward migration of transient populations, seeking temporary employment opportunities in the local industries (especially port-based industries and tourism), and benefit claimant populations seeking both a benign environment and cheap housing (DCLG, 2007; Rickey and Houghton, 2009).

Fourth, these social circumstances can create a dual housing market, which is polarised between premium properties for the retired population and cheap, private rental accommodation, such as Houses in Multiple Occupation (HMO), for the transient and benefit claimant population (Smith, 2012). Despite these quite

distinct issues, a Department for Communities and Local Government (DCLG) Select Committee on Coastal Towns (2007) found that the special problems of coastal communities were lost or disguised as they tend to be grouped in with other inland areas by policy makers. The Select Committee called for the creation of specific measures for coastal towns to be implemented within government policy (DCLG, 2007).

The establishment of the Marine Management Organisation (MMO) in 2010 to oversee the marine planning system has helped to broaden the understanding of coastal settlements and the way in which they differ from other parts of the country. The MMO has formulated coastal typologies that acknowledge the commonalities and differences among all types of coastal communities (MMO, 2011). Four main clusters containing ten typologies were proposed: (1) 'coastal retreats', (2) 'coastal challenges', (3) 'cosmopolitan coast' and (4) 'coastal fringe' (see Table 1). These typologies encapsulate the characteristics of coastal settlements ranging from those struggling with regeneration to those with relatively prosperous economies and residents.

To support the deliverability of the regeneration of brownfield land, planners, regeneration bodies and developers have sought public-sector financial support, sometimes referred to as 'gap funding'. Funding bodies have expected developers to accept lower profit margins in exchange for taking on some of the risks associated with developments, especially brownfield developments (Syms, 2010). The primary goal of gap-funding programmes has been to encourage private-sector investment into areas where costs, real and/or perceived, may outweigh potential returns making the development unattractive relative to the risk (Syms, 2010).

In the past, public sector financial support has been made available within different schemes and policies, such as Urban Development Grants, City Grants and the English Partnerships' Partnership Investment Programme (Syms, 2010). The recent severe economic downturn and associated fiscal consolidation has resulted in a reduction in the availability of funding to support brownfield land development. Planners and other professions involved in urban regeneration have therefore sought other methods to make brownfield sites economically viable and thus deliverable by the private sector. However, the plight of coastal communities has not been specifically recognised within these schemes and so they have been in competition with claims from urban areas with more obvious and visible problems. The exceptions have been relatively small-scale schemes, such as the Sea Change programme (a £45m capital grants programme for local authorities to invest in culture and the arts, 2008-2011 from DCMS/CABE) (BOP, 2011) and the Coastal Communities Fund (a £23.7m programme to support the economic development of coastal communities, 2012-2013) (HM Government, 2012). Coastal urban regeneration clearly faces some particular challenges relating to the scale of the socio-economic transformations, the character and

nature of coastal settlements, and the apparent invisibility and neglect of coastal towns within government policy.

Methodology

In order to improve the understanding of the planning challenges of coastal brownfield sites, the study focused on local authorities in England that are considered to be both coastal and urban in nature. The characterisation of local authorities as urban was based on the Department for Environment, Food and Rural Affairs (DEFRA) *Classification of Local Authority Districts and Unitary Authorities* and utilised local authorities that were classified as 'Major Urban', 'Large Urban' or 'Other Urban' (DEFRA, 2009). Characterisation as coastal was based on the Marine Management Organisation's (MMO) *Coastal Typologies* (MMO, 2011). Local authorities who had a significant number (more than half) of lower super output areas (LSOAs) within any of the coastal typologies were considered as coastal urban areas for the purpose of this study. There were 54 local authorities which met both criteria and so formed the population for this study, although the number surveyed was reduced to 53 as Adur District Council and Worthing Borough Council now have a joint senior management team and was therefore treated as a single authority for the purposes of obtaining survey responses. Local authorities within Greater London were deliberately omitted from the study due to the highly competitive land market and strong focus on housing growth which prevail in the capital (Syms, 2010).

