

Review Article

A Reflection Upon the Design and Management of Urban Forestry in The UK New Towns, Specifically Telford, and the Potential Role Urban Forestry Can Play in Future Urban Design

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Abstract

Although the development of New Towns is not a phenomenon unique to the UK, they have arguably had a long-lasting influence upon some aspects of the thinking behind urban design and urban planning for a hundred years or more. This paper will briefly consider the rationale behind the new Town Movement, where multi-functional public open space was considered to be an essential part of the recipe for social, environmental and economic success. The paper reflects upon this view by focusing upon one specific new town - Telford - a 78km² town built largely upon an old, disused coalfield, but which has subsequently emerged as one of the most successful of the UK's New Towns. The aims and objectives behind the design and early management of the town will be considered, particularly the urban forest and the open green-space network, and how this has contributed to the success of the town, which will be celebrating its 50 years anniversary in 2018.

The paper concludes by considering how the resulting "urban forest and green-space network" has evolved, matured and taken on new roles in the twenty-six years since the New Town was officially wound up and handed over to a Local Authority. Further, it will illustrate how the unique design combination of historical natural regeneration, new urban forestry and modern landscape design has resulted in a rich, multi-functional and complex post-industrial landscape that has not only been one of the key contributors to the success of the town, but which has great relevance for new settlement planning and urban expansion across Europe, and why Telford was described as one of Europe's "rising stars".

Keywords: Green-Space Network; New Town Movement; Telford; Telford and Wrekin Council; Urban Forestry

Introduction

The development of New Towns is not a phenomenon unique to the United Kingdom. Such towns have been designed and built in innumerable countries throughout the world, although often for quite different reasons. Usually however, they have been promoted to accommodate the growth problems of major cities, and that was certainly the primary purpose of the UK's Third Generation New Towns. New settlements and new ideas of habitation have long been a feature of the British landscape. Most of them have been a product of one the major periods of expansion - the early medieval period after the Norman invasion for example, or the late 18th

century Industrial Revolution new settlements, or those of the 20th century Garden City/New Town Movement. The designing and building of new settlements is now back on the political agenda in the UK, in an attempt to deal with the significant increase in the country's population. Between 1970 and 2005, a period of 35 years, the population of the UK grew by approximately 5 million people. Between 2005 and 2016 - some 11 years - the population also grew by approximately the same - 5 million people. Thus, the UK Government announced in January 2017 that it would be funding 3 new garden Towns and 14 new Garden Villages, which would provide over 200,000 new homes in quality environments [1]. It is perhaps timely therefore to engage in some reflective research into the last of the UK New Towns - the 3rd Generation New Towns - particularly the quality of the environment they created, their

public open space networks and the urban forestry that physically articulated such networks. Thus, this paper will consider the rationale behind designing and building such settlements and will specifically review one of these New Towns - Telford - which will be celebrating the 50th anniversary of its inauguration in 2018.

New Settlements

Although the rationale behind the creation of such new settlements in the UK varied, they usually had three things in common:

- First, they were rooted in some sort of central planning agency, which provided land, building opportunities and possibly some services;
- Secondly, they each displayed a regularity of design more disciplined than that found in settlements that were the product of years of piecemeal growth and arbitrary development, and
- Thirdly, they were in the business of both attracting and retaining people, business and employment.

It could be argued therefore that to succeed, such settlements had to tread the delicate path between convention and pragmatism on the one hand and idealism and vision on the other. Not an easy task, and perhaps one reason why British people have often been deemed to be “anti-urban” in the past is because that balance between convention and vision has rarely been achieved.

The various opinions that exist with regard to the existence of new towns in the UK has been well documented [2-7], and it would be fair to say that in the UK, as indeed in many other countries, there is a polarisation of views on the subject. On one side of the argument are those who comprise what might be termed the “new town movement”, who support the design and construction of new settlements, and on the other side are those who see New Towns as essentially “anti-urban” in concept, containing more “ideology than ideas” [8], lacking in individual design character and hence all looking much the same. Current thinking tends to agree with **Grindrod** however, when he states that New Towns “sit alongside the creation of the welfare state, the NHS and the post-war revolution in education as monuments to a nation’s desire to move on, not just from the destruction of the war years, but from the inequalities and squalor inherited from the Industrial Revolution” [9]. It is important therefore to understand a little of the background thinking behind the “new town movement,” and what it was trying to achieve, particularly in terms of whether there are any lessons that may be applied to solving some of our present day urban growth problems.

