

# LANDSCAPE ISSUES

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# RETRACTION FROM A REVOLUTIONARY RESET

Three years on from introducing architecture and planning into our portfolio to accompany landscape architecture, we now find ourselves in a renamed School of Creative Arts, the result of a recent university administrative 'reset' to fix structural financial problems. The new courses also included construction project management and interior architecture and design, so along with urban planning and landscape architecture the vision was to offer a coherent set of vocationally-focused programmes for planning and design education in the built environment.

The documentation for these courses emphasised these aims: (1) to encourage student engagement with relevant 21st century issues through understanding the natural and designed environment, the social community and cultural history, design and planning theory, the promotion of health and wellbeing; (2) that students develop a passion for the subject, becoming creative, innovative, technically-competent, experimental but ethically-informed; and (3) that students in their co-located studios find design solutions for both people and planet by collaborating within their cohort and across disciplines, recognising the value of the roles of sister environmental professions.

But the pandemic, recent UK economic downturns and promotional difficulties (despite the buoyancy of the job market) have restricted recruitment so what we now offer as a coherent portfolio is more evolution than revolution. The synergy of a combined portfolio was first recognised more than sixty years ago when the then Faculty of Environmental Design in the Cheltenham College of Art fostered the co-delivery of cognate courses. In the 1960s architecture, planning and landscape were closely integrated sharing a common first year, a unified education with a concern for a unified environment. In subsequent years, students were to act as 'consultants' in their fields to projects undertaken in others, to reinforce such an approach.

Our new prospectus represents perhaps a step on the road back to the holistic underpinning of this former pedagogy. Simply put, we will teach efficiently inter and intra the disciplines, urging students to be mindful of future employment and empathetic team working. Further, we will ensure students take an informed position in the current climate, biodiversity and energy debates, and be cognisant of trends in artificial intelligence, CAD and GIS and appreciate the professional work implications. All this through research and active practice.

Our course archive includes a copy of the 1966-67 art college prospectus from which I have extracted verbatim below the description and principles of the landscape architecture course then being offered. Can we still take something from it to apply to our 2023-24 course and for the years ahead?

*Robert Moore*

*From the Gloucestershire College of Art Prospectus for full-time courses 1966-7*

## **THE COURSE**

*The three full time courses, Architecture, Landscape Architecture and Town Planning are closely integrated and share a common first year. This first year is regarded as a probationary year for all students, at the end of which all work is carefully assessed. On the successful completion of the first year a student may, with the approval of his tutor, apply for transfer to either of the other two courses.*

*Minimum entry requirements for all three courses demand passes in five GCE subjects including two at Advanced level. (It should be noted that the following subjects are not acceptable: Engineering Drawing, Mechanical Drawing, Needlework, and Woodwork). All students are also required to possess 'O' level GCE passes in English Language and Mathematics and should be 17 years of age by 1 June of the year of entry.*

*Application forms and any further information relating to the Architecture, Landscape or Town Planning Courses may be obtained from the Secretary, School of Architecture and Landscape, Gloucestershire College of Art, Pittville, Cheltenham.*

## **STAGE I First Year (Probationary)**

*The first year of the course in all three disciplines is devoted to the fundamental consideration of design criteria. Firstly a study is made of the functional influences of use, structure and human perception on elemental design. This is followed by the consideration of time as an influence on design and involves the student in a concentrated study of social and economic history as well as the histories of architecture, planning, landscape and art. Finally a study is made of the given factors influencing design when matters relating to the land are given consideration. Here the student is involved in the study of geology, climate, and economic geography. In each of these three main sections of the first two terms, students are expected to produce graphic, written, oral and three dimensional testimonies of their study, all of which is taken into account in the final assessment of the first year's work.*

*In addition, students study the qualities and limitations of basic building materials and visits are made to workshops converting these materials into usable elements.*

*Students are also given instruction in various communication techniques including graphic, three dimensional, written and oral delivery. Theoretical and practical training in land surveying is also given to first year students.*

*In the final term of the first year all students are jointly engaged on an environmental survey of a selected area near Cheltenham, resulting in both individual and joint treatises respectively dealing with a specific aspect and general conclusions, all of which is intended to offer the first year student the opportunity of applying the principles of his first year environmental studies and bringing him to the threshold of design.*

*Students of architecture who have not gained 'A' level physics may be required to attend supplementary lectures in physics during the first year whilst landscape students will be required to attend supplementary lectures in botany.*

*With the exception of surveying and levelling, no formal sessional examinations are held at the end of the first year, the measure of a student's capability being entirely assessed on the basis of his testimonies submitted during the course of the year.*

*Each student is interviewed following an examination of his portfolio and successful students then pass to Stage II of the Course. The opportunity exists at this point in the course for students to deflect to an alternative discipline, subject to the approval of his tutor and the agreement of the Board of Studies.*

### **STAGE II (Years 2, 3 and 4)**

*In the second year each discipline undertakes a course of more specialised training specifically related to more detailed aspects of design criteria. Students of architecture embark on a concentrated study of the physical environment of man wherein they consider anthropometrics, light, heat and sound. Each section is preceded by a lecture series contributed to by various specialist lecturers including members from the Department of Ergonomics and Cybernetics, Loughborough College of Technology, also practical experiments under the direction of our own specialised staff at the laboratories of the North Gloucestershire Technical College, and finally specially directed design programmes intended to offer particular experience in the specific facets of environment under consideration. Students of landscape spend their second year in residence at the Pershore Institute of Horticulture (Principal: R. F. Martyr, BSc(Hort), with whom the School works in close co-operation) where again the emphasis is placed on the ecological principles of landscape design with special programmes being given to exercise the students on selected aspects of study. The opportunity is also given at Pershore for the students to develop a closer familiarity with the organic materials of Landscape.*

*Students of planning begin in their second year a series of planning studies which continues throughout the remainder of the course, the subjects increasing in complexity as the students' knowledge and ability increases. The main subject in the second year is the study of a small town. This is carried out within the context of a given set of regional factors, the work of survey and analysis leading to the formulation of proposals which are presented individually in reports, maps, diagrams and models.*

*Particular reference to the study of technology is applied from the third term of Stage II onwards, but it is the intention of the School that technology should not be considered in any way separate from design, the criteria forming the basic fundamentals for design development equally applying to technological considerations.*

*In the third year all three disciplines again combine at Cheltenham to carry out joint comprehensive schemes, the architects being engaged on specifically architectural problems but using the landscape and planning students as consultants, and similarly the landscape students being engaged on landscape problems but using the architects and planners as consultants and so on.*

*The joint scheme is one of redevelopment, consequently the planning students' work is in detail this year. The object here is to encourage conditions similar to those which are most likely to obtain in future practice.*

*At the end of the third year all students are required to pass a Comprehensive Design Examination and possess a complete and fully approved portfolio prior to entry into the final year of Stage II. During their fourth year students of architecture are*

*required to complete two major and two subsidiary testimonies of study as well as continuing advanced instruction in technical subjects.*

*Students of landscape spend their fourth year engaged on their thesis and research project.*

*Students of planning spend part of the fourth year engaged on their final testimonies of study, and tackle a regional scheme.*

### **STAGE III Practical and professional training**

*All three disciplines spend their fifth year gaining practical experience in their respective professions.*

*Students of architecture return for one year's full time study in their sixth year in which they produce their final major thesis as well as receiving instruction in specific subjects related to office practice including cost planning, quantities and office management. A further twelve months practical experience is required before final professional qualification. (See professional requirements).*

*Students of landscape are eligible to apply to sit for their final examination in professional practice as soon as they have completed their fifth year.*

*Students of planning are required to continue for one further year of practical experience before becoming eligible for associate membership of the Town Planning Institute.*

*College diplomas in architecture, landscape, and planning are awarded to students successfully completing their respective total full time courses.*



*Pittville landscape studios in the 1960s*

# WHAT ARE THE MAIN BARRIERS TO THE INCLUSIVITY OF PUBLIC URBAN GREEN SPACES IN THE UK?

Imogen Reeves

The benefits to the UK public of having access to green space has become increasingly apparent, particularly following the COVID-19 pandemic. This highlighted the value of public urban green space (PUGS) as a means of sustaining people's mental and physical health, as well as their relationships with one another. This article explores the main barriers to people being included in such spaces, which are important to understand because well-informed design creates spaces where everyone is given an equal opportunity to receive the full benefits of being there.

Green space is defined as "an area of grass, trees, or other vegetation set apart for recreational or aesthetic purposes in an otherwise urban environment" (OUP, 2022). Although this includes spaces such as gardens, local (equipped) areas for play (LAPs and LEAPs) and neighbourhood areas for play (NAPs), in this study it refers to public parks, of any scale, which may include, but are not limited to, play designation. Therefore, the term PUGS here refers to parks which are free for the public to use, situated within an urban, built-up, environment. Inclusivity is defined as "the practice or policy of providing equal access to opportunities and resources for people who might otherwise be excluded or marginalized" (ibid), and so the barriers to inclusivity

refer to factors which prevent people from having equal access thus excluding and marginalising them.

(This article does not exhaustively cover the barriers to inclusivity, as these are subjective matters and specific to individual users. An overview of numerous factors creating challenges is instead offered.)

The way that parks have developed in the UK through history has created some very complex barriers to inclusivity which still affect users today, whether physical, resulting from PUGS' historical spatial distribution, or social, arising from cultural perceptions of a space. The funding and maintenance of public parks, and the involvement of community groups within this, have also had an impact on inclusivity. This is because of the cycle of degradation and underuse established because of poorly funded maintenance. Often more imperceptible, there are a multitude of social and cultural factors which can cause exclusion because of behavioural differences or lack of relevant provision for people of different ages, cultures, and abilities. Pittville Park, Cheltenham, is used as a case study to evaluate the extent to which these factors form barriers to inclusivity, as it has a unique historical and physical context, as well as a combined public and community management structure.

## HISTORICAL DEVELOPMENT OF PARKS AS A BARRIER TO INCLUSIVITY

Thus it always is: that which belongs to the public, some private individual finds it convenient to take (Westminster Review, 1834, p.502).

Parks have been a feature of the UK landscape for centuries, initially created as private hunting grounds, and gradually progressing from rural elitist luxuries to free urban public recreational spaces. As socio-economic hierarchies have historically been tied to land ownership, the desire for social prestige frequently led to exploitation of others. Medieval peasants suffered food insecurity because of enclosure for deer parks; royalty gradually opened their private parks to the public, whilst carefully excluding the undesirable lower classes through paid entry or dress codes. Publicly funded city parks were created for the working classes, but gradually became so tightly regulated that those not meeting social standards were criminalised. This has created a culture of exclusion in UK PUGS because of a palimpsest of historical events and attitudes towards public parks, how they should be used, and by whom.

The barriers to the inclusivity of current PUGS have not therefore suddenly arisen as a modern phenomenon but are somewhat rooted in the complex past of British parks. This is because the social structures, urban planning policies and public campaigns which have led to the creation of private and public parks have affected the public's perception of such green space. Now, even though many historical parks no longer exist, or have been substantially altered, there are still cultural connotations, which have been embedded

throughout UK history, attached to public space. Current UK culture and socio-economic structures are largely founded on those of the past, and so still affect the modern park user's perception of whether they belong in a space, affecting inclusivity both directly and subconsciously.

### *The first private parks: the creation of an exclusive landscape*

The first recorded park in England was a 12th century wooded hunting park, at which time land ownership signified "... the greatest economic and political power as well as the highest social status" (Jones & Wills, 2005, p.21), partly because deer parks required a licence. This made park-creation a pursuit of only the socially elite or those in royal favour (Packham, 1986). By 1300 there were approximately 3,200 parks in England to the detriment of the peasantry, as techniques such as paling (Fig. 1) were employed to retain



*Fig 1 Paling in a medieval deer park allowed deer to leap into the park but not to get back out. Park makers could thus acquire stock belonging to common land, leaving less game for the peasantry. (Friends of Sutton Park Association, 2023).*

stock, leading to more deer in the parks than on common land (Jones & Wills, op cit). This meant that the upper-class controlled food supply and because “the peasantry hunter-gatherer activities ... embodied part of rural heritage and seasonal custom” (ibid, p.21), park formation simultaneously created dire food poverty and destroyed the sense of place.

Land enclosure later meant that grazing became chargeable and hunting criminalised – hanging and castration being inflicted on those poaching royal venison (Harding & Lambert, 1994). Such exclusivity in the UK landscape was exacerbated by the English Civil War, common land being stripped for resources which led the wealthy to acquire village-owned arable land to create private parklands. Unsurprisingly, enforcing tenancies and forcibly removing entire settlements, as Guy Willistrop did to the town of Wistrop

(Jones & Wills, op cit), led to violence and social unrest, private parks increasingly becoming political targets.

As the financial returns of hunting and the popularity of the sport declined, most deer parks reverted to private farmland or woodland, meaning few medieval deer parks are in use as PUGS today (Jones & Wills, op cit). However, Bishop Auckland Deer Park, County Durham, is an exception (Fig. 2), open to the public free of charge, making it economically accessible, and managed by regeneration initiative The Auckland Project (2023).

### ***The historical development of public parks***

From Charles I's admittance of selected keyholding guests in 1630 to his new carriage track and racecourse in Hyde Park, London (Lasdun, 1991) the royal parks were gradually opened to the public. Queen Anne later opened

St James' Park but excluded the lower classes with a proposed halfpenny entry fee (ibid). As London pollution increased, public demand for clean air was so great that by the mid-1800s Hyde Park was fully opened (ibid), followed by the creation of Victoria and Battersea royal parks in 1845 specifically for public use (Gardners Magazine, 1826). Publicly funded urban parks then became widespread, Birkenhead Park in Merseyside in 1847 becoming one of the world's first, funded through the sale of building lots (Tate, 2001), following three urban parks in Manchester in 1846, publicly funded through donations, commercial sponsorships, and one shilling subscriptions (MCAG, 1987).