The selection method favoured the inclusion of local authorities in South East England, where 16 local authorities were represented in the sample. The number of coastal urban local authorities in the North West, South West, North East and East of England were 11, 10, 8 and 7 respectively. Of the 54 local authorities in the population, 11 (20.4 per cent) were major urban, 24 (44.4 per cent) were large urban and 19 (35.2 per cent) were other urban. This breakdown into urban categories differs slightly from the national (i.e. all urban local authorities) breakdown where 42.9 per cent were major urban, 25.7 per cent were large urban and 31.4 per cent were other urban. This difference suggests a slight over-representation of large urban and under-representation of major urban areas in the sample. Using the MMO (2011) classification, the majority of the population was characterised primarily into the 'coastal challenges' and 'coastal fringe' groupings.

Addressing the first aim of this research, namely to examine the nature of the brownfield land within the coastal urban local authorities in England, the Homes and Communities Agency (HCA) 2009 National Land Use Database (NLUD) of previously developed land was utilised to obtain information on brownfield sites in the 54 coastal urban areas. The database consisted of site specific data on individual brownfield sites across England, including geographic/site location information; site area (in hectares); land type; previous and current use; planning status; proposed use; housing suitability, capacity and density; and site owner.

Information about the individual sites is supplied by the respective local authorities. Out of all 333 local planning authorities in England, 95 per cent of local authorities provided information on brownfield sites in their area (HCA, 2011). A limitation of the NLUD database is that it offers information that was gathered only until 2009. Although the database was released by HCA in 2011, the data were compiled from 2009 information. One could argue, however, that the recent economic crisis has effectively halted most development and that there would be very little change since 2009. On the other hand, the same economic downturn may have resulted in more brownfield land being released as businesses cease operation.

With regard to the second aim of this study, which focuses on the attitudes of planning professionals in coastal urban local authorities towards the challenge of the regeneration of brownfield land, a personalised request to complete a questionnaire survey was sent by electronic mail (email) directly to those responsible for planning services (e.g. Directors or Heads of Service) in each of the 53 target local authorities in June, 2012, with a reminder in July and August, 2012. The questionnaire survey was delivered online and contained a mixture of closed and open-ended questions, with eight questions designed to gauge the planning professionals' attitudes on brownfield development and a further three general questions about the participants' roles within their respective local authority.

In total, 21 of the 53 local authorities (40 per cent) completed the questionnaire. Despite the potential for a non-response bias, response rates lay between 29 and 50 per cent for every region and there was at least one response from all regions. The highest returns were from the South East (6 out of 16 local authorities approached), the North West (4 out of 11) and the South West (4 out of 10). The North East and East of England had three and two responses respectively (3 out 8 and 2 out of 7 respectively), while Yorkshire and the Humber yielded just one response (1 out of 2). It should be noted that one participant did not specify the local authority that they represented. The local authorities that participated in this study were classified as 15.0 per cent 'major urban', 65.0 per cent 'large urban' and 20.0 per cent 'other urban', which indicated a slight bias to the 'large urban' areas in the sample. The sample therefore under-represents 'major urban' and 'other urban' areas and is biased towards the 'large urban' areas on the coast.

Nature of brownfield sites in Coastal Urban Local Authorities

Analysis of the HCA NLUD of previously developed land revealed that there are 5,267 brownfield sites among the 54 coastal urban local authorities in this study. These sites equal an area of 8,822.5 hectares of brownfield land with an average site area of 1.68 hectares. The majority of brownfield sites in coastal urban local authorities are categorised as previously developed land (PDL) that is now vacant (34.6 per cent). The second most frequent land type is PDL that is

currently in use and allocated in a local development plan or with planning permission (27.6 per cent), although no indication is given why these particular sites have not yet been developed. The remaining one-third of brownfield land (37.8 per cent) is not immediately developable in its present state, consisting of either vacant buildings that have been unoccupied for one year or more (Land type B, 19.4 per cent) or land that is so damaged that it cannot be returned to beneficial use without some form of treatment (Land type C, 18.4 per cent) (HCA, 2011).