The Rationale Behind Designing and Building New Settlements

The new town concept expanded in the UK as a response to the industrialisation and very rapid expansion that took place in the 19th century. As an example, the City of Birmingham (the

city from which Telford would eventually take the overspill) grew from a population of 71,000 in 1801 to 233,000 in 1851, and by 1901 had ballooned to 761,000, over a ten-fold increase in just a hundred years. All the major industrial towns and cities of the UK experienced a period of similar expansion at this time, leading inevitably to serious overcrowding, insanitary conditions, disease, poverty and crime.

It also led to a certain “anti-urban” feeling, certainly amongst the men of letters. William Cowper’s maxim is probably the most often quoted - “God made the country, and man made the town” [10], but there are very many other examples, Dicken’s novels perhaps being some of the most well known. The poet Wordsworth was also in the vanguard of this “nature verses the city” theme and, although somewhat atypically, he claimed that “earth has not anything to show more fair” than a fine London morning [11], poems such as “The Prelude [Book Thirteenth]” are more typical where he claimed that love cannot exist “among the close and overcrowded haunts of cities, where the human heart is sick” [12].

These were of course works of fiction, but whether they were true or not, it was physical health - or rather the lack of it - that became a matter of some concern for all shades of political opinion of the time. In the 1840’s, William Farr, the Registrar general, estimated that the average life expectancy in England and Wales was 41 years. As with all averages, they mask extremes. In London for example, the average life expectancy was 37 years, in Liverpool 26 and in Manchester 24 [13]. Such figures stimulated Farr into making what have must have been one of the first attempts at a cost / benefit analysis when, in the 1870’s, he estimated that if the whole of England was brought up to the average life expectancy (by then standing at 49 years), the economic value of the population would be increased by over £1.0 billion (approximately 1.6 billion euro). Serious money, particularly in those days.

Many ideological urban reformers saw new settlements as the solution to these problems, and the activities of men such as Owen at New Lanark, Salt at Saltaire in Yorkshire, Lever at Port Sunlight and Cadbury at Bourneville, to name but a few, are well known. Although these early new settlements were wedded to the idea of producing a quality environment for their inhabitants, they did not seem to have a long-lasting influence on urban design thinking in the UK. There were several reasons for this, but the prime reason was that it was hard to convince the decision-makers - the politicians, the industrialists, the investors - to accept the financial risk of something new. According to Ashworth [13], the major ideological obstacle to any kind of measure for urban improvement was the zeal for economy in public administration. He quotes a late 19th century pamphlet called “The Face of the Poor or the Crowding of London’s Labourers” as saying: “It seems but idle mockery to talk about pure air and sound lungs. But try to think out a plan, and you are met with the hard, impenetrable and unclimbable wall called WILL IT PAY?” Some things never change it would seem.

This economic theme was taken up by the man who has been called the father of the New Town Movement, Ebenezer Howard, in his book “Tomorrow: A Peaceful Path to Real Reform”, published in 1898 [14]. This was revised and re-published in 1902 as “Garden Cities of Tomorrow”, after Howard attended the first conference on urban futures which was held in Bourneville in 1901. It is always assumed that Howard’s book was about the development of utopias, or architecture, or sanitary reform, but it wasn’t. It did of course promote the merits of de-centralised “social cities”, as he believed that existing cities could no longer meet people’s social and environmental aspirations. However, the book was mainly about urban economics, estate management and theories on urban growth, and also how new settlement thinking might benefit the revitalisation of existing, run-down urban areas. Unlike the ideas of the 19th century urban reformers, Howard’s ideas were to have a lasting influence on urban design thinking in the UK, and he was to play a central role in establishing the First Generation New Towns of Letchworth and Welwyn Garden City.

The primary legislation that set up the 2nd and 3rd generation new towns was the New Towns Act of 1946, brought in by the new post World War 2 Labour Government of that year. This Act caused a flurry of development activity, with 15 new towns being designated between 1946 - 1955 (the 2nd generation), and a further 17 being designated between 1961-1970 (the 3rd generation). The big difference between these towns and Howard’s ideal town was that these towns were destined to be considerably larger than the Garden Cities and, partially as a result of this, were under the direct planning and financial control of the national government.