The Manchester parks were created to provide clean air and space for physical exercise away from cramped workplaces and basement homes, yet only Phillips Park was accessible to those with little leisure time, within walking distance of 50,000 working homes (Fig. 3) (ibid). However, the steep in-

cline made it unsuitable for organised sport, meaning the upper-class activities of promenading and carriage-driving dominated. This was reflected in design, such as John Major's placing of sports courts, primarily used by those with no private green space, at the perimeter of Queen's Park, concealed from the view of promenading visitors (ibid). The working classes were further excluded by the closure of play equipment, band performances and kiosks on Sundays, their only day off, to preserve the Sabbath (ibid). Behavioural differences were also criminalised, park keepers being appointed as special constables to enforce fines for such nominal offences as picking flowers (ibid).

### ***Historical approaches to park planning and management***

As PUGS, created to benefit the working classes, quickly became dominated by the wealthy, green gentrification occurred as it became more desirable to live close to a park (Lasdun, op cit).



Fig 2 Children enjoying free public access to the medieval deer park at Bishop Auckland Castle (North East Family Fun, 2023)



Fig 3 Philips Park, Manchester (Wikimedia Creative Commons)



Fig 4 Regents Park c1875, painting by George Harvey (Creative Commons)

Local authorities were yet to regulate planning of public land, and so wealthy developers freely designed prestigious residential areas around parks, one such estate being Regent's Park. Originally of crown estate and promised as a public park, it was designed by John Nash in 1823 (The Royal Parks, 2022) to be thoroughly exclusive, with only three entrances, all on affluent residential streets (Fig.4). Even residents of the private estate paid annually for gate keys (Lasdun, op cit). Critics duly responded: "It is an absurdity to think of it as a place of recreation and use by the public. It is ... a place set apart for the use of the wealthy only" (Westminster Review, op cit, p.502). Such criticism led to a vast area being released for full public access in 1835, albeit only twice a week (Lasdun, op cit). Around the edge of the park are the houses and terraces that form part of the private estate, the views overlooking the park and the proximity being the cause for green gentrification. (Landscape Notes, 2023).

Meanwhile, Scottish landscape gardener JC Loudon (1783–1843) was

becoming instrumental in UK urban planning (Adams, 1991), campaigning in 1826 for improvements to public parks and establishment of new ones. After touring Europe in 1828, Loudon highlighted that German royal parks were much more inclusive, the public given full access as their taxes paid for park maintenance (Lasdun, op cit). They were also unpoliced, as German Prince Puckler-Muskau believed that demonstrating trust cultivated respect, which proved successful (Puckler, 1834). Loudon observed that because this was not reflected in UK PUGS management, the British public abused parks, never having been gifted autonomy and so unsure how to use it. (Lasdun, op cit). A cycle had thus been created – mistreatment leading to further restrictions which meant people were not permitted to act freely, further reducing their respect and sense of belonging.

### **Conclusion**

The class hierarchy within public landscapes, rooted in the historic UK feudal system has embedded a culture of



Fig 5 Attempts to make PUGS feel safe for the majority have often led to the introduction of hostile features such as this anti-homeless bench. The chair arms make it difficult to comfortably lie across the bench, so excluding rough sleepers from the park (CBC see website, 2023).

exclusivity in PUGS, especially those of historic importance, which were first private and then opened to the public. Although medieval deer parks do not exist as PUGS today, later royal parks do, and to some extent the cultural perceptions of parks being created as exclusive spaces for the wealthy are still present. The lack of planning policy which meant that wealthy developers were able to create private parks solely for the upper classes has also had implications for inclusivity today. This is because these parks still sit in affluent residential areas, making them physically inaccessible for other socio-economic groups who do not live within walking distance. It also makes them socially inaccessible where people do not perceive themselves as belonging in these spaces.

The creation of Victorian public parks for the working classes, which were then overtaken by the upper classes,

formed a park culture that was exclusive and derisive which may affect perceptions of inclusivity today. However, the general lack of trust in the public to respect PUGS has most significantly damaged people's sense of ownership, because centuries of tight regulations have limited people's freedom and enjoyment of public parks. When people have no sense of belonging, they feel excluded from a space and are less likely to use it. Therefore, despite many of the UK's historic parks no longer being present in the UK landscape, the social structures that formed many of the UK's oldest PUGS, and dictated how they were used, has had a damaging effect on the culture of UK PUGS today, and perceptions of their inclusivity.

### **HOW THE PHYSICAL ENVIRONMENT OF PUGS AFFECTS THEIR INCLUSIVITY**

Today, the quality and location of PUGS is often largely impacted by public funding and is therefore affected by political priorities and policies. The role of public landscapes has shifted over time, from being of great importance to commerce and public health, to being a recreational amenity that is often viewed as an additional benefit to a community and a contributor to sustainability, rather than an essential facility. Some of the earliest Victorian public parks were created to provide space for physical recreation and fresh air for the city's residents who were living and working in extremely poor conditions. Now, the change in general UK living standards, and the reduced political demand for a healthy, battle-ready population, has meant these spaces are seen as secondary to privatised indoor health facilities and so are of lower funding priority.

The lack of funding directed at PUGS reduces the quality of these spaces,

making them less socially attractive and leading to a cycle of decline and underuse. The journey to a PUGS can be a barrier too if poorly designed or maintained. Where circulation routes to a PUGS have suffered from lack of investment and become difficult, lengthy or costly, users will be excluded on the basis of their mobility, residential location or financial circumstances. This makes the planning policies surrounding PUGS crucial to their inclusivity, as people either will not or cannot use PUGS that have been neglected, as there are limited means of getting to them, and little to enjoy within them.

### ***The changing role of public space***

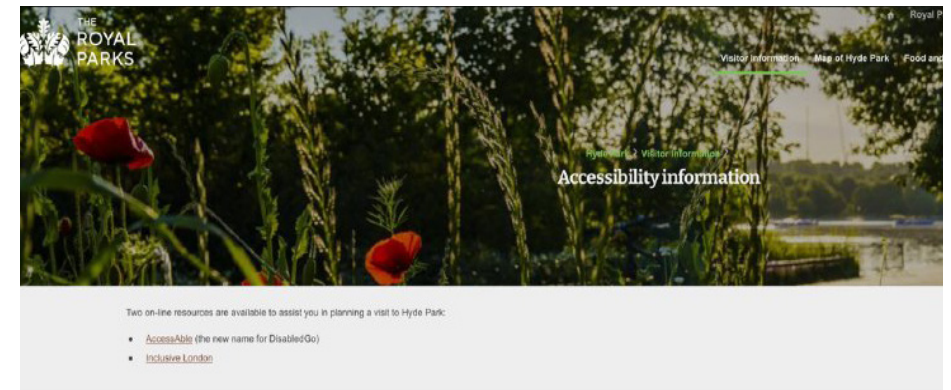
Traditionally, cities have been functional meeting places for communal activities (Fig. 5). The three main functions, from ancient settlements to the 1920s (in developed countries), were connection, commerce, and communication (Gehl & Gemzoe, 2001). As a result, public urban space was essential to the economy and society and so was well used, but predominantly functionally: city squares were market spaces, streets were travel routes and public space was used to escape cramped dwellings. As activities have become increasingly individualised, people do not rely on, or directly interact with, others to perform basic daily tasks. Danish architect Jan Gehl argues that today's use of public space is largely optional, rather than functional (Ward Thompson & Travlou, 2007). This means that when PUGS designs today are repeated across different contexts and fail to recognise the unique challenges of each community, they suffer underuse as people no longer have to overcome these barriers out of necessity (Holland, 2021).

On the other hand, because the public urban realm is now a recreational

space for most, its activities demand time and money, making PUGS an increasingly attractive free alternative, especially for those forced to be outside (for example, due to homelessness or unsafe domestic environments) (Ward Thompson & Travlou, op cit). However, this can contribute to negative perceptions of PUGS because of fear of antisocial behaviour, leading those with the option to be inside to use PUGS less frequently. Although this behaviour occurs to some extent by choice, it makes public parks exclusive to those who rely on them for recreation or shelter. This can be inverted when local authorities aim to regain a perceived sense of safety in PUGS by excluding undesirable groups and behaviours, and reattracting those who can invest in the local economy. This suggests a lack of understanding of the reasons why people are being forced to use PUGS and creates a hostile environment (ibid).

### ***Funding priorities and maintenance of PUGS***

Throughout the twentieth century the interest of public funding bodies in promoting and funding outdoor recreational facilities, including PUGS, fluctuated significantly. After the First World War there was an increased focus on public health to ensure a physically fit national defence (ibid). However, as the threat of imminent, manual, war waned, public health became the individual's responsibility, and leisure facilities became rapidly privatised. This created a consumerist approach to health and fitness and caused the funding of indoor sports facilities to become more politically attractive (ibid). This shift in public funding made the public health environment highly exclusive, with leisure centres being reported as "dominated by the non-manual socio-economic groups ... and those working full time" (Jones & Greatorex,



*Fig 6 Page from the website of The Royal Parks, London, shows the lack of information on physical accessibility available to users before visiting PUGS.*

2002).

This could have made PUGS more inclusive, as the more economical option for physical exercise, but the £1.3 billion cut to funding of UK parks from the 1980s onwards led to the closure of 50% of bandstands and 60% of paddling pools. This made PUGS less attractive to visit and reduced the length of stays, therefore increasing perceived safety risk because of low natural surveillance (Ward Thompson & Travlou, op cit). A lack of maintenance funding also meant that PUGS became increasingly similar, and therefore placeless, due to a generalisation of all management schemes to avoid the need for skilled or intensive labour (ibid). This also lowered quality of planting, making the space less attractive and stimulating. As a result, "12.5% of people do not believe that their local green space is of a high enough standard to want to spend time in (Chapman & Phagoora, 20 January 2021)" (Holland, op cit).

### ***Barriers to physical access***

In the UK, 2.69 million people live further than a 10-minute walk from PUGS (Fields in Trust, 2020), despite recommendations that green space should be within 400m of a residential

area (Public Health England, 2014). A lack of PUGS can also cause overcrowding when serving too many people, as made apparent during the COVID-19 pandemic. During this period, elderly and more vulnerable visitors reported increased anxiety over the health risk and busyness of local PUGS (Natural England, 2020). Anxiety over the physical environment is also experienced by mobility impaired users because the information available on the accessibility of PUGS is frequently inadequate and in limited formats (Fig. 6) (Ward Thompson & Travlou, op cit). The Royal Parks have a designated page for accessibility information for Hyde Park; however, it only contains links to two other platforms which provide information on physical accessibility of public transport connecting to the park. Cheltenham Borough Council only provides a description of the park. (CBC, 2023; The Royal Parks, 2023).

The journey to PUGS can also cause physical exclusion because path obstructions, such as bus shelters and pedestrian paths trapped between cycle and vehicular traffic are dangerous and tiring for wheel dependants to navigate. Other users may overcome these challenges but be deterred if they are

repeated throughout the journey (Atkin, 2022). Each user's unique needs can lead to conflicts of interest between mobility impaired users; for example, tactile blistered paving at crossings into PUGS aid visually impaired long cane users, but are very uncomfortable for wheel dependants (ibid). Other features benefit a wider range of users – accessible parking and toilets (Corazon et al, 2019), and efficient SuDS to reduce pooling and flooding on paths (Maguire, 2022), improve inclusivity for pram users and cyclists (Ward Thompson & Travlou, op cit).

Prohibition of cycling alienates users of cycling mobility aids (Fig. 7) as they stand out, attracting unwanted attention (Inckle, 2019). Social exclusion is common for mobility impaired users, who express a desire to fully enjoy



*Fig 7 Use of cycles as mobility aid, such as the Duet Wheelchair Tandem above, allows users of all physical abilities to enjoy PUGS. (Everyone Outdoors, website 2023).*

PUGS, including close contact with nature through proximity of planting to accessible routes (Ward Thompson & Travlou, op cit). Planting schemes also frequently exclude visually impaired users by lacking seasonal interest or variety of height and textures (Bell, 2018).

### **Conclusion**

The lack of recognition that the context of each PUGS is different, and that the local population faces a unique set of challenges to being included, is one of the key barriers. This is because one uniform approach, which may have worked in the past, does not address the individual needs of a community who now use PUGS optionally and recreationally. This means that any physical barriers are more likely to deter people now than in the past because they do not have to visit, and so will not if it is physically difficult. Uncertainty over accessibility can lead to exclusion because it causes anxiety for mobility impaired users. A lack of funding at the end of the 20th century has also made PUGS less inclusive because once a space falls into disrepair, and its facilities are closed, users are deterred because it holds neither aesthetic nor recreational value. This creates a cycle of underuse due to perceptions of low safety as footfall decreases, which creates a lack of natural surveillance.

However, when PUGS are not available within walking distance, or have become overcrowded, people are deterred from visiting, making the quality of the space itself of little importance. Similarly, the physical barriers faced in the local built environment by mobility impaired users on their journey to PUGS may prevent them from visiting, making the accessibility of the space itself less significant. The conflicting needs of mobility-impaired users make this challenging to resolve but means that

again the need to properly assess and understand the needs of an individual community is paramount to ensuring the inclusivity of a local PUGS.