The majority of brownfields in coastal urban local authorities are categorised as being in private ownership (53.6 per cent). It is likely that a significant portion of those sites with unknown ownership (25.8 per cent) are also in private hands. The complex ownership issues related to brownfields (see Adams and Hutchinson, 2000) are a strong barrier facing their re-development and highlight the potentially significant role of local authorities in land assembly. The number of brownfield sites per local authority ranges from nine (Chelmsford and Southend-on-Sea) to 1,358 (Liverpool), with a mean of 98 (Figure 1). The total area of brownfield land per local authority has a range of 5.47 ha (Southend-on-Sea) to 858.03 ha (Medway), with a mean of 163.56 ha. The brownfield land as a percentage of total urban area ranged from <0.1 per cent in Chelmsford to 8.3 per cent in Dartford.

Although Liverpool has, by far, the largest number of brownfield sites, it does not have the largest amount of brownfield land. In some instances, local authorities have a larger than average total area of brownfield land which is made up of one or two large sites. For example, Medway, which has the highest total brownfield area, has two sites (544 ha and 146 ha, respectively) that accounts for the majority of brownfield area. This pattern can also be seen in other local authorities, such as Dartford, Stockton-on-Tees, Thanet and Weymouth and Portland. According to the NLUD data (HCA, 2009), most of these large sites were listed as former or existing manufacturing sites and related to the collapse of a single industry. In the majority of the population (40 out of 54), however, the average brownfield site is less than three hectares in size, highlighting that the majority of sites are small infill locations (Wedding and Crawford-Brown, 2007).

By MMO coastal typology cluster, the ‘coastal challenge’ and ‘coastal fringe’ clusters accounted for the majority of the coastal urban LSOAs, as well as majority of the coastal urban local authorities overall (Table 1). Both clusters had a reliance on industry and manufacturing-related employment sectors linked to former port activities (MMO, 2011) and have been particularly impacted by deindustrialisation which has created a legacy of brownfield sites (Tallon, 2010). Additionally, these areas have also been subject to de-urbanisation, which has also left behind derelict, vacant and under-utilised sites (Tallon, 2010). The ‘coastal challenges’ cluster had the highest average number of brownfield sites per local authority (144.3). Even when the sites in Liverpool (1,358 sites) were removed, the average was still the highest cluster at an average 95.7 brownfield

sites per local authority. The ‘coastal challenge’ and ‘coastal fringe’ clusters had the highest total brownfield area per local authority with 185.25 and 188.38 hectares respectively, which was over double the average total brownfield area for the ‘coastal retreats’ and ‘cosmopolitan coast’ clusters. These data highlight the association between brownfield land and the ‘coastal challenge’ and ‘coastal fringe’ clusters.

Both the ‘coastal challenge’ and ‘coastal fringe’ clusters also had the highest average area per site (greater than three hectares), which might suggest that these sites relate to industrial port cities. Analysis of the land type according to MMO coastal typology sub-group reveals that the local authorities considered as ‘coastal challenge’ have the highest percentage of sites that are either vacant buildings or derelict buildings (43.3 per cent). Assuming that these land types are not as capable of being developed as the others, the ‘coastal challenge’ groups are at a disadvantage in terms of having brownfield sites that face more barriers to development.

Questionnaire Survey of Coastal Urban Local Authorities

The challenges facing local planning authorities in the regeneration of brownfield land in coastal settlements are now considered through the results of a questionnaire survey of Directors or Heads of Planning Services.