The 3rd Generation New Towns

The general aims behind these 3rd Generation New Towns were simple and straight-forward. First, they were to provide development relief for the large, congested urban areas within the UK - London, Birmingham, Merseyside, Glasgow, etc., and secondly, they were to be designed as self-contained and balanced communities for habitation, for employment and for recreation. They were not intended to be commuter towns, and although the term “self-contained and balanced” has been open to a wide range of interpretation, by and large these towns have been successful in achieving their aims. They have turned out to be more than just a means of coping with urban overspill; they have become integrated developments, effective growth points and good at stimulating local economies; and they have produced designed environments of a high quality - particularly public green-space design.

Holley [15] believed that these towns were successful for three reasons.:

- First, they had a successful formula that produced integrated towns with good communications, high levels of amenities, and a higher than average physical environment - particularly

the green-space and the urban forest;

- Secondly, they had a social commitment, in that people’s needs - both those of the indigenous population and those of the people who were yet to move to the new town - were as important, perhaps more important than any other factor. Public green-space and urban forestry comes in here again, and
- Thirdly, they had a design commitment, an unshakeable belief in the fact that a good physical environment was good for people, and good for business. Public green-space / urban forestry is of course central to that as well.

In spite of Holley’s views, the 3rd generation New Towns did not produce much in the way of architectural merit, but they did produce multi-functional green networks of a very high calibre, and high quality, innovative green space design. There is also much more variation between these towns than is generally recognised. Although all the towns were in a hurry to make their mark, and therefore tended to employ similar techniques to get the green-space and the urban forest established, significant variety exists. This was influenced by their regional location, the pattern of settlement that existed prior to the development of the new town, the qualities of the existing landscapes, and of course the foibles of the designers and the politicians who were involved in developing these towns. This also had an effect upon each town’s approach to its urban forestry.

Warrington for example - originally in Lancashire and now in Cheshire - had little existing woodland to extend and concentrated very much on using indigenous tree and shrub species, very akin to the Bosplantsoen techniques found in and around places like the Bijlmermeer in the Netherlands - a very ideological approach.

Milton Keynes on the other hand, a gridded town to the north of London, had a rigid policy of specific tree species in specific town zones as a means of imparting a measure of local identity. The town has red routes, blue routes and green routes, the latter being boulevards in the Central Zone, and are always lined with London Planes (*Platanus x hispanica*).

Telford, another 3rd generation New Town, was for the most part sited on a derelict coalfield, which had a few remnants of ancient semi-natural woodland, as well as some naturally-regenerated secondary woodland on old spoil tips. The policy here was to retain much of this legacy and expand the wooded areas using a mixture of indigenous and exotic species in a more “laissez-faire” approach to the urban trees capes.

The development of some of the 3rd generation new town green-space and urban forestry networks provided some of the UK’s most significant large-scale designed landscapes of the 20th century. These green networks had a major role to play in

the success of these towns, and one town in particular - Telford - will be reviewed to illustrate and support this point of view. The reason for choosing Telford is two-fold. First, it is one of the most successful of the Third Generation New Towns, where convention and a certain vision have been melded into a new, dynamic and successful landscape. Secondly, the reasons for its success are very relevant when considering the urban, peri-urban and rural problems we are facing today. It was not a green-field site; indeed it was very much a brownfield site, and most of the area's industrial and employment base had disappeared, leaving behind a despoiled landscape with remnant pockets of existing population.

Telford New Town

Telford was designated in 1968 and is located some 48 km (30 miles) to the north-west of Birmingham. It will be celebrating its 50th Anniversary in 2018. It was originally designated as Dawley New Town in 1963, but the Designated Area was doubled in size in 1968 to cover an area of approximately 78 km² as was re-named Telford. The area covered by the enlarged New Town had an existing population of about 70,000 people, housed within a scatter of small towns, villages and hamlets set within the derelict remains of the East Shropshire Coalfield, dubbed the birth place of the Industrial Revolution in the UK. The area had been in decline since the last quarter of the 19th century, when the supply of raw materials ran out, and industry moved elsewhere [16].