### **SOCIAL AND CULTURAL BARRIERS TO THE INCLUSIVITY OF PUGS**

Social and cultural barriers to people accessing PUGS can be more imperceptible than physical barriers, and consequently have a greater impact on inclusivity if unrecognised and left unaddressed. There is a frequent lack of consultation of a diverse range of user groups, and therefore understanding of what each of these stakeholders needs within a PUGS. This can result in people being deterred from using a space, which limits their emotional attachment to it, having a cyclic effect of making them even less likely to use it if they have no sense of belonging.

The needs arising from people's protected characteristics (e.g. sex, race, age) can form social and cultural barriers to people being included in PUGS when they are not met, and mean local authorities are not fulfilling their Public Sector Equality Duty (PSED), which is a legal obligation (Walker, 2022). Different users have very specific needs, often causing conflicts of interest, such as between adolescents wanting to use the space for skating, and elderly people afraid of their own vulnerability to the quick movement. This can mean segregation of space into different activity-based areas is the easiest solution for simultaneous and harmonious use of PUGS; however, this does not curate a culture of inclusivity.

When people can create positive memories in PUGS, they form an emotional attachment to it and establish a lifelong connection which draws them back repeatedly. Low-income

groups and people of ethnic minority backgrounds face greater challenges in accessing PUGS because of lack of positive early childhood experiences in greenspace, unequal distribution of PUGS across urban areas and anxiety over behavioural differences and racism. This means they are less likely to form an emotional attachment, creating inequality in the extent to which people of different socio-economic and ethnic backgrounds feel that they belong, and thus are included, in PUGS.

### **Age and sex barriers**

The varying needs of different age groups within PUGS can cause social exclusion, especially for young people, because "teenagers have no obvious right to spaces of their own ... [and] have nowhere to go except public spaces, where they often come into conflict with other groups" Lieberg (1995, p. 136). Whilst 12-14 year olds still enjoy tree climbing and den building, older teenagers need space for performance and socialising with peers. However, large, noisy gatherings in PUGS are often perceived as a safety risk by others. This can indirectly exclude young children as adults will be more likely to supervise them, or not take them to PUGS (Holland, op cit). Elderly users may also be excluded because sub-cultures like skateboarding can cause anxiety over being knocked down by the fast movement (Ward Thompson & Travlou, op cit). This conflict of interests is frequently resolved by the segregation of PUGS into different uses, reducing integration and embedding negative perceptions of teenagers.

A lack of appropriate provision for different sexes can also cause social exclusion, a study by Girlguiding UK (2020) showing that almost half of females aged 11-21 feel unsafe outside because of receiving unwanted attention. The provision for young people in



PUGS is often activity-orientated and frequently includes multi-use games areas (MUGAs) and skate parks. Although these are widely enjoyed by both male and female users, they form spaces which are open, exposed and have limited exit points, increasing vulnerability for girls, and making it easier for a dominant group to control the space (Holland, op cit). Make Space for Girls, a charity advocating for the inclusion of teenage girls in PUGS, promotes designing smaller spaces with plentiful and flexible seating, such as staging and hammocks (Fig. 8), which reportedly increase the frequency and length of girls' visits to parks (Walker, op cit). Good lighting, public toilets and well managed planting that allows clear sightlines also help to include young women by reducing anxiety over physiological needs and safety concerns (Maguire, op cit). Novelty seating, as shown, can be both attractive and safe.

### Socio-economic barriers

The historical pattern in the UK of affluent residential areas developing around PUGS has meant that "People on low incomes are less likely to live within a 5-minute walk of a green space (46% of those with an annual household income under £15,000 compared to 70% of people with an income over £35,000)" (Holland, op cit, p. 3). This means people of a low-income background are more likely to be socially excluded from PUGS if they did not live close to one as a child. This is because children who visit a green space at least once a week are more likely to visit in adulthood because of the emotional attachment formed (Ward Thompson & Travlou, op cit).

A study by the University of Sheffield showed that Victorian public parks established for the working-class (Mears, 2019) now sit within the most deprived Sheffield communities. However, high population density (ibid) can

exclude people because of overcrowding, especially those suffering poor mental health, of which there is a higher proportion in areas of deprivation (Jorgensen, 2019). In deprived areas, the poorly funded management of local authorities is less likely to be supplemented by community initiatives as residents have little money or time to invest. This means PUGS suffer a cycle of degradation, underuse and abuse, reducing their attractiveness (Fig. 9), (Holland, op cit).

People of high-income background are more likely to have the resources and motivation to invest in improving local PUGS (Public Health England, 2020). They are also more likely to live near to PUGS in an affluent residential area because of eco-gentrification (Kabisch & van den Bosch, 2017). This occurs because those with an emotional attachment to nature (due to childhood experiences living in affluent areas close to PUGS) are prepared to pay more to live near to PUGS, increasing house prices.

### Barriers facing ethnic minorities

People of ethnic minority background often face the same barriers to accessing PUGS as people of low-income backgrounds because historically immigrants settled in inner city areas. These areas became very deprived post-industrialisation, (Clark & Drinkwater, 2002), but ethnic minorities were less likely to leave to find employment because of the community formed in ethnic enclaves, according to Kain's spatial mismatch hypothesis (1968, see Wikipedia JF Kain entry). As a result, "almost 40% of people from ethnic minority backgrounds live in the most green-space deprived areas, compared to 14% of white people" (Holland, op cit, p.3). Experiences of racism, often in public space including PUGS, means ethnic minorities experience higher levels of mental illness, such as depression and anxiety, further reducing their likelihood of visiting PUGS (Commission for Racial Equality, 2003). This can have a generational effect as people fear the same for their chil-

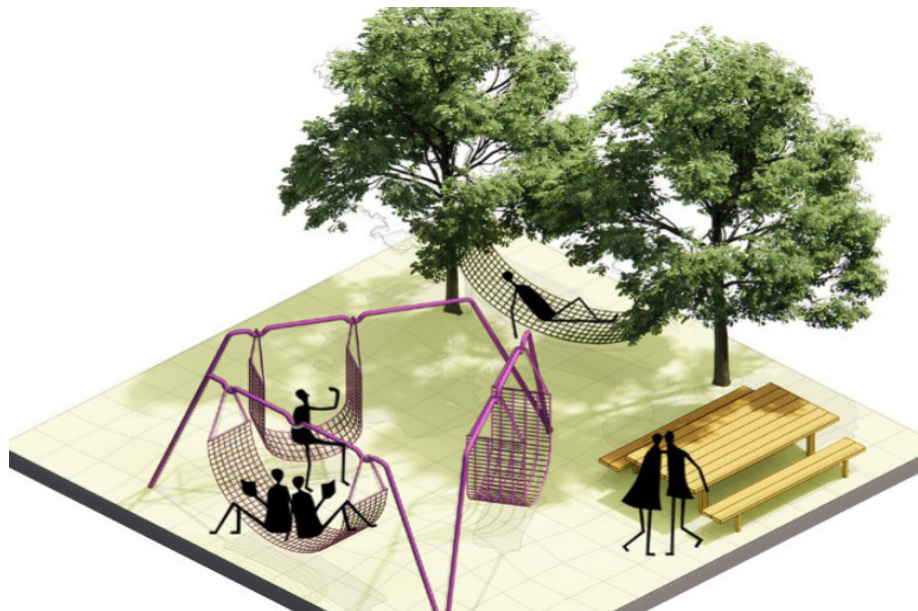


Fig 8 Smaller spaces: Einseidler Park, Vienna (Make Space for Girls website,



Fig 9 Children's play provision in Brighton's Farm Green Park, has degraded to the point of being unsafe. (Brighton & Hove News, 2016).

dren and so prevent them from visiting PUGS and forming positive memories and an emotional attachment to green space (Seaman et al, 2010).

Local authorities, nervous of accidental discrimination, often resort to a colour-blind approach to PUGS design, overlooking cultural differences in perceptions and use of space. Dr Bridget Snaith encouraged landscape architects at the Inclusive Environment's Conference to "recognise and respect diversity enough to adapt practice" (White, 2022, p.16). However, events such as Northamptonshire County Council's Roots Culturifest, (Ward Thompson & Travlou, op cit),

and the gates to Chumleigh Gardens in Burgess Park, London, (Fig. 10) featuring motifs of different cultural perceptions of nature (Black Environment Network, 2005), are only token acknowledgements of cultural diversity. Instead, cultural differences need to be understood, for example that some ethnic minorities want to use PUGS for large family gatherings, (Holland, op cit), and people of Asian and African background prefer well maintained, organised planting styles (Rishbeth, 2004). PUGS need to facilitate the formation of positive memories so that people feel a sense of ownership and belonging in the space.



Fig 10 Chumleigh Gardens in Burgess Park. The gates celebrate the cultural diversity of the local community (Train Walks London, 2023).

### Conclusion

For people of ethnic minority background, the barriers to being included in UK PUGS are perhaps the greatest. This is because they often face the same barriers to inclusion as users from low-income backgrounds, in addition to anxiety over racism and race-related crime, which increase their vulnerability in public space. Negative experiences can prevent people accessing PUGS, limiting their opportunities to cultivate positive memories there, which would then otherwise create a sense of belonging. This may be enforced by social exclusion because of different perceptions of the cultural and social norms associated with PUGS such as which activities the spaces are used for and what behaviour is seen as socially acceptable. This can lead to receiving unwanted attention from other park users, alienating people and making them feel unwelcome. This may be the greatest barrier because design policy can create changes, such as incorporating large seating areas for cultural gatherings, but has limited power in effecting change in people's attitudes towards social & cultural differences.

An understanding of how different groups of people need and want to use space is therefore key to the inclusivity of PUGS. It is not token gestures of inclusion which make people feel welcomed in a space, such as skate parks for young people and art installations celebrating cultural diversity, but features designed to facilitate their preferred way of using it. For example, designing smaller spaces with flexible seating for young girls to socialise, as recommended by Make Space for Girls (.co.uk), allows teenagers to form positive memories in the space, increasing their emotional attachment to PUGS. However, when the reason for PUGS not being a part of everyday experience is because an area is green space de-

prived, the social exclusion is harder to overcome without the introduction of new and more ubiquitous PUGS.

### A CASE STUDY OF PITTVILLE PARK, CHELTENHAM

Pittville Park is a PUGS in the Regency town of Cheltenham in Gloucestershire, UK, that is of substantial local and national historic significance (Fig. 11). There are numerous parks and formal gardens in Cheltenham, giving it a reputation as the 'Garden Town of England', but Pittville Park is the largest, at approximately 34 hectares (CBC, 2020), making it very valuable to Cheltenham's population of 118,800 (ONS, 2021). It is composed of two sides, the east and the west, divided by Evesham Road and connected by an underpass. The two sides were developed at different times, and as a result differ in character and function, which may also mean that they have unique barriers to inclusivity.

The historical development of Pittville Park is still evident in its layout, which makes it a valuable case to assess this as a barrier to its current inclusivity. Its location, straddled between two areas with very different socio-economic demographics, is also of interest in evaluating the extent to which people are socially and culturally excluded from Pittville Park. Maintained and funded by both the local authority, Cheltenham Borough Council, and voluntary group, the Friends of Pittville, makes the park a good example of a PUGS whose inclusivity is affected by its management structure. (However, any conclusions derived from this case study will only reflect upon Pittville Park and its context.)

### Historical Development

Joseph Pitt envisioned Pittville Park as the centre piece for his private estate,

Pittville, in 1825 (CBC, op cit), as an accompaniment to the Pump Rooms, which were developed to encourage tourism to taste the famous Cheltenham Spa waters (Historic England, 2020). This means that the east side of Pittville Park was originally designed only for residents of the private estate, or visitors to the Pump Rooms, in which to promenade (Fig. 12), and the park was gated to ensure this. Even after the decline in the spa industry from 1889, and the following acquisition by Cheltenham Borough Council in 1890, the park remained exclusive, with paid entry to the pleasure grounds (now the lawn in front of the Pump Rooms) until as late as 1954 (Historic England, 2020). The historical exclusivity of the park may have formed social barriers to inclusion today because of people perceiving that they do not belong there.

The west side of the park is a later Victorian addition and was not part of Pitt's estate (Friends of Pittville, 2017) but instead designed as a recreational

space for the artisan workers of the St Paul's area, which backs onto Pittville Park (CBC, op cit). This formed a socio-economic spatial divide of the two disparate residential areas, Pittville being substantially more affluent than St Paul's. This segregation has largely been retained as house prices in Pittville, average at £600,000 for a detached house, almost doubling those in St Paul's, at an average of £320,000 for a terraced house (ONS UK House Price Index, 2022) (Fig 13). The contrasting ornamental and formal layout of the east side against the more informal west side, designed for physical recreation, also enforces these differences (CBC, op cit). Potentially this creates social exclusion between the two sides of the park, but extensive consultation would be needed to evidence that.

**Ownership, maintenance and physical access**

The park is currently owned and maintained by Cheltenham Borough Council (CBC), but the Friends of Pittville, a



Fig 12 The east and more formal side of Pittville Park, showing bandstand and Pump Rooms. (Creative Commons).



Fig 13 Multiple Index of deprivation map for the residential areas around Pittville Park. Red is the most deprived and light blue the least. The socio-economic difference between St Paul's and Pittville is evident (CDRC Map Maker, 2023).



Fig 11 Pittville Park, largest PUGS in Cheltenham and of national historical importance. West side view (Creative Commons).