Priority to brownfield redevelopment: A total of 80 per cent of the participants agreed that brownfield development was a priority for their local authority (60 per cent strongly agreed; mean = 4.25, SD = 1.16). One respondent noted:

‘*Brownfield development remains a priority for the council. There have been additional issues with land ownership / costs etc but, on the whole, priority is still given to brownfield sites first*’.

This priority is unsurprising given the emphasis of central government policy and guidance to re-use urban land and thus reduce development pressure on greenfield sites. As one respondent pointed out: ‘*there is little option but to develop brownfield sites*’, because of the shortage of land in many coastal settlements constrained by water on one side and green belt on the other. Participants also agreed that their brownfield sites were strategically important to regeneration projects (85 per cent agreed; mean = 4.45, SD = 0.76), with over three-quarters (76.1 per cent) recognising that waterfront locations were potentially a key driver for such regeneration, because they typically have a higher value, greater potential and generate market interest from the private sector.

Nearly three-quarters of the respondents (70 per cent) agreed that private sector developers were willing to develop brownfield sites in their local authority area.

The majority of participants (55 per cent; mean = 3.75, SD = 0.97), however, neither agreed nor disagreed that the private sector was more willing to develop brownfield sites than they were ten years ago. The development of brownfield land represents a financial risk to developers because of the unknown costs of potential remediation. The stark commercial realities for the private sector were mentioned in many of the responses from planners, including that '*Developers will always want 15 – 20 per cent of gross development value as profit guaranteed otherwise they will walk away*'.

Barriers to brownfield development: The barriers constraining the redevelopment of brownfield land in coastal urban authorities appear to be a mix of general and more coastal-specific factors. The general barriers related to issues affecting economic viability of redevelopment, such as declining property values (mean = 3.14, SD = 0.91), delays and increased costs associated with development (mean = 3.14, SD = 0.73) and known contamination and environmental hazards (mean = 2.95, SD = 0.67). This point highlights the importance of public financial subsidy in filling the viability gap and encouraging developers to take on the inherent risk.

Barriers related specifically to the coastal location of brownfield land were less recognised and articulated. Only five per cent of respondents recognised issues related to climate change and flooding as a major concern in the regeneration of brownfield land (mean = 2.35, SD = 0.81). Climate change appears to be a factor that has not yet sufficiently permeated assessments of the economics of the development of brownfield land in coastal urban areas, despite these locations being likely to be the first to experience its effects. Ecological concerns related to international and nationally sensitive areas and species were mentioned in 27 per cent of the responses. Two of the responses also mentioned issues related to the decline of seaside tourism and the oversupply of out-dated tourist facilities, such as hotels. For example, one participant listed '*addressing declining tourism [and] oversupply of sea front hotels*' as a unique challenge within coastal local authorities. Some respondents noted that coastal settlements did not necessarily have the profile as problem areas. For example, one respondent noted:

'*Because we have neighbours who fall into the most deprived areas in Britain, our coastal issues tend to be overlooked as we have not allowed our coastal towns to deteriorate to this extent. Much of our recent funding has been through lottery, play provider funds etc, which are usually project specific and do not tackle the overall causes of degeneration*'.

Another participant pointed out that '*poverty/deprivation is often only one street back from the seaside*' in coastal cities and towns. There were also some other coastal specific challenges mentioned by the participants. '*Effectively integrating the waterfront*' into the rest of the urban area was highlighted by one participant. Marshall (2001) stated that the former industrial sites that once dominated urban waterfronts have now become blockades between the inner city and the

waterfront. The challenge that faces modern planners is how to best utilise these sites and successfully integrate them back into the fabric of the contemporary city.

When the participants' responses regarding barriers to development were analysed according to MMO typology cluster, the barriers were typically rated as being less significant to local authorities in the 'cosmopolitan coast' cluster (mean range from 1.80 to 3.00). In contrast, the mean range for the 'coastal challenges' cluster was 2.25 to 3.75. This difference in mean is an indication that the stronger economies in the 'cosmopolitan coast' areas are able to overcome the potential barriers to brownfield development better than the 'coastal challenges' economies.