The purpose of developing the New Town was threefold. First, it was to contain the expansion of Birmingham to within its existing boundaries; secondly, to create a growth-point and expand the population to 225,000, although this target was subsequently reduced by the government in 1976 to 150,000, and thirdly to reclaim the East Shropshire Coalfield which, although derelict, formed a distinctive landscape which comprised about 70% of the designated area of the New Town.

The landscape character of this area has always been distinctive, and the historical cues gleaned from the character of the existing landscape were to heavily influence the new landscape design concept for the town. The area was heavily afforested in ancient times but, unlike other parts of the English Midlands, had not been substantially cleared by the 14th century. The place was in fact the confluence of seven Royal hunting forests in the Middle Ages. These Royal Forests were not always totally covered by a dense canopy of trees, but comprised **(of)** large tracts of open ground, surrounded by areas of woodland and forest. This early spatial configuration of the local landscape was to have a marked influence upon the subsequent design rationale for the new green network of the Town.

Although there had been mining in the area since Roman times, it was not until the 18th century that it really gathered momentum. Due to the demands of the iron industry for timber

for charcoal, little remained of the ancient deciduous forests by the mid-16th century. To feed the voracious appetites of the furnaces of the Industrial Revolution, coppicing was introduced as the main woodland management system. Ironically it was the subsequent use of coke as a fuel from the early 18th century in the stead of charcoal, and the sudden decline of the coppice industry that, by default, provided some of the woodland that survives to this day. Subsequent natural regeneration on ground disturbed by the extractive industries had also contributed greatly to the area's distinctive wooded character. Some of the pit-mounds had regenerated naturally, but some limited attempts had been made in the 1920's and 1930's to reclaim some of the spoil heaps, often using Corsican Pine (*Pinus nigra var. laricio (maritima)*) [17].

The Basic Plan for Telford New Town attempted to draw together the existing pattern of communities with a programme of land reclamation, and the development of new housing areas, new employment areas, a new communication system and a structured public open space system, articulated by an extensive urban forestry programme. As with other new towns of this era, Telford had a strong political and financial commitment to providing an environment of high visual and ecological quality, believing that a quality environment was good for people and therefore good for business. Fundamental to the success of the town therefore was the design and implementation of what then was called a Landscape Structure Plan, first produced in 1971 and refreshed and updated every five years. This Plan had five main principles:

- The preservation of existing woodland and tree cover wherever possible particularly the remnant ancient semi-natural woodland of the Royal Hunting Forests, and the naturally-regenerated secondary woodland found on the older industrial pit mounds - if they were stable;
- The establishment of a hierarchy of public open space and parks, ranging from the central Town Park (180 ha), the hub of the entire system, 14 district and neighbourhood parks, ranging in size between 4 - 20 ha., and local open space and play areas, including some 120 "parklets" associated with small housing groups;
- The provision of a network of footpaths, cycleways and bridleways to link areas of housing, employment and recreation;
- The establishment of major belts of tree planting along road corridors to create green links throughout the emerging town;
- The planting of over 6 million trees to provide an urban forest that encompassed and dominated both existing and proposed areas of development' planting which earned the town the name "Telford - the Forest City".

The basic premise was to ensure that the new built form of the town remained subservient to the dominant topographical

and wooded character of the landscape, so that the town would eventually appear as a settlement in a landscape, rather than take on the more conventional, modern character of a settlement imposed on a landscape. The resulting tree-dominated landscape has been described as a “post-romantic” landscape [18], and it was used as one of the case studies in the EU’s Framework 5 “Neighbour Woods” urban forestry research project [19].

Telford New Town’s Urban Forest Strategy

Telford has a variety of urban **tree-scapes** types. These were all designed and managed for some 24 years by the New Town, but the local authority - then Wrekin District Council but now the Unitary Authority of Telford and Wrekin District Council - took over responsibility for the management of most the town’s urban forest in 1992. The exception was some 245 ha. of the hanging woodlands of the Ironbridge Gorge (which forms the southern boundary of the town), which were handed over to a charitable trust. Much of this woodland was under a Forestry Commission Woodland Grant Scheme and was one of the first of such schemes to be set up with amenity as the prime management aim.

Telford’s new urban **tree-scapes** were created by planting over 5 million whips and transplants (and some a bit bigger) to create over 1000 ha of new urban trees capes. These were planted usually at 1.0 metre centres (sometimes 1.2 m. centres). Some tree seeding was attempted, but this was a comparative failure. The Species List, covering the early plantations, pioneer/impact species, intermediate species, final dominant species and local intermediate species comprised over 138 different species and cultivars, perhaps justifying the “laisse-faire” comment on the tree selection policy [20].