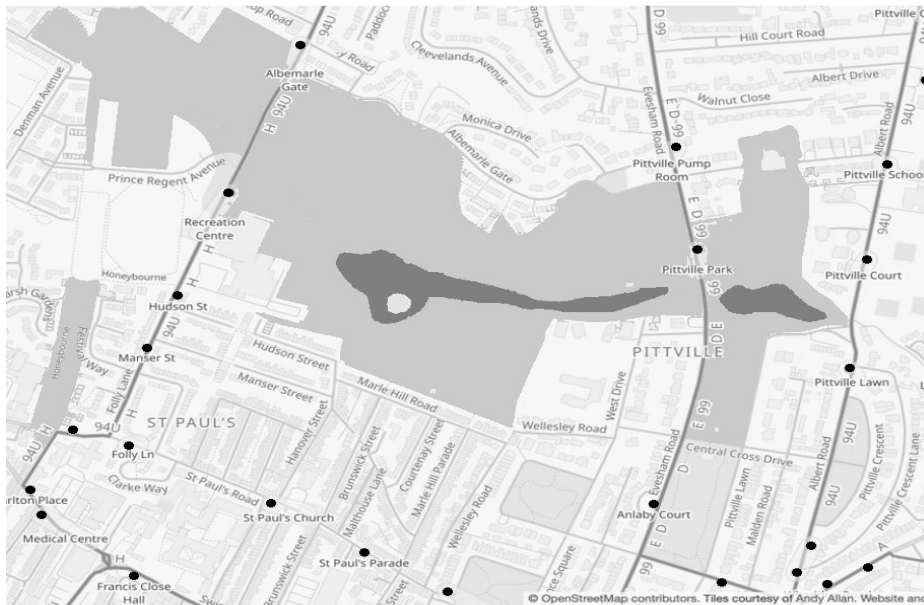


Fig 14 The bus routes and stops around Pittville Park. These make the park accessible to Cheltenham residents who live beyond walking distance (Open Street Maps, 2023).

voluntary community group, organise additional fundraising and works parties to enhance the quality of the park beyond the provision of the council (Friends of Pittville, op cit). This means that the park does not completely rely on public funding, and so is likely to be maintained to a higher standard than those located in areas without active resident groups. For example, the Friends of Pittville maintain planting through voluntary work parties twice a month, making it a more attractive space (CBC, 2022). Despite this, a 2018 study by Illman Young on behalf of CBC and the Friends of Pittville showed that overgrown shrubbery in the east side's rock garden blocked sightlines and provided hiding places, creating perceived safety risks, especially for female users (Illman Young, 2018).

Pittville Park caters for a wide range of stakeholders, incorporating play-

parks, gym trails, wildflower meadows and a skate park. The free toilets and good lighting also improve accessibility, and good bus and cycle connections (Fig. 14) make the park inclusive for those living beyond walking distance (CBC, op cit). The Pittville Park 2020 Management Plan states that "All pathways are Equality Act 2010 compliant and are generally in good condition; wheelchairs and mobility scooters are often seen in the park" (ibid, p.41); however, the paths to the underpass are very steep and narrow, with no steps or handrail. This could exclude mobility-impaired users from accessing the other side of the park to which they entered.

#### **Social and cultural inclusivity**

To attract families and young people to Pittville Park, despite its formal historic and ornamental nature (ibid) in 2015 a MUGA (multi-use games



Fig 15 Community bridge, designed by local children and created by Christopher Lisney (Lisney Sculpture, 2022).

area) was added to the west side and the east side play park was refurbished (Tomlinson, 2015), following consultation of users and successfully includes 0-14 year olds all year round (CBC, op cit). However, the inclusion of a MUGA does not necessarily include teenagers, despite providing age-related activities. The community bridge designed by Dunalley Primary School in 2021 (fig. 15) gives local children a sense of ownership, strengthening their emotional connection to the park, despite being dependant on adult accompaniment (ibid).

Pittville Park hosted a Pride event in 2019, albeit the first in ten years, and Black Lives Matter in 2020 (Whiteway-Wilkinson, 2021). However, Cheltenham is not very ethnically diverse, being 94.3% white (Nomis, 2022), which may mean that representation for Pittville Park lacks understanding of culturally different perceptions of the space. It could also increase anxiety over race-related crime, although Cheltenham's crime rate of 73/1000 people for 2021-22 is below UK average (Crime Rate, 2022). Dorothy Glen,

a Cheltenham resident implies a sense of safety and belonging: "I watched my daughter learn to walk...in Pittville Park. We recognised the dogs that were walked every morning, and ... the woman who started walking, then began to run." (Whiteway-Wilkinson, op cit). However, this source was quoted by *Gloucestershire Live* newspaper, which could introduce a positive bias.

#### **Conclusion**

The historical development of the site has, due to the inaccessible nature of the underpass, both socially and physically segregated two very socio-economically different communities. People of ethnic minority background may also be socially and culturally excluded by the lack of ethnic diversity in both park users and groups representing them. These become barriers to inclusivity in Pittville Park because if people do not perceive themselves as belonging on one side of the park, cannot physically access it, or feel uncomfortable because of cultural alienation in a predominantly white space, they will feel excluded and less likely to visit

the park.

Pittville Park is fortunate to not suffer lack of community investment because of the Friends of Pittville, which likely formed because of the affluent nature of Pittville's demographic. As a result, the park has not been allowed to degrade or seen the closure of facilities, which could have otherwise deterred users and made the park feel unsafe. However, although an attractive space provides reasons for people to visit, increases feelings of safety, and increases the chance of people emotionally connecting with PUGS, it is not aesthetics which is the greatest barrier to inclusivity. Instead, the history of Pittville Park has had a significant impact because of its past exclusivity and spatial divide. This may prevent or deter people from using some, or all, of the space, which would remove the opportunity for people to form positive memories and therefore feel that they belong.

## DISCUSSION OF LITERATURE REVIEW AND CASE STUDY

### *Historical barriers to inclusivity*

The historical development of PUGS is often inextricably linked to current social and economic barriers to inclusivity. The green gentrification of the late 1800s has made PUGS relatively exclusive to wealthy urban residents living in the affluent areas within walking distance, or who have private transport to visit them. Pittville Park, however, is within walking distance of both the affluent Pittville and more deprived St Paul's areas. It also has sufficient public transport links for residents in other areas of Cheltenham to visit the park at a low cost. But these factors may be unique to the historical development of Cheltenham, making it more inclusive than other UK PUGS, where urban sprawl also contributes

to people living further from historic PUGS in urban centres.

The building of PUGS such as Pittville Park by, and for, the wealthy has created a deep-rooted history of exclusivity, which can linger in the grandeur of design features. The formality of ornamental PUGS can deter some users, when perceived as remnants of a landscape in which they do not belong, or that was built upon exploitative wealth. This is not the case for Pittville Park, Joseph Pitt's wealth arising from his career as a lawyer, but the grandeur of the built form within the park may still be perceived as an excessive display of wealth. Others simply do not enjoy formal landscapes or find them inflexible to adapt to their preferred use of green space.

### *Social and behavioural barriers to inclusivity*

The Victorian parks created intentionally to provide recreational space for the working classes were frequently later dominated by the middle- and upper-class users wanting to display their wealth by promenading or carriage driving. This caused social exclusion because of the social and moral standards of such pursuits, which then constrained the way that people could behave in the park without being condemned or alienated for their behaviour. To some extent this remains true of PUGS today, as those of a higher income background are more likely to have a nostalgic connection to PUGS because of frequent visits as a child, having lived closer to one than those growing up in deprived neighbourhoods. This establishes a middle-class majority in parks, making their behaviours the norm, and drawing unwanted attention to those who have different perceptions of PUGS and so use them differently.

Such exclusion is most likely to occur

to people of low income or minority ethnic backgrounds, who either perceive PUGS differently because of cultural differences or have limited experience of using them, because of growing up in green space deprived areas. The historical development of Pittville Park has created social segregation between the two sides, which will be reinforced if people feel that their behaviour does not match, or is condemned by, the dominant social group on either side. This means people are more likely to use whichever space gives them a greater sense of belonging.

### *Physical accessibility as a barrier to inclusivity*

The physical accessibility of PUGS, and the journey to them, is arguably one of the greatest barriers to inclusivity because if people cannot physically reach or use a space, then other potential means of exclusion become inconsequential. The slope to the underpass connecting the two sides of the Pittville Park implies accessibility, but the gradient of the ramp, and the lack of stepped provision, mean mobility-impaired users are restricted to one side of the park, making it irrelevant to them whether the other side is accessible. There is also a frequent lack of understanding and consultation about the unique set of challenges that a PUGS and its context pose to physical accessibility, as there is often a conflict of interests between users with different mobility impairments.

The incorporation of features which make PUGS physically accessible do not often consider social exclusion, which can make mobility-impaired users feel isolated and embarrassed when using the space. Restrictions on activities such as cycling, which exempt those using cycles as mobility aids, draw unwanted attention for wheel dependants. There are no cycling or

skating bans in Pittville Park, meaning that, as well as making it physically possible for wheel-dependants to use the space, they are also socially included as they are enjoying the space as many other people do. This allows them to feel a sense of belonging and create positive memories rather than feeling isolated by their impairments.

### *Funding and maintenance as barriers to inclusivity*

Limited public funding can lead to facilities closing and PUGS becoming barren spaces which have no attraction, reducing footfall. People then perceive them as unsafe, leading to further under-use and deterioration. Pittville Park has not suffered this cycle because the Friends of Pittville invest their own time and energy into the park's upkeep. As a result, users mention visiting frequently with young children, implying a perception of safety. Such groups do not exist in all communities, especially in more deprived areas where people frequently suffer worse health or work long hours. There may also be a higher proportion of rough sleepers, meaning cultural perceptions can lead other stakeholders to feel unsafe and avoid visiting. This creates social exclusion because the PUGS within walking distance are undesirable to visit, making deprivation a key barrier to inclusivity, because today communities must self-sustain PUGS.

Low budgets have also led park management plans to be simplified to reduce the workload and need for expertise. It can also mean that local authorities try to replicate successful PUGS strategies in numerous neighbourhoods. This can make PUGS placeless and reduces their inclusivity as people do not have a sense of belonging due to a lack of resources to properly investigate the needs of that community. Effective consultation before the re-

furbishment of the Pittville Park play-park, however, meant that this did not occur. The facilities now provide what the children want, including them in the space by meeting their needs.

### ***Age-related barriers to inclusivity***

Age-related exclusion is a significant barrier because if children visit a PUGS frequently, they form an emotional attachment to it, and so are more likely to visit in adulthood, forming a generational pattern. This becomes a socio-economic barrier because people from low income and minority ethnic backgrounds have disproportionately low access to PUGS either because of greenspace deprivation or because of poor maintenance with low community input. This means that they have little emotional attachment and therefore sense of belonging to PUGS, which is heightened for people of ethnic minority backgrounds because of anxiety over racism and cultural differences.

Social exclusion of teenagers is common in PUGS because the facilities targeted at them do not meet their needs, chosen based upon age-related activities rather than developmental needs or consultation. This has occurred in Pittville Park, the inclusion of a MUGA and a skate park being irrelevant because the most popular space for young people to gather is on the Agg Gardner recreational field (part of the west side of the park). This suggests that their desire for autonomy to socialise away from their home environment is greater than for prescriptive activities. Although this shows that they have not been excluded from Pittville Park, large gatherings may cause conflicts of interest as older users often perceive these as a safety risk. Lack of relevant provision may also exclude other teenagers who prefer smaller groups and require smaller spaces with seating to feel included and safe in the park.

## **CONCLUSION**

The greatest barrier to the inclusivity of UK PUGS today is historical development because of the pattern of green gentrification in the late 1800s. This has caused spatial exclusion for any member of the public living beyond walking distance of these parks which remain where they were created, in predominantly affluent residential areas. The historical overtaking of PUGS by a middle-class majority, even when purposefully created for the working classes, has also created a significant barrier to inclusivity today, because of the social exclusion that occurs as a result. Therefore, both physical and social exclusion from PUGS have arisen from the way that they were originally developed, creating extensive sequential impacts as a result.

It is people of low-income backgrounds, which disproportionately affects people of ethnic minority background, who are most likely to be physically excluded because of the historic spatial distribution of PUGS. This is because they do not live within walking distance of the affluent areas in which the PUGS were originally set, and so are less likely to visit, lowering their emotional attachment to the space. This leads to social exclusion because, in combination with the historic pattern of middle-class domination of PUGS, an absence of people of different socio-economic and cultural backgrounds allows a social norm to establish, isolating users who disrupt this by variations in their behaviour and preferred use of PUGS.

The historical development of PUGS is therefore most likely to exclude people of minority ethnic backgrounds. This occurs both physically, because they are more likely to live in greenspace deprived areas, and socially, because of the established norm of white

middle class behaviour. This makes cultural differences in how PUGS are perceived and used more noticeable, which may attract unwanted attention, making users feel unwelcome and culturally isolated. The design of UK PUGS can also reinforce this through lack of provision of features which facilitate different uses of space, such as large family gatherings and cultural celebrations.

In addition to these historically rooted barriers, people of ethnic minority background are likely to face social exclusion because of anxiety over racist abuse in PUGS. A white majority and the exposed nature of green spaces may increase feelings of vulnerability, as well as generational fears because of the negative experiences of relatives. This can increase feelings of loneliness, as well as mental health issues such as anxiety and depression. This will further reduce the likelihood of someone feeling confident in visiting PUGS, and therefore their opportunities to create positive memories there, lessening its place meaning for them.