Public sector support for brownfield development: Local authorities are encouraged in the National Planning Policy Framework (DCLG, 2012: para.111) to set up locally appropriate targets for the use of brownfield land. Over half (55 per cent) of the participants agreed that setting targets was an appropriate method for promoting brownfield development (mean = 3.30, SD = 0.98). However, 45 per cent neither agreed nor disagreed (mean = 3.25, SD = 0.91) as to whether their local authority was considering using targets. Some respondents pointed to the limitations of targets:

'*Brownfield targets are only suitable where it is known that brownfield land can be delivered and is economically viable to regenerate*'

'*Setting brownfield targets will not encourage such sites to be developed before greenfield sites. It will simply push development to other boroughs and leave the Council open to challenge in terms of maintaining a five year land supply of deliverable sites*'.

The role of the public sector in encouraging the redevelopment of brownfield sites more directly was limited because, as one planner stated: '*There is no funding to employ dedicated staff to advise on regeneration and build up a local knowledge / database of local issues and problems. Local authorities have very little capital to contribute'.* Participants disagreed that their local authority had the financial resources to encourage brownfield development (66 per cent, mean = 2.24, SD = 0.89). The majority of participants disagreed (50 per cent, mean = 2.90, SD = 1.29) that brownfields could be developed without financial intervention.

When the same statement was analysed according to MMO coastal typology, local authorities in the 'cosmopolitan coast' cluster, on average, somewhat agreed (n = 5, mean = 4.00) that brownfields can be developed without financial intervention. In contrast, the 'coastal challenge' cluster somewhat disagreed (n = 7, mean = 2.14) with that statement. This point highlights the different economies that exist in the two clusters. 'Cosmopolitan coast' cities, such as Bristol, Brighton

and Hove and Portsmouth, have 'highly skilled populations and dynamic economies' as opposed to the 'coastal challenge' authorities, such as Halton and Gosport, whose economy is characterised by high levels of worklessness and poor skill levels (MMO, 2011). There is a clear geography to the development potential of brownfield land in coastal urban regeneration.

Participants were asked to describe any specific initiatives that their local authority had taken to promote the regeneration of brownfield land. Sixty per cent of those who responded to the question mentioned the use of some form of public-private partnership, such as joint ventures and enterprise zones. Public-private partnerships have become increasingly beneficial because they allow stakeholders to collaborate and unite resources and expertise, as well as share the potential risks and returns involved with regeneration projects and brownfield sites (Roberts and Sykes, 2001; Geddes, 1997).

Forty per cent of the responses mentioned some form of local authority contribution, such as council-owned land, grant monies or building of infrastructure to increase the viability of development for the private sector. For example, one response stated *'[Local authority] has recently built and opened our second Harbour crossing ... This has opened up the regeneration sites either side of the Harbour entrance and these now await development*'. This comment suggests that public sector funding for major infrastructure projects, especially related to transport and access, is necessary to overcome some of the barriers associated with making brownfield sites and/or regeneration areas viable. Another respondent noted: '*It always come down to having a financially viable project and the public sector bearing the risk e.g. by contributing capital/grant money*'. In some cases, however, the limitations of local public sector contributions without central government support were recognised by the planners:

'*Lack of funding has resulted in a review of Council land assets and potential sale to the open market, but it is not clear whether off-loading will result in development coming forward as anticipated, without Government funding to assist land assembly*'.

According to the respondents, recent changes in government funding and agency structures as a response to the recession have had a detrimental impact on brownfield development on the coast. For example, English Partnerships, who were responsible for the national brownfield strategy, was combined with the Housing Corporation to create HCA in 2008. In 2010, the Coalition Government abolished the Regional Development Agencies (RDAs). RDAs were responsible for enhancing and promoting economic development and regeneration (Cullingworth and Nadin, 2010). Additionally, some major European grant programmes, such as EU Objective 1 funding, have ceased. The negative impacts of these changes to brownfield development, such as stalled developments, lack of funding and programmes being cut, were mentioned in 53

per cent of the responses. The overall feeling appears to be that these changes have created an additional barrier to brownfield development. For example, one participant stated that the changes to government funding and agency structure have '*provided further hurdles and new pressures which have resulted in delays*'.