On the initial handover of Telford’s urban **tree-scapes** to the Local Authority, there was some doubt about how economically such a broad range of species could be managed. The urban forestry managers, who were normally used to stands of 3-4 species to contend with in a new plantation, found the prospect of dealing with 10-12 species rather daunting. The reason for initially deploying so many species was that:

- It made the trees capes locally different, which was important when the new buildings, particularly the new housing areas, tended to look much the same;
- It helped to enhance bio-diversity and resilience;
- It makes it more visually stimulating for the general public, and
- Although more random planting was practised in early plantation, this quickly changed to group planting and group selection to aid future management.

The management objectives of the New Town Urban Trees capes complied with the 3 Basic Stages in the development of urban

trees capes:

- Stage 1: Short-Term Impact (say 0-15 years)
- Stage 2: Mid-Term Strategy (say 10-25 years) and
- Stage 3: Long-Term Strategy (say 25-75 plus years?)

The New Town was only involved with Stages 1 and part of Stage 2, and the time-scales quoted could only be generalisations of course- so much depended on site conditions, species mixtures, uses, etc. Urban tree planting on this scale was not common in the UK at this time, and much was learned from the experience, specifically:

- Planting pioneer/ fast-growing species were very important in getting early establishment and quick “political hits”;
- Urban trees capes can enhance the quality of health and well-being of life in towns to a very high degree by providing a setting and a context for urban activity. People generally like urban **tree-scapes**, and they are good for wildlife too;
- Don’t try to be too silviculturally clever - you can only take so many shortcuts. The establishment of healthy and robust trees capes is the objective. It is far better to have the choice of thinning or clearing healthy, vigorous tree growth than trying to re-establish poor, weak stands;
- Design within the urban woodland is also important: (a)The logical alignment /direction of footpaths, (b) Consider the sequence of spaces (c) Attention to thinning to provide glades and areas of wider-spaced trees (engineering with light).
- Help people to understand their **tree-scapes** by interpretation / education;
- Plant as wide a variety of trees capes as you can, utilising a wide variety of management techniques;
- A lack of space is not always a valid reason for not planting trees - narrow belts can be very effective;
- Do not forget potential income from timber and thinnings. Modern small-scale forestry equipment made life easier for urban forestry managers, and
- Plan in the long-term. Short-term commitment, be it political, financial or managerial, will not provide the quality of urban **tree-scapes** that we need or the benefits that accrue from such planting.

A year after taking over responsibility for the management Telford’s urban forest in 1992, Wrekin Council produce a Woodland Management Strategy. This strategy discussed a range of possible management approaches to the inherited urban **tree-scapes**, and a consensus seemed to emerge that management along “community woodland” lines was the most appropriate, if the original concepts

of the Telford Urban Forest were to be realised. The revised management approaches included the objectives:

- Landscape / Visual / Commercial
- Habitat / Ecological
- Recreation
- Environmental
- Educational
- Cultural
- Timber

As the Council was dealing with the later part of Stage 2 and Stage 3 of the development of the urban forest, these tended to be more complex management objectives than those originally practiced by the New Town.

Has the Telford Approach to Urban Trees Capes Created a Viable and Successful Urban Forest?

The open space provision for Telford was planned to be approximately 40% of the area covered by the town [21]. This was based upon a standard of 4ha of open space per 1000 head of population, comprising 2.4 ha of public open space and 1.6 ha of sports playing fields. Although generous perhaps by present day standards, this provision had been achieved by 1991, when the New Town was deemed to have reached the end of its period of induced growth, was wound up and the day to day running of the town handed over to the Wrekin District Council, the local authority. How successful has the town been, and what role has the green-space / urban forestry network played in this success?