A limited sense of belonging is therefore the main reason that the historical development of PUGS is the greatest barrier to their inclusivity today, and for people of ethnic minority background being the most likely to be excluded. This is because when people cannot physically access a space, because it is beyond walking distance and private transport is not affordable, they begin to perceive it as being for somebody else. This is often reinforced by the space being dominated by people who fit the social norm and live close by. This dominant group is likely to have a sense of ownership over the space and so, where combined with a nostalgic connection to greenspace because of also growing up near to PUGS, a protectiveness over green space and how it is used can be formed, exclud-

ing others who do not conform to these perceptions.

The combination of historical factors and the current social factors which reinforce them, can make people feel that they do not belong because they do not fit in and are made to feel that they are disrupting the balance and social norms of the space. This prevents them from using PUGS, especially because it is not a necessity to visit green spaces. When a PUGS causes any group of potential users to feel that they do not belong, it is not wholly inclusive because it is not providing every member of the public with an equal opportunity to experience the space. Therefore, because the historical development of PUGS in the UK prevents people, most pronouncedly of ethnic minority background, from feeling that they belong in a space, it becomes the greatest barrier to the inclusivity of UK PUGS today.

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## Biography

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# AN EXPLORATION OF URBAN FORESTS AND CONSIDERATION FOR THEIR FUTURE DESIGN

Anne Watson

Being close to nature and spending more time in urban green space has become today's zeitgeist, particularly since the COVID-19 pandemic. The World Health Organisation recommends that all people should reside within 300m of Green Space (WHO, 2016). Trees are an integral part of this imperative within the urban environment and 4.2 billion people living in cities benefit from the ecosystem services that urban forests provide (Espeiron-Rodriguez et al, 2022).

But trees are often treated as just an object, a structure used to add vertical interest to a design. The full benefits that trees can offer are often overlooked and their disservices ignored completely. This article will look at the benefits the urban forest offers to humans and the environment, broken down into the following sub-categories:

*Human services* include health/ physiological; positive childhood development; biophilia and sense of place, and *Ecosystem services* include urban heat mitigation; improving water quality; creating wind-breaks and enhancing air quality.

The role of trees within green infrastructure and the economic benefits of urban forests will also be briefly discussed. Then follows a consideration of issues or disservices presented by urban forests, for example, what prevents people visiting forests, the environmental costs of having trees grow-

ing in an urban setting and how they can be detrimental to human health.

The final section will consider current recommendations about selecting the right tree for the right place, which will help to ensure newly-planted trees have a good chance of survival in increasingly adverse environmental conditions. Collectively, these considerations will help to highlight the relevance to landscape architectural practice, specifically how urban forests should be designed and managed in the future.

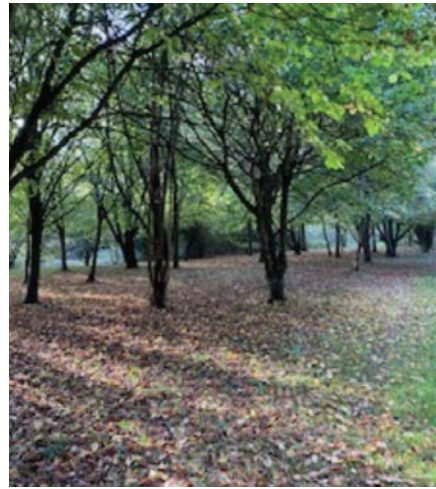
## URBAN FORESTS

The term urban forest was first introduced by Erik Jorgensen in 1965. He recognised the benefits of maintaining and protecting trees within towns and cities. Whilst working at the University of Toronto, Canada, he defined the term as “[a] specialized branch of forestry that has as its objectives the cultivation and management of trees for their present and potential contribution to the physiological, sociological and economic well-being of urban society” (Jorgensen & Anthopoulou, 1974).

## The History of Urban Forests

Over millennia, human relationship with nature and forests has changed quite dramatically. As civilisations have developed, the use and need of forests have changed. The migration





Figs 1 & 2 Rainbow Woods, Bath, & Richard III Woods, Gloucester, 2022 (Watson)

into the urban environment has meant much of the rural landscape has become incorporated into urban areas. In his 2006 book *Culture, Landscape and Forest*, Dr Cecil Konijnendijk details how forests provided food, shelter and our survival depended on them, but gradually they became just a resource. As populations grew, forests around great civilisations, such as the Babylonians, ancient Greeks and Romans, diminished. That said, trees were still held in high esteem in settings such as temples and formal gardens.

During the Middle Ages, forests referred to lands that were kept exclusively for hunting, the rights of which were owned by emperors and monarchs. It was during the Renaissance that forests and natural landscapes became valued for their aesthetics as well as their function. Tree-lined streets and squares that emerged during the Georgian period were found in wealthy, middle-class areas in the city. It was not until the Victorian period that public parks emerged as a healthy respite to the polluted, over-populated industrial towns that had arisen

during the industrial revolution. At the same time, as more people were migrating to urban areas, rural areas which offered access to nature and its resources, were becoming more isolated (Hibberd, 1989; Grey, 1986).

Urban forestry is not a new concept; the benefits of having trees in towns and cities have been well documented over the last five decades. Even before the name urban forestry was adopted globally, within the UK the theory behind the name came under a different guise of Garden Cities.

### The Garden City Concept

Ebenzer Howard, an urban planner, recognized the environmental benefits of urban forests and natural spaces in his book *Garden Cities of Tomorrow* published in 1898. As well as his book, Howard founded the Garden City Association in 1899 to address social injustice and promote economic efficiency combined with health and wellbeing, within the remit of urban planning.

Howard saw that merging the benefits of rural and urban living had many

advantages for the people living there. He envisaged small communities designed and built, in concentric patterns. These communities contained housing, industry, green space and agriculture which were encircled with land designated as green belt to limit and protect the towns from growth. The idea was that each garden city would be financed by private corporations. Howard's ideology was the inspiration behind the cities Welwyn and Letchworth, in England (Fig 3).

### Sir Patrick Abercrombie

It was not until after the Second World War that the government started to address the problems of overpopulated cities in Britain. Former president of the Town Planning Institute and member of the Landscape Institute, Sir Patrick Abercrombie devised a visionary plan to create open spaces in London. He wanted to create a close-

ly linked park system to improve people's health after the devastation of the war by creating 'parkways' linking open spaces that stretched out to the green belt (Turner, 2023). A green zone that wrapped around the city centre which was part of the Greater London Plan, 1945, proposed distinctive zones around London. The first, a low-density sub-urban zone; the second, a green belt and an outer zone in which new developments would be built. In 1946, the New Towns Act authorised a programme of building new towns on greenfield sites designated by the government (Hibberd, op cit).

Fifteen new towns were designated between 1945-55 and 17 between 1961-70. They were funded and managed by central Government, alleviating the over-crowding in London, Birmingham and Glasgow, for example, and became standalone towns largely independent of the major cities. These New



Fig 3 Welwyn Garden City memorial garden (Creative Commons Attribution)

Towns offered good communications, infrastructure and amenities, as well as much more urban forest and green space. They had a strong design ethos that if the town offered a good physical environment, it would be “good for people and good for business”.

As urban forests were significant in the design process, Warrington ensured indigenous tree and shrub species were planted throughout. Milton Keynes, based on a grid system, had specific tree species planted in distinct zones to create different identities. Telford, which was built on a coalfield, maintained some ancient woodland, as well as creating 1000 hectares of new ‘tree-scapes’, planting over 5 million trees of new woodland on old spoil sites. This eventually earned it the name ‘Forest City’ and was used as an EU case study in an urban forestry research programme (Simson, 2018).

The specific term and concept Urban Forestry first emerged in Canada, in 1965, introduced by Erik Jorgensen, a Danish forestry specialist based at the University of Toronto. He saw Urban Forestry as tree management in areas that are “influenced and utilized by the urban population” and offered “potential contribution to the physiological, sociological and economic wellbeing of urban society” (Randrup et al, 2005; Konijnendick et al, 2006). The concept was quickly adopted in the United States, by the Society of American Foresters.

It was not until the 1980s that professions such as urban planning and landscape architecture started to adopt the concept alongside long-term planning policies. In 1988, a UK conference on Urban Forestry was held; it showcased ‘The Forest of London Project’, the first urban forestry initiative in the UK, which closely followed a US model which used tree-planting as a tool for urban social, economic and ecological

regeneration. The ground-breaking project ran for 15 months. As well as planting new trees, it sought community engagement with London’s trees in the hope Londoners would appreciate and take some responsibility for them. The project set a precedent for the future of urban forestry, particularly in the UK and the conference marked the beginning of the national urban forestry movement in Britain (Johnston, 1997).

## BENEFITS OF URBAN FORESTS

Figure 4 identifies the benefits of urban forests in several distinctive categories: human services, abiotic services and biotic services, as follows.

### Human Services

Since COVID-19 & during the pandemic, more people are wanting to spend time outdoors, particularly spending their leisure time in urban parks and woodlands surrounded by nature. Urban woodlands and green spaces offer numerous physiological, social, psychological and environmental benefits to those living in urban areas. “Evidence suggests that nearby woodlands play an important role as a place to get away from urban life” (Ward-Thompson et al, 2007).

### Health/ Physiological

Spending time in nature has been proved to have the following physiological benefits:

- Reduce blood pressure and heart rate
- Reduce urinary adrenaline and serum cortisol
- Improve mental wellbeing by reducing anxiety, depression, fatigue
- Positively affect the immune system by increasing natural killer cells and intracellular anticancer proteins
- Reduce recovery time after surgical intervention

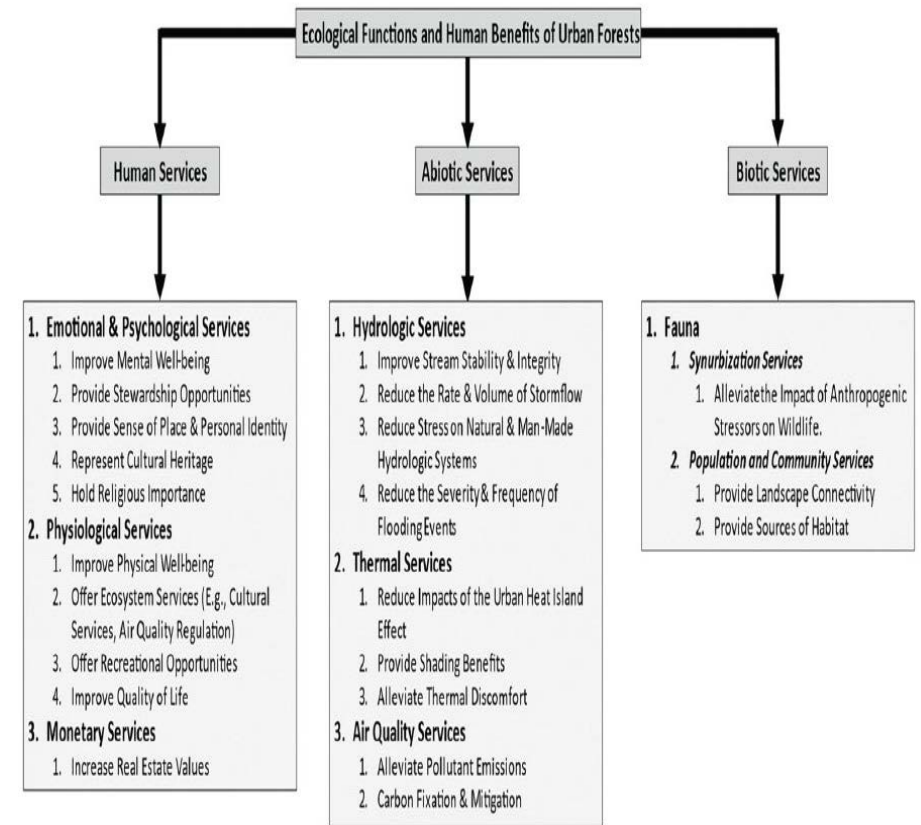


Fig 4 Ecological functions and benefits of urban forests (from Forest Research)

Significant research has been done to measure the effects of spending time in forests and the benefits it can offer. In many Asian countries forest bathing, *shinrin-yoku*, which means experiencing the forest atmosphere, is extremely popular because of the positive effects on health. The benefits are now recognised in government health strategies in the UK with general practitioners prescribing spending time within a forest as an alternative therapy (O'Brien, Morris & Stewart, 2014) and research shows that there is direct correlation between levels of exercise and access to green-space (Bird, 2004).

### Positive Childhood Development

Urban forests can help children learn about nature in a man-made urban environment where they may not experience it otherwise. Studies have concluded that educating within a forest environment has multiple benefits, particularly to improve:

- self-esteem and self-confidence
- social skills
- language & communication skills
- physical motor skills
- motivation and concentration
- knowledge and understanding of the environment

Research has also shown that learning

within a forest environment can have beneficial impacts on children with ADHD (attention deficit / hyperactivity disorder) which has seen a rise in Forest Schools (Fig 5) offering a forest-based learning environment (Faber Tayler & Kuo, 2008).

Whilst research and literature are relatively limited into beneficial links between access to trees and green space and academic achievement, there is a strong suggestion from available evidence that trees near schools and window views of green spaces showed greater numbers of positive academic achievement (Browning & Rigolon, 2019).