There is also a concern that these 'further hurdles' may result in additional pressures on greenfield sites. It was felt that the difficulties of brownfield development will only increase pressures on local authorities to release greenfield sites in order to meet housing and development targets. One participant stated that '*as a result [of changes to government funding and agencies], the Council has to meet its housing shortfall on greenfield sites*'. This comment demonstrates the knock-on effects that local authorities may encounter as a result of cuts to funding and loss of support from agencies like English Partnerships and RDAs. Given that major developers prefer greenfield sites over brownfield sites (Tiesdell and Adams, 2004), it is understandable that there is a concern about the effects that reductions in government funding will have on the redevelopment of brownfield sites as opposed to directing development to green field sites.

DISCUSSION AND CONCLUSIONS

By MMO typology, the majority of brownfield land in English coastal urban local authorities is located in either the 'coastal challenges' or 'coastal fringe' clusters. These clusters are characterised by economies whose roots were in the manufacturing and other traditional port activities (MMO, 2011). Deindustrialisation and the changing economic base in England has severely impacted these sectors and, consequently, has left the areas which once relied on the manufacturing industry and traditional port activities with heightened levels of deprivation and in need of regeneration (Roberts and Sykes, 2000). A further impact of deindustrialisation and the shift in employment sectors is the legacy of vacant, derelict sites that have been left behind in the local authorities classified as forming part of the 'coastal challenges' and 'coastal fringe' clusters.

Data from the NLUD suggests that just over half (62.2 per cent) of the supply of brownfield land in coastal urban areas is in a developable state or where development could progress with little or no treatment to the land or buildings. A high proportion (37.8 per cent) is not in a state for immediate regeneration and where additional barriers might exist. Apart from a small number of large sites in some coastal urban settlements (such as Medway, Dartford, Stockton-on-Tees, Thanet and Weymouth and Portland), the majority of brownfield land in coastal urban areas was in the form of infill sites of less than three hectares. Over three-quarters of the land were in either private (53.6 per cent) or unknown ownership (25.8 per cent). The immediate challenges of redeveloping brownfield land in coastal urban areas are therefore in terms of the one-third of brownfield land requiring some sort of treatment before regeneration and the problems of land

assembly from the small size of plots with a predominantly private and unknown ownership of small and fragmented sites.

The development of brownfield sites was a priority for local planners. Waterfront sites offered strategically important locations to local regeneration initiatives and, even in the current economic climate, the private sector was willing to develop brownfield sites. The main barriers appear to be declining property values, delays and increased costs associated with development as the most significant barriers. These barriers have a considerable effect on private sector profitability and, hence, the deliverability of brownfield sites. Perhaps rather surprisingly, there was little specific recognition of flooding, coastal protection and sea level rise as potential barriers to the redevelopment of brownfield sites on the coast.

Participants, especially in 'coastal challenge' areas, believed strongly that government funding and/or intervention was necessary to overcome the economic barriers preventing development. Since coastal urban local authorities stated that they do not have the financial resources to encourage brownfield development, they were strong proponents of the support and delivery of funding from central government agencies. However, since these organisations have been abolished and redirected, the participants have found the lack of funding as an additional barrier to brownfield development. Only local authorities in 'coastal cosmopolitan' areas expressed more confidence in the private sector to deliver without such support. Nevertheless, the recession and lack of funding is potentially driving private developers towards greenfield sites, which are deliverable, where profits can be maximised, and risk mitigated. The potential dangers of increasing greenfield development highlights the critical role that planners will have as urban managers who aim to promote sustainable development through brownfield regeneration.