Telford has been economically and environmentally successful since being handed over to the Local Authority. The UK Government had invested over £1 billion (€1.6 billion) in the town, a figure match funded by a similar amount of private sector investment. The town has attracted over 200 firms and businesses from overseas and, most significantly in surveys of these businesses, the quality of the designed Green Network was often cited as an important factor in choosing to re-locate there and for staying there [22]. The town is thus recognised as one of the key Regional Growth Points, and its original population target of 150,000 people has been exceeded, an increase of over 75% over a 25-year period. Most importantly, the urban green-space network has proved to be much loved and valued by the people of Telford, when they were consulted in 1992 as part of the preliminary work for the Council's Woodland Management Strategy [23]. The research indicated that the green network played a number of multi-functional roles. It provided a functional, essentially wooded environment managed

on sound community forestry principles; it provided an experiential backdrop for many facets of people's lives; it made the town work physically; it helped to make it work economically, and the quality of the environment provided opportunities and havens for wildlife not found in the surrounding countryside. Success indeed, and in April 1998, the Council was given more authority over its own affairs by being granted Unitary Authority status.

How well has this urban forestry network survived subsequent development pressures under the new management? An early legal requirement of the local authority was to draw up a Telford Local Plan to cover the period 1991 - 2001. It was standard practice for such plans to go to Public Enquiry, and it was interesting to note the comments contained in the report of the Planning Inspector (PINS/P3230/429/2). In supporting the general concept of the green network, paragraph 10.31 stated:

“The importance of the concept's environmental thread cannot be over emphasised: part of it comprises not just the retention of ecological and wildlife interests with its links via corridors, woods and open space to other areas, important as that is; but it also includes, significantly, the key to sustain the attractiveness of Telford itself, for residents, for visitors and investors, as part of Telford's own investment in its future”.

Further, paragraph 10.32 added:

“Within that thread lies the potential provision of one of the largest scale, visually beneficial and informal recreation assets of any town in the country”.

The concepts and aims of the Urban Forestry / Green Network were subsequently enshrined into the district-wide Wrekin Local Plan 1995 - 2006, which included a number of new roles and concepts for the Green Network that were not part of the original New Town thinking. These included sustainability, biodiversity, stewardship and equity, carrying capacity and replacement loss [24]. Other innovations have taken place as well. In 1998, the Council became the first local authority in the UK to be awarded Forest Stewardship Council approved certification for its urban woodland management programme. In the same year, it made over £10,000 (approx. €16,000) from the sale of timber from the management of the Green Network, which although not a huge sum, does prove that income from multi-functional Green Networks is not always of the “invisible earnings” kind.

In 2017, the Council has “refreshed” its Green Infrastructure Framework [25], and this is being used as one of the basic references for a new Northern Community Forest proposal that will stretch from the River Mersey in the west of the UK across to the River Humber in the east, a 25 year/ £500 million project.

Conclusion

Economic development in Telford is still taking place, utilising the Urban Forestry / Green Network as one of the key strengths for attracting inward investment. Development is permitted within the Green Network (Policy OL4), provided that first, there are exceptional circumstances; secondly it contributes to or is complementary to the aims of the Green Network, and thirdly that environmental and community benefits are an integral part of the proposal. Over 1500 new companies have now moved to Telford, over 200 of which are from overseas and employ almost 25% of the workforce. Telford is an active member of Euro towns, the network of medium-sized cities that promote co-operation between its members, and in March 1999, the business consultants KPMG published a major study [26] comparing the cost effectiveness of inward investment in 64 towns and cities in the G7 countries. Nearly 40% of the Japanese investment in the UK turned out to be in Telford, citing the quality of the green environment as being one of the key aspects of the decision to invest there. Within Europe, their research ranked Telford first above 14 other European cities, and the town was deemed to be a “rising star” for inward investment in Europe.

It can be said that all the research that has taken place into the melding of Telford’s unique combination of historic natural regeneration, new urban forestry and modern landscape design into the rich, multi-functional, complex, post-industrial Green Network that exists today, indicates that it has been one of the key contributors to the social, environmental and economic success of the town. The fact that it has been recognised, by KPMG and others, that the provision and protection through the planning system of a high-quality, urban forestry dominated, green-space network is an economic asset is very significant. So, the answer to the 19th century question posed at the beginning of this paper “WILL IT PAY?” is yes, it can, provided that the term economic encompasses the social and the environmental benefits of urban green space as well. And maybe Ebenezer Howard was right after all, when he claimed that it would be through the experience gained from the design, construction and management of new settlements that we would learn the skills and techniques of how to improve the more run-down parts of our existing towns and cities and influence successful urban design in the future.

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