### Biophilia

Humans have a physiological need to be in contact with nature. Erich Fromm, a psychologist, first developed the term in 1964 when he described the “love of life and all that is alive”. It became better known as a concept after the publication of EO Wilson’s book *Biophilia*. He described it as “the urge to affiliate with other forms of life”



Fig 5 Forest school

(1984). Subsequently, the concept has been adopted by designers and architects, recognising the positive benefits of human interaction with nature and integrating into our living and working environments. From this, biophilic design has emerged and urban forestry plays a large part in it.

### Sense of Place

People’s connection with trees and woodland is based on socio-cultural meanings, their childhood experiences, and their ability to access woodlands. Socio-cultural influences from literature and the arts and media often have a very positive effect. Nostalgia and childhood memories attached to mature trees and woodlands hold resonance with older people and are often a reason for them to visit (Jorgensen et al, op cit; Konijnendijk, 2018).

City forests not only provide leisure and wellbeing opportunities, but also bring people together and help create the identity of an area. Trees have a time presence and sit alongside landmarks and monuments from which people can get their bearings. A large tree in the centre of a square makes a memorable statement – “this is the place”, (Gehl, 2010). By creating a sense of place, a sense of attachment is also created which results in community investment and social cohesion. In turn, this has a “positive effect on well-being and feelings of safety” (Konijnendijk, op cit).

### Ecosystem Services

Ecosystem services are aspects of the natural environment that benefit humans, which increase our wellbeing and have a positive effect on human health. In urban areas, urban forests provide a range of ecosystem services that improve human health and wellbeing:

- Reduce surface temperatures
- Improve water quality
- Help sustainable urban drainage
- Provide habitats for wildlife
- Create wind breaks
- Reduce traffic noise
- Enhance air quality – in most circumstances

### Urban Heat Island Mitigation

Trees are very good at providing shade which subsequently reduces solar radiation. Urban trees can also reduce humidity and air temperature which has been proven to reduce the urban heat island effect. An urban heat island is a densely urban area which is warmer than surrounding rural areas. This is due to fewer trees, vegetation, and more bare earth within these areas. As a result, less of the sun’s energy (heat) is reflected, less energy is used by evaporating water and transpiration and heat is absorbed by buildings, as well as the hard ground surfaces around

them. Urban trees, however, cool the area around them by providing shade, during transpiration and by capturing rainfall. They are known to reduce urban temperatures – on average urban green spaces are 1°C cooler than the built environment around them and an area of 100ha of green-space can cool the surrounding 400m of built-up area by 4°C, (Rolls & Sunderland, 2014, pp75-6)

### Improving Water Quality and Creating Windbreaks

Trees can improve water quality by preventing pollutants from entering rivers and streams as well as contributing to flood management (Sinnott et al, 2018). Often trees are used as windbreaks and screens, providing some control and the ability to direct the flow of wind. In a study conducted in Hong Kong to analyse the thermal performance of trees in specific design patterns, researchers found that if

## URBAN HEAT ISLAND PROFILE

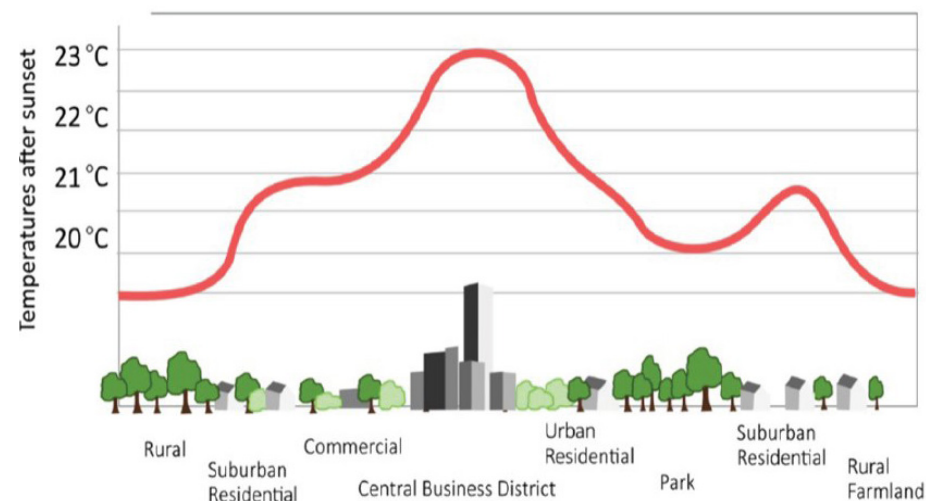


Fig 6 Urban heat island (Royal Meteorological Society, 2021)

urban trees are placed at certain angles in the path of the wind, they had a significant cooling affect. When they measured trees planted at 45° angles away from the wind direction, the cool air created by the trees is carried up to approximately 30m away; planted at 90° angle the effect was less successful (Tan et al, 2016).

### Enhancing Air Quality

Air pollution poses the biggest environmental risk to health, caused by the combustion of industrial and domestic fuels which release harmful pollutants: particulate matter (PM10 / PM2.5), nitrous oxide (NO<sub>2</sub>) and ozone (O<sub>3</sub>) (Ferranti et al, 2019). Trees can improve air quality by capturing pollutant

particles on their leaf surfaces and removing them through their stomatal uptake, as well as sequestering carbon dioxide through photosynthesis.

### Green Infrastructure

The phrase green infrastructure (GI) was first developed as a response and direct correlation with grey infrastructure, such as buildings, roads, sewers, pavements etc. It is now used to mitigate the problems created by urban growth and climate change, “to counterbalance some of the negative effects...accentuate ecosystem services and quality of life benefits”, (Cameron et al, 2016). GI is defined as the “strategically planned network of natural and semi-natural areas with other environ-

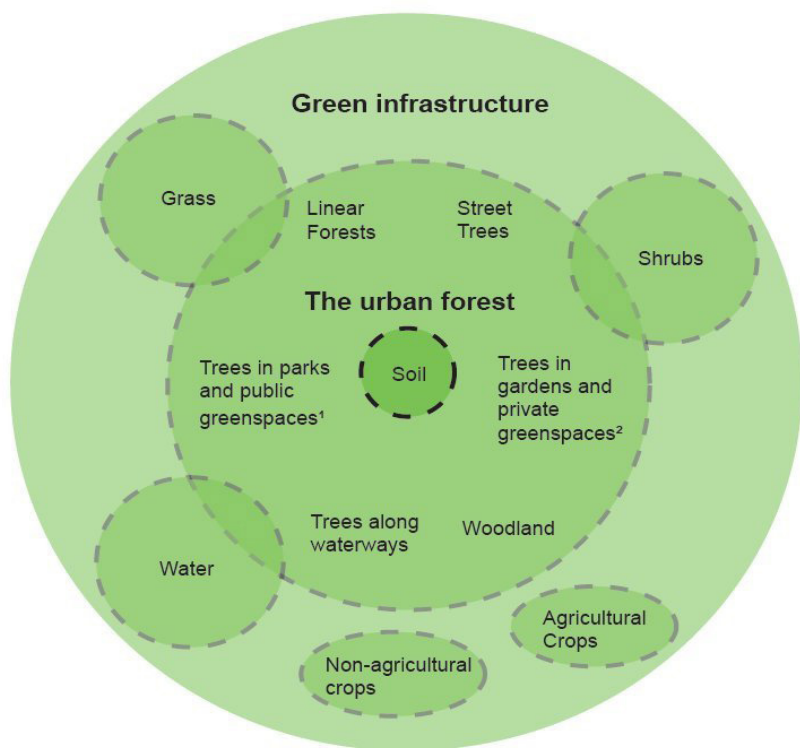


Fig 7 The urban forest & its relationship to green infrastructure (UFWACN, 2016)



Fig 8 Biophyllic design, vertical planting, 2020

mental features designed and managed to deliver a wide range of ecosystem services in both rural and urban settings” (EC, 2019). The Landscape Institute have taken the position that green infrastructure is “fundamental to landscape practice” and has driven the inclusion for GI in all planning and development practice, that it is critical for addressing climate change and adaptation, carbon sequestration, public health and wellbeing, food and energy security (LI, 2013). Urban trees are intrinsic in the role of green infrastructure. They can filter pollutants through their leaves and roots; capture rainfall and slow storm water; provide shade and reduce air temperature; capture carbon and enhance the their surroundings aesthetically (Hirons & Sjöman, 2019).

### Supporting biodiversity

Urban forests provide a habitat for urban wildlife, providing essential food sources, shelter and breeding grounds. The trees themselves provide ecosystems for pollinators, as well as canopy and wood dwelling organisms, such as fungi, lichens and mosses. They also enhance biodiversity by providing stability to urban ecosystems through wildlife corridors and matrixes creating connectivity across densely built urban areas. Consequently, this supports resilient population sizes and ensures species diversity and within each species, genetic diversity (Roeland et al, 2019) which is essential for urban ecosystems to function long-term.

### Economic Benefits

Calculating ecosystem services helps to clarify how nature and specifically urban forestry fits into our economy and therefore, justify spending decisions. Urban forests offer multiple economic benefits to the urban setting.

They add value to property and land by improving the street scene which in turn attracts businesses and increases tourism revenue.

As a result of improving air quality, having urban trees can reduce expenditure on manufactured methods and when trees are used in sustainable urban drainage, it reduces the expenditure on storm water infrastructure. Urban trees are providing potential for carbon-offsetting trade, which are schemes often adopted to mitigate carbon emissions from industry and other human activity (Roy et al, 2012). "Natural green open spaces attract businesses to invest in an area, add value to property, provide an educational resource and bring together local communities", (LI, 2011).

#### CONSTRAINTS & DISSERVICES OF URBAN FORESTS

The benefits and services of urban forests are regularly documented; however, the constraints and disservices are often overlooked. Urban forests cannot be sustainable if both sides are not properly balanced and addressed (Roman et al, 2018).

#### Fear

Many people enjoy the paradox of freedom versus containment. Gaston Bachelard in his book *The Poetics of Space* describes the sense of 'intimate immensity' when "going deeper and deeper into a limitless world" (1964). Some believe that fear is a perfectly natural experience and to be expected within a woodland setting. "Fear is a relevant part of landscapes and of the tension between place (home, safety) and space (the unknown, the adventurous and maybe, unsafe)" (Konijnendijk, op cit). In a study conducted by the Forestry Commission, Scotland, it found that most people strongly disagreed with

the notion that woodlands are scary or feel vulnerable; however, men were far more dismissive than women were (Ward-Thompson et al, op cit).

In general, urban populations have mixed feelings towards urban woodlands and green spaces. Since human life began, we have relied on forests for shelter, materials, and food. Countless myths, legends and stories are wrapped around mystical forests, woodlands and trees, as well as the lives within them (Figs 9 & 10). "Most people experience a range of complex and conflicting feelings upon encountering woodland". People's connection with trees and woodland is based on socio-cultural meanings, their childhood experiences, and their ability to access woodlands. Socio-cultural influences from literature and the arts and media often have a very positive effect. Nostalgia and childhood memories attached to mature trees and woodlands hold resonance with older people and are often a reason for them to visit (Jorgensen & Anthopoulou, op cit).

The fear of crime is widespread and does affect people's choice as to whether they will go into those spaces; "Perceived personal safety is an experienced feeling, distinct from actual safety, security or risk ... feeling unsafe outdoors is often connected to the fear of crime" (Jansson et al, 2013). There are several reasons for fear of crime, specifically, gender appears to have a direct impact on whether you fear crime; "gender was found to be a significant and strong predictor of fear of crime in urban green spaces...the majority of studies showed that females have significantly higher fear levels than their male counterparts" (Maruthaveeran & van der Bosch, 2014). In a study of 666 people in Helsinki, 63% of women who took part said they found forests and parks the most frightening places to visit within a city, seeing them as

closed spaces increasing vulnerability (Koskela & Pain, 2000). In the study conducted in Scotland for the Forestry Commission, which specifically targeted use by urban communities, they found that men are more likely to visit woodlands on a daily basis than women and more likely to go alone (or with a dog) (Ward-Thompson et al, op cit).

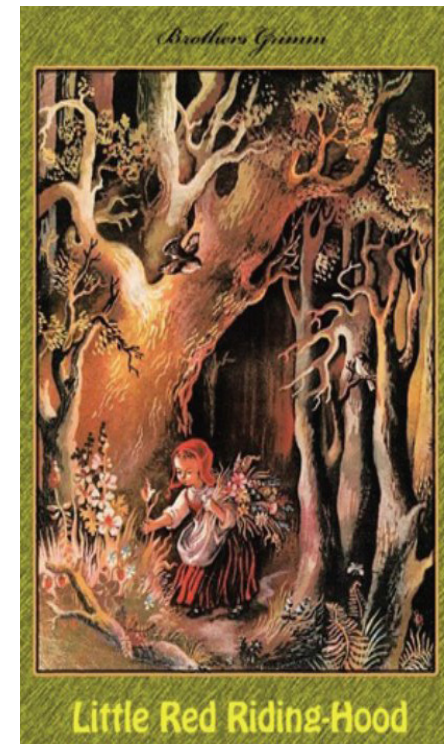
One of the main reasons given by a group of people over 65 in Sheffield stated that the reason they didn't visit woodland as often as they'd like was down to the fear of getting lost; they also felt that they were more vulnerable to injury and victimisation because of their age (Jorgensen et al, op cit).

Previous experience of crime has a direct effect on the fear level of urban woodlands and green spaces. If a crime

has been committed in a specific place, it is then associated with that place and potentially avoided.