The potential of brownfield site redevelopment to inject some vigour and life into fading coastal settlements is hampered and undermined by adverse market conditions, changes in policy, and reductions to funding. These factors have meant that the viability and deliverability of redevelopment of brownfield land in coastal urban local authorities is now posing major challenges. A more focused and determined approach is required and two recent legislative changes associated with the Coalition government's localism and growth agenda might help to facilitate the regeneration of brownfield sites through imaginative ways of supporting initiatives. First, the *Growth and Infrastructure Act* (April, 2013) has relaxed rules about the disposal of land held by local authorities for planning purposes at maximum land sale values. Whereas previously, each land disposal at less than the best value required approval by the Secretary of State, now consents can be granted for whole classes of disposals, which will make it easier for local authorities to dispose of surplus land. Second, central government controls have not encouraged local authorities to invest in infrastructure funded from sources outside the council tax as any additional business rates created from new development were clawed back by central government. The *Local*

Government Finance Act (November, 2012), to be implemented from the beginning of the financial year 2013-14, incentivises local government to support capital expenditure by retaining a proportion of the increase in their business rates from such investment (Wilcox, *et al.*, 2012; Wilcox, 2012). The combination of these legislative reforms might act to both facilitate the release of brownfield land at appropriate values and incentivise local capital expenditure to stimulate development on such land. The effect of these more imaginative ways to support brownfield regeneration merits further research and monitoring, especially in coastal urban areas.

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Figure 1. Characteristics of brownfield sites in coastal urban local authorities

SOURCE: Homes and Communities Agency (HCA) 2009 National Land Use Database (NLUD) of previously developed land

Footnotes:
[1] Primary MMO coastal typology sub-group is based on the sub-group that has the highest percentage of LSOAs per local authority (Source: Marine Management Organisation (MMO) Coastal Typologies (MMO, 2011))
[2] Adur District Council and Worthing Borough Council have a joint senior management team
[3] Christchurch Borough Council has a joint senior management team with East Dorset District Council
[4] Havant Borough Council has a joint senior management team with East Hampshire District Council
[5] Weymouth and Portland Borough Council has a joint senior management team with West Dorset District Council

Table 1. Coastal settlement typologies formulated by Marine Management Organisation

Typology category	Overview	Above the coastal average	Below the coastal average
A1 Coastal retreats: Silver seaside	Retirement areas primarily located in smaller, less developed resorts	• People of pensionable age • Part-time employment • Home working • Self-employment • People employed in tourism	• People receiving Jobseekers Allowance • People receiving Incapacity benefits • ID 2010 Crime domain
A2 Coastal retreats: working countryside	Predominantly rural areas, sparsely populated or in smaller settlements with people employed in lower skilled occupations	• Travel time to key amenities • People working from home • Second homes	• Population density • People qualified to degree level • People living in flats • Jobseekers Allowance claimants • Attendance Allowance claimants
A3 Coastal retreats: rural chic	Predominantly rural areas, sparsely populated or in smaller settlements with a well qualified population	• Travel time to key amenities • People qualified to degree level • Dwellings with 8 or more rooms • Percentage of dwellings in Council Tax band E to I • Jobs growth • Self-employment	• Population density • Households with no car or van • ID 2010 crime domain • Child and pensioner poverty
B1 Coastal challenges: structural shifters	Towns and cities which have lost their primary markets and are facing the challenge to find new ones. The group includes a range of single industry coastal towns, including seaside resorts, mining areas, industrial heartlands and former agricultural areas.	• People working in manufacturing • Jobseekers Allowance claimants • Incapacity Benefit claimants • Disability Living Allowance claimants • All people with a limiting long-term illness aged 0-64	• People qualified to degree level • Overall employmentb rate • Jobs growth • People living in flats
B2 Coastal challenges: new towns and ports	Challenges relating to poor skills and high levels of worklessness, but counterbalanced by relatively strong economy and often located close to areas of economic growth.	• Jobs growth • Child and pensioner poverty • Jobseekers Allowance claimants • Incapacity Benefit claimants	• People qualified to degree level
B3 Coastal challenges: striving communities	High levels of deprivation across all indicators, and avery high proportion of people living in social rented accommodation.	• Social housing • Jobseekers Allowance claimants • Incapacity Benefit claimants • Disability Living Allowance claimants • Child and pensioner poverty • People providing intensive unpaid care • People working in wholesale, retail and motor vehhicle repair	• People qualified to degree level • Overall employment rate • Jobs growth
C1 Cosmopolitan coast: reinventing resorts	Primarily tourist economies with high levels of deprivation, but diversifying	• Private rented housing • People working in tourism	• People living in houses • Owner occupied • Overall employment rate