#### Lack of Access

Our experience and access to urban forests and woodlands very much impact on our feelings towards them and that physical and emotional benefits of access to green space are strongly reflected in childhood experience, (Ward-Thompson et al, op cit). If people visit woodland as a child, data shows that they are far more likely to spend time in, and value being in, a local forest or woodland. They conclude that "people who often visited green places as children are more likely to visit green or woodland areas within walking distance of home...and are also



Figs 9 & 10 fairytales & cult films

more comfortable visiting woodlands and green places alone as adults”.

However, when interviewed, people who did not visit woodlands gave the additional reasons:

*Mobility* – listed by women, older, disabled and predominantly white people. *Too far away* – the main reason given by Black and ethnically diverse people. *Lack of facilities* – specially for women. *Physical access to woodlands* – the reason given by disabled people, they were unable to navigate styles, gates and a lack of toilets also presented problems. They also felt a sense of ‘not being wanted’.

*Cost* – for low-income families, the main reason given. It was too expensive to take public transport or drive just to go and visit woodlands, there being very little motivation to do so.

In addition, the study suggested that visitors to forests owned by the Forestry Commission were more likely to be white, middle-class men in full-time employment and visitors to local authority owned woodlands were more likely to be Black or ethnically diverse. It also highlighted that cultural background had a part to play in whether people wanted to visit woodlands or not because it was not something that was normally done (Morris et al, 2011).

### **Release of allergens**

All living plants emit biogenic volatile organic compounds or BVOCs. Some of these compounds can be harmful, causing respiratory problems or even morbidity (eg asthma). In a rural setting, where there is greater airflow, these emissions have very little or no impact on human health. However, in an urban environment BVOCs can become problematic during extreme heat events and the problem is exacerbated due to the urban heat island effect. Ground levels vary depending on the tree species; typically, broad-leaved

trees tend to emit higher levels. They then become major contributors to the ‘ground-level’ ozone and smog, particularly when combining with anthropogenic emissions. Urban tree-planting programmes “do not tend to consider the potential of several popular urban tree-species contributing to the production of secondary air-pollutants” (Churkina et al, 2015). For example, the *Platanus* genus has very high BVOC levels and yet is still a very popular urban tree.

Additionally, trees react to atmospheric pollution. Air-pollution can increase the release of allergens (pollen), some tree species more so than others, creating issues for urban planners, “since the general practice of placing trees as closely as possible to the pollutant source to remove pollutants more efficiently, but it may at the same time increase the allergenicity of the pollen grains” (Dunn, 2010).

### **Spread of harmful pathogens**

Scientists have long been warning that the spread of pathogens (diseases) from animal to humans will increase as we disturb more natural habitats. There is also a fear that animal borne diseases spread within the urban habitats including forests and parks. Within the UK, urban forests support several mammals, such as foxes, badgers, rats etc all known to carry disease. Currently, throughout Europe, Avian Flu (HPAI) is having a devastating effect on wild and domestic bird populations. There is major concern because the commonly named zoonotic disease is known to have been transmitted from the avian population onto humans resulting in a mass-culling operation of wild and domestic birds. By providing and increasing habitat through urban forestry and not addressing this disservice is a dangerous path to take (ibid; Prior, 2022).



Fig 11 Inaccessible woodland path, Stourhead estate (Watson, 2022)

### **Public Safety**

Trees, if subjected to harsh conditions (ie damage from environmental or human causes over time, or are a tree species known to suffer from early limb or whole tree failure resulting in drop boughs and branches) pose a significant risk to public safety. Regular assessments of trees must be made to ensure protection. They also create obstacles to motorised and non-motorised vehicles, as well as pedestrians.

### **Cost of planting & maintenance**

Right from the start of a tree-planting programme, there are initial costs. From purchasing the tree itself, the labour costs of planting, tree pit technology and irrigation systems, staking and soil conditioning. Following that there are multiple costs for upkeep. Tree maintenance underpins the health, survival, and growth of urban trees. However, local authorities responsible for the upkeep frequently find their budgets stretched to such an extent that tree maintenance becomes a low-priority and is placed below other essential services. Poor growth and

conditions directly impact the level of environmental, social and economic benefits urban trees can provide.

There are three categories of cost:

*Direct costs* = planting, pruning, watering & other maintenance

*Infrastructure maintenance* = pavement repair (due to disturbance from roots), occlusion of street signs, power outages (caused by falling trees or debris), blocked drains from leaf litter, street cleaning of fallen leaves.

*Opportunity costs* = trees take up potential for parking spaces, cycle lanes, new building opportunities.

There are also variable costs which occur, for example having to tackle disease such as *Hymenoscyphus fraxineus* (ash dieback) which in the UK will eventually kill approximately 80% of ash trees, although not all these trees are growing within the urban setting (Vogt et al, 2015).

### **The Future of Urban Forestry**

In two studies completed by the Forestry Commission in Scotland by Ward-Thompson et al, op cit, and in

another conducted during 2021-22 in five European countries by Ugolini et al, 2022, the following elements were observed that would have a positive impact on increasing the amount of people visiting forests and how often these use it:

#### ***In general***

- Well maintained
- Free from litter and fly-tipping
- Offer a sense of peace
- Offer opportunities for children to play and learn
- Presence of signs and info boards
- Presence of other users
- Presence of wardens or rangers
- A good balance between natural and formal green space
- Open views

#### ***For women***

- Well-lit pathways and spaces
- Good visibility
- Surveillance from security cameras

#### ***For ethnic diverse communities***

- Much more likely to visit green spaces close to home
- More information about green space and urban forests being targeted at their communities
- More guidance from people knowledgeable of the forest visited
- No low-growing vegetation to improve visibility through the space

#### ***For adolescents***

- Physically attractive
- Close to home
- Offer freedom to hang out, without being too visible, as opposed to often unwelcoming public spaces

#### ***For older people***

- Well maintained and safe pavements
- Safe and easy road crossings
- Offering lots of benches
- Easy access
- Surveillance from security cameras

### **Calculating the value of trees for future planning**

Chris Neilan, whilst working for Epping Forest Council, devised CAVAT (Capital Asset Value for Amenity Trees) which provides a method for managing trees as public assets rather than liabilities. Those involved in urban forestry, tree preservation and urban planning can calculate the carbon capture, the value in the reduction of air pollution, water capture and filtration, helping local authorities to justify the costs of planting and maintaining trees. The method can also be used by other public bodies for arboricultural analysis for legal disputes, single tree hazard assessments etc. The calculation is made by multiplying the area of a tree trunk's cross-section by a unit price, giving a basic value based on its size; the tree species, visibility to public, condition of the leaf canopy, suitability to its site and the tree's life expectancy are all then considered to produce a single value.

A similar software system developed by David Nowak whilst working for the United States Forest Service, called iTree, was launched in 2006, and which records the specific benefits of urban trees. It evaluates the environmental services a tree can provide by combining the species, sunlight exposure, girth and canopy size with local weather and pollution values. It can forecast how much a specific tree can reduce air pollution, for example, and has now been adopted by several countries and is able to calculate the full services a tree can offer (Usbourne, 2018).

The benefit of trees is down to the trees' ability to survive and therefore it is essential that, in future urban design, the right trees are selected for the right place. Trees that are fighting to survive require more management and are more vulnerable to pests and

diseases. "For those reasons, species selection is a subject that warrants strategic attention by decision makers across the green infrastructure community" (Hirons et al, op cit).

Whilst governments are recognising the essential need and value of urban forests, they must plan for and monitor the changing risks of climate change. Many common urban tree species will severely suffer or more alarmingly, not survive rising temperatures, changes in rainfall volume and the spread of disease. By 2050 three quarters of urban trees will be at risk due to climate change and "56 per cent of urban tree species are already living in areas where the temperature range exceeds their natural preference. Even more urban tree species – 65 per cent – are living under abnormal rainfall levels". The lead author, Dr Manuel Esperon-Rodrigues said that city-planners and local governments must take this into consideration when selecting urban trees for the future (op cit; McNee, 2022).

Several agencies have published literature offering advice and strategies to ensure the 'Right Tree, Right Place'. Forest Research, the research agency of the Forestry Commission published a user-friendly *Urban Tree Manual* in 2018. It was produced to assist people involved in urban planning and tree planning. The manual outlines the most important considerations in tree selection in urban areas. It also advises about the long-term issues that urban trees are facing.

### **DISCUSSION**

This article has sought to identify the most current and relevant research available about urban forests. There is a wealth of data and academic publications commenting on their benefits to humans and the environment.

Urban trees play an essential role in green infrastructure, from an aesthetic perspective, and therefore enhancing the economic value of the area. Urban forests also offer numerous ecosystem services and are vital to address issues created by climate change and urban growth (Rolls & Sunderland, op cit, pp75-6).

It is essential, going forward, that the most suitable range of trees are selected (Hirons et al, op cit; Esperon-Rodrigues et al, op cit) Based on the research, it seems that the disservices trees create are not discussed widely enough and are not commonly introduced at the planning stage. Ignoring the negative effects can have damaging long-term effects (Roman et al, op cit).

By providing evidence about urban forests from both positive and negative perspectives, it has highlighted the numerous elements that a landscape architect or urban planner needs to consider when designing urban forests and creating green infrastructure. That trees should not be chosen just for their aesthetic value (Cameron et al, op cit). The evidence has also shown that tree specification may have to be adapted in the future to meet the changing environmental conditions of the future. (Esperon-Rodrigues et al, op cit; McNee, op cit)

Landscape architects create designs and draw up plans adding rendered circles or two-dimensional objects in a section drawing to represent trees. Quite often the focus is on aesthetics and vertical hierarchy. Trees are vital to the urban environment and that with careful selection they can offer multiple benefits on a human and environmental level.

Physiologically, they can help to reduce blood pressure and increase the levels of endorphins which create a sense of wellbeing. Quite often, they provide a cultural and nostalgic at-



Figs 12 & 13 High maintenance street trees in Ischia (Watson) and the problem of combining street trees with parking spaces in Amsterdam (Watson)

tachment for those fortunate enough to be able to spend time amongst trees from an early age. Urban forests enhance the places we live in, increasing the value of properties and the areas in which they grow.

Clearly we can develop a strong attachment to trees and many people feel protective towards them. It is therefore important that we try to preserve trees where possible, when designing as a landscape architect. When that is not an option, public engagement and reassurance is essential.

It is also important to ensure that green infrastructure is introduced in all areas within the urban setting, that accessibility to urban forests is not just for the privileged groups in society.

It is clear that urban design must seek to increase ecosystem services,

to fight against the effects of climate change and improve the urban environment. By taking a landscape-led approach, it will ensure a progressive, sustainable design process working with nature rather than against it.

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#### Biography

*This article is an edited version of Anne Watson's BA (Hons) dissertation submitted in July this year. She is currently registered on the Master's course.*

# ASSESSING THE POTENTIAL FOR INTRODUCING MORE WILDLIFE INTO THE URBAN ECOSYSTEM IN THE UK

YunHui Luk

Since the industrial revolution, urban expansion has continued, yet in an unsustainable manner. It has not only limited biodiversity in the urban realm but impacted on the wider natural environment since human activities affect all ecosystems. The WWF Living Planet Report (2022) shows a 69% decline in global species population since 1970. The UK, despite recent agri-environmental policies, has half of its species in decline and 15% are threatened with extinction (Savills, 2022). Additionally, less than 1% of UK's environment is left 'undamaged' (Shore, 2022). This neglect of environmental needs has rendered urban areas to be more hostile, with increasing risks to food and water security. This is only expected to become more severe as 66% of people have been estimated to live in cities by 2050, the most degraded landscapes (United Nations, 2022).

Urban rewilding represents the concept of human-modified ecosystems embraced in the local city setting. It promotes expansion and co-evolution, developing as a general environmental restoration definition. Yet the core of rewilding is to support all native species and ecological processes (Pettorelli et al, 2019). Not to return to a pristine environment, rewilding, conversely, is a method to move forward in our landscapes to create more functional, sustainable urban realms (United

Nations, op cit).

Today, rewilding is gaining momentum as, for example, people have begun to understand natural value. This is demonstrated with the *Rewilding Garden* at the prestigious Chelsea Flower Show, 2022 (Figure 1). Thus, there is an increasing economic incentive for governments and companies to be more environmentally conscious. Green infrastructure, which can be perceived as urban rewilding in the most basic form, is the catalyst to generate inward investment and employment while improving urban liveability. This is the vision for Europe's 2020 strategy (Mollashahi & Szymura, 2021; Findlay, 2022). Recently, there was also a requirement for an increase in 10% net biodiversity gain in England's Environmental Act (Landscape Institute, 2022). And yet, in the past 20 years, green spaces near new developments in England and Wales have shrunk by 40% (Findlay, op cit). This demonstrates the failure to balance contrasting needs of the urban and natural realm. Rewilding and the design process creates a potential for positive interactions, to change the current relationship between human-wildlife from dominance to coexistence by merging cultural and recreational values. It can also become an opportunity to tackle environmental issues through design including climate change and species decline (Webb & Moxon, 2021).



*Fig 1 Rewilding Garden at the Chelsea Flower Show 2022*

The aims of this article are to assess the opportunities and constraints of rewilding potential in the UK using an overview of current literature and reference to case studies. This will aid in the understanding of landscape architecture's role in rewilding by presenting the possibilities of environmental design or rewilding integration for a more cohesive urban ecosystem, adding emphasis to landscape planning and design.

The concept of rewilding is 30 years old, yet even the recent book by Hawkins et al (2022) has few mentions of urban rewilding. Although there are forms of auto-rewilding, scarce number of projects rewild cities through design, emphasising the little focus there is on it (Clancy & Ward, 2020). Rewilding originated in a 1992 *Wild Earth* essay by Dave Foreman (Pettorelli, et al, 2019). It was later defined in 1994 to create systems of corridors and buffers for environmental conservation. Rewilding was designed to support native species including predators and keystone species, within all ecosystems and ecological processes (Pettorelli et al, op cit).