	to attract a more highly skilled population.	• Jobseekers Allowance claimants • Incapacity Benefit claimants • People qualified to degree level • People moving in and out of the area • Full-time students aged 16-74 • Seasonal unemployment • Household vacancy rates • People travelling more than 40km to work • People living in flats • ID 2010 crime domain	• Part-time employees
C2 Cosmopolitan coast: coastal professionals	City and market town service centres with highly skilled populations and dynamic economies.	• People qualified to degree level • Full-time students aged 16-74 • People who have moved address in the last year • People travelling more than 40km to work • Private rented housing • ID 2010 crime domain • People living in flats	• People of pensionable age • Part-time employees • People living in houses
D1 Coastal fringe: prosperous suburbia	Affluent areas predominantly on the edge of towns and in satellite towns around larger coastal cities.	• People qualified to degree level • Overall employment rate • Owner-occupied households • Pupil attainment: average point score at GCSE • Dwellings with 8 rooms or more	• Jobseekers Allowance claimants (unemployment benefit) • People receiving workless benefits due to poor health • Child and pensioner poverty • Households with no car or van
D2 Coastal fringe: working hard	Towns characterised by high levels of employment typically in industrial sectors and a stable population.	• Overall employment rate • People working in manufacturing • Owner-occupied households	• People qualified to degree level • People who have moved address in the last year • Jobseekers Allowance claimants (unemployment benefit) • People receiving workless benefits due to poor health • Self-employed people • Social rented housing

SOURCE: MARINE MANAGEMENT ORGANISATION (2011a) *Coastal typologies: detailed method and outputs*, Roger Tym and Partners and Oxford Consultants for Social Inclusion, London.

Table 2. Breakdown of brownfield data by MMO typology cluster

	Coastal Retreats[1]	Coastal Challenges[2]	Cosmopolitan Coast[2]	Coastal Fringe
Number of coastal, urban local authorities	1	26	11	17
Average number of brownfield sites	52.0	144.3	71.7	40.4
Average total brownfield area (ha)	73.96	185.25	69.22	188.38
Average area per site (ha)	1.42	2.77	1.25	6.06
Land Type (%):				
PDL now vacant	13.5	40.9	18.0	20.4
PDL currently in use and allocated in local plan or with planning permission	82.7	15.7	49.7	62.9
Vacant buildings	3.8	19.7	25.5	11.9
Derelict land and buildings	0.0	23.6	6.8	4.8
Ownership (%):				
Local authority	23.1	17.0	7.7	5.1
Other public	11.5	6.7	4.6	7.3
Private	53.8	47.3	64.4	76.0
Don't know	11.5	29.0	23.3	11.6

SOURCE: Homes and Communities Agency (HCA) 2009 National Land Use Database (NLUD) of previously developed land

Footnotes:
[1] Canterbury City Council was the only local authority classified in the 'Coastal Retreat' category
[2] Eastbourne Borough Council was classified into both the 'coastal challenge' and 'cosmopolitan Coast' sub-groups as it had 33.9 per cent of its LSOAs in each group