Increasingly, human and wildlife needs are contradictory, creating difficulty in urban rewilding (Gilbert, 1989). It is strongly implied how the disorder of nature opposes people's expectations of a well-kept cityscape, requiring high maintenance of urban wildlife landscapes. Public mentality views low maintained, rewilded space equating to neglect of landscape and social needs (ibid). This contradiction of human-wildlife relationship, seen in most literature, discourages urban ecological development while promoting rural rewilding with less conflict. The idea of cities built for people creates a defined obstacle for urban rewilding. For example, reintroduction of top predators risks human wellbeing. Traditional urban landscapes require order, which contradicts the unpredictability of nature. This acknowledges the abundance of rural rewilding literature and projects in contrast to the urban realm. Public needs are the core of any urban design. Therefore potential urban rewilding projects will have to negotiate public requirements.

Mounting public pressure to maintain an organised aesthetic often



*Fig 2 The contrast between the lush foreground, the built background (Luk, 2022)*

causes the erosion of urban wildlife. Urban greenery is sculpted for its aesthetics but the parkification of wildlife areas downgrades the quality (ibid). Increased human activity, including trampling, damages the ecology while key elements such as the shrubs and decomposition layer are removed. This limits biodiversity and rewilding potential. However, the most attractive parts of natural areas are informal, often doubling as recreational space to integrate the positive experiences of nature (ibid). With limited space in the urban realm, a multifunctional approach with rewilding improves positive human-wildlife engagement. Mono-landscapes in urban areas are problematic, in respect of rewilding. Landscape parkification is most efficient at building public acceptance of rewilded urban landscapes, maintaining urban aesthetics yet limiting ecological potential with human-imposed control (Clancy & Ward, op cit). Public

involvement must exist in any aspect of urban design requiring a delicate balance for a successful rewilded urban landscape. This is one of many examples where rewilding can cause human-wildlife conflict.

Urban expansion is another human-wildlife conflict, resulting in increased habitat degradation and fragmentation. Eroding liveable spaces for wildlife drastically destabilises the ecosystem and leads to endangered species and a decrease in genetic structural diversity, further risking species' wellbeing even if we rewild them. (Mollashahi & Szymura, op cit). Traditionally, green spaces would result from areas difficult to develop such as Central Park in New York due to its swamp environment. However, recently there is a growing trend advocating rewilded ecology to be integrated into city designs to increase greenspaces and connectivity (Russo & Cirella, 2020). Nature-based solutions such as green corridors are examples

that bridge the urban realm barriers, a basic form of rewilding, although it caters more to aesthetics. Current urban environments do not provide the resources or opportunities for wildlife to thrive, and half of all known species are insects (Insects, 2022). Poor planting used to green landscapes contributes to fragmentation in urban areas, attracting popular insects but neglecting the wider ecosystem. This is low quality rewilding. Designers need to plan for sufficient space, interconnecting natural ecosystems and urban life. But the literature suggests collaboration between different disciplines of work to ensure a sustainable connection between fragmented landscapes. Rethinking urban design, landscape and planning can significantly transform the urban ecosystem into one with longevity (Russo & Cirella, op cit).

The core goal of rewilding is to maintain a healthy ecosystem to be long-lasting. This implies overly designed spaces to not be sustainable. A functional approach to rewilding and landscape design will result in more connectivity between biological and physical components of the ecosystem (United Nations, op cit). Rewilding urban ecosystems to exist in their raw form, not perceiving them as ecological wastelands, can maximise wildlife and economic benefits with less maintenance. Designs for longevity provide opportunities for nature to adapt and develop. Human maintenance is necessary to the limited interruption to urban life. This is a part of the planning process landscape designers should be more thorough in. Self-maintaining ecosystems and naturally designed landscapes can aid this but its potential in urban areas is currently restricted with limited research (Hawkins et al, op cit).

The research emphasises that rewilding should protect and support local

ecosystems by bolstering biodiversity quality (Pettorelli et al, op cit). For example, Mauritius introduced a non-native tortoise in order to mitigate the ecosystem dysfunction resulting from the extinction of native wildlife (Jepson & Blythe, 2020). Non-native species can have potentially unpredictable challenges to native wildlife. However, non-native species are able to self-heal and rebuild networks of interaction between communities and ecological processes. The rewilding of 'keystone' species will allow for wildlife to take new forms (ibid). There is currently too much focus on green space quantity with little ecological development and local ecosystems remain oversimplified, presenting a false green solution. Rewilding, which can take many forms, is the key to rebuild biodiversity, particularly in the urban realm.

Concerns in the literature state that climate change can contribute to events leading to excessive tree dieback. By 2050, 76% of urban trees glob-



*Fig 3 Tree lined street in Cheltenham, UK (Luk, 2022)*



*Fig 4 Decomposing plant litter on path, Pittville Park, Cheltenham (Luk, 2022)*

ally will be at risk. This will accelerate habitat loss, undermining our climatic resilience and future urban rewilding potential (Esperon-Rodriguez, et al, 2022; Findlay, op cit). This emphasises current rewilding significance to improve urban ecological resilience. The study shows how urban areas need to restart natural processes to reduce stress on urban vegetation and to mitigate urban effects from climatic factors. Ranging from government policies to ensuring sustainable landscape designs, vegetation shapes how urban areas evolve. It is necessary to improving local biodiversity to ensure potential for future rewilding endeavours.

Instigating the restoration of natural cycles, including the nutrient cycle and decomposition, is strongly linked to vegetation. Several research studies highlight current hostilities of urban soils where frequent disturbances such as compaction damages soil structure, limiting underground diversity and rewilding potential. This is further considered with the simplification of urban ecosystems, due to increasing

density and public activity. Rewilding can tackle this, while reintroducing vital natural process (Shore, op cit). Comparing natural ecosystems' function and structure to man-made ecosystems identifies the significant mechanisms to be restored such as the long-term accumulation of organic materials. It is a significant step for urban areas to become carbon sinks but also improves wildlife productivity (Lee & Seaward, 1982). However this can cause public disservices, for example, the aesthetics of decomposition or plant litter in urban areas which contrasts with people's expectation of cityscapes. It is essential for designers to incorporate these undesirable processes in an appealing manner. This is a part of restoration in rewilding which develops urban resilience and sustainability (Hawkins et al, op cit).

An improved wildlife resilience correlates to improved urban resilience to mitigate extreme weather events, mainly flooding in the UK. A current, well-known rewilding project taking place is the introduction of beavers.





Fig 7: Photomontage of Pilley Bridge nature reserve in Cheltenham, UK (Luk, 2022)

a larger area with more productivity (Rewild Britain, 2022). In contrast, Nottingham's rewilding project in Broadmarsh has been in the proposal stages for the past 20-30 years. This is another example of wilding abandoned plots, using degraded retail spaces (Weston, 2020). Noticeable distinctions between this project and Pilley Bridge,

are the additional time and planning necessary to rewild due to increased accessibility, developing on the literature review. Located in the city centre, there is insufficient space for an abundant, connected wildlife, consistent with most UK cities (Vann, 2021). The plans for green corridors connecting the city centre to Sherwood Forest are

restricted by the existing infrastructure, limiting potential urban-rural connectivity and ecological development (Weston, op cit). Urban areas make-up 1% of earth's land surface but houses over 50% of the population, this insufficient use of space is a worldwide issue (United Nations, op cit).

Pilley Bridge provides a woodland classroom to educate children about the outdoors thus integrating green spaces within urban areas, tackling biophobia, while improving community involvement. Biophobia is an irrational fear of wildlife. Children with limited natural exposure have negative attitudes towards invertebrates, while this was not seen for children considered knowledgeable with invertebrates (Soga, et al, 2020). This suggests that fewer natural experiences increase biophobia, linked with increasing habitat fragmentation (Pettorelli et al, op cit).

This supports rewilding, as negative attitudes originate from the disconnected human-nature relationship in urban areas, another contrast between urban-rural communities.

### Existing urban ecosystems

Poor planting means fauna diversity is curtailed, increasing vulnerability to external events such as disease or climate change. However native planting strategies seen in Pilley Bridge have demonstrated biodiversity potential. Designers need to understand the significance of natural communities as flora-fauna interaction in the ecosystem is key to ensuring a sustainable urban ecology, to reach a balance between aesthetics and nature.

Habitat resilience relies on the structure and function of plant communities within it. Planting designs, tolerant of urban microclimates will involve in-



Fig 8 Photomontage of Spontaneous Urban Plants in Cheltenham, UK (Luk, 2022)

spiration from existing communities. Spontaneous Urban Plants (SUPs) are the most adapted and resilient in urban environments. Mostly annuals, they are the first vegetation to stimulate flora recovery, meaning overall low economic investment. Plant identification will additionally develop local knowledge of environmental conditions (Hu, et al, 2022). While perceived as weeds, ruining the pristine visuals of urban areas, they provide refuge and resources for insects (Figure 8). This can be perceived as informal auto-rewilding while supporting native species in the urban realm (Pettorelli et al, op cit; Clancy & Ward, op cit).

There is a strong relationship between plants and soil ecosystems. Faster growing plants with high photosynthesis capacity allow for quick and nutrient rich decomposition, often the properties of SUPs. This affects the soil food web structure where bacteria and earthworms dominate fast-growing plants' soil. Conversely fungi and millipedes dominate slow growing soil (Lee & Seaward, op cit; Bardgett, 2005).



Fig 9 Fungi, Gloucester (Luk, 2022)

Such effect on the soil biota is not often considered in sustainable designs, but the idea can be seen in Pilley Bridge's native planting strategy. A well-designed scheme has true diversity visually and in properties benefiting the urban ecology so improving rewilding potential.

Soils are significant storers of carbon, slowly accumulating but stored for a prolonged period (Lee & Seaward, op cit). 94.2% of biocarbon is stored in soil, over half in the top 30cm of topsoil (Shore, op cit). Urban spaces can develop healthy topsoil despite existing limitations. However, most urban soils remain poor. This adds to the pollution and hydrological stress from impermeable paving, degrading urban vegetation (Esperon-Rodriguez et al, op cit). The interaction between vegetation, insects and animals, places soil at the foundation of all interconnectivity and stability of ecosystems with mutually evolved relationships (Insects, op cit). The recovery of soils contributes to urban areas becoming carbon negative while introducing more wildlife. This consideration in landscape architecture will result in multiple benefits with soil recovery. However exacerbated climatic extremes suggest more planning with urban vegetation is required to mitigate increasing threats. This is also significant from a wellbeing perspective, as greenery supports public health and enhanced urban liveability (Esperon-Rodriguez et al, op cit).

The presence of vegetation, with fungi and microbes, in the soil biota is significant in cities to naturally remediate current urban problems such as pollution. The hairs on tree leaves contribute to reducing over 70% of air contaminants, according to a Beijing study (Traverso, 2020). Rewilding with fungi and microbes can break down

pollutants that plague the urban soils thanks to the presence of necessary enzymes. Urban designs require more space to ensure existing landscapes are flourishing in vegetation, fungi and micro organisms for improved ecological and public health.

### Urban Materiality

Construction materials used in urban environments are part of the difficulty of restricting flourishing wildlife in urban areas. Understanding materiality is important to guide urban planning for the purpose of improving biodiversity (Mollashahi & Szymura, op cit).

At Pilley Bridge, an industrial past has influenced soil properties; for example, concrete leaching alkaline makes urban areas more hostile for wildlife. Naturally sourced materials can mitigate such impacts. (Russo & Cirella, op cit). True urban communities have characteristics unseen in natural environment such as lithomorphic soils (Gilbert, 1989).

These form in abandoned sites from rubble and, initially low in organic matter, they can be quickly colonised by plants, binding soil particles and retaining water and nutrients (ibid).

Architecture is a feature that defines the urban realm. However, it contributes to one billion bird deaths in the USA annually (Crook, 2022). The most damaging structures are reflective glass risking window strikes. (Crook, 2022). The buildings are also a source of light pollution whose uneven reflections have successfully deterred birds (Figure 11). Artificial lights can be deadly to worldwide insects, making them more vulnerable (Lighter nights threaten bats and insects, 2022). This emphasises the significance of biophilic design, as there is importance in the materiality and structure used. Similar to the Sponge City concept, technological and scientific advancements can aid in sustainable landscapes by making biophilia possible in the cities, benefiting rewilding.



Fig 10 London skyline demonstrating the contrast in shape (Specfinish, 2017)

## Human-Wildlife Conflict

Transmission of (so-called zoonotic) disease from wildlife to humans is a key fear discouraging rewilding, again linking to the distribution of how communities see wildlife (Schell, et al., 2021). Urban coyotes have tapeworm infections as high as 65% causing parasite exposure concerns in the USA. Pathogen spill-over is expected to increase with habitat erosion which partially increases wildlife activity in urban areas (Schell, et al., 2021). Despite conflict risks with rewilding, there is often further human benefits: continuous exposure to natural environments improves internal microflora to bolster immunity.

Small pockets of wildlife, like Pilley Bridge, can be of importance, a starting point to nurture urban greening. 'Pocket Gardens' in London are small patches of land developed to become greener wildlife spaces (Insider, 2020). Although limited in wildlife value, (Figure 12), vegetation providing food is significant enough to be a habitat space, valuable to urban insects

(Dover, 2015).

Human corridors, such as roads, are the most prominent conflicts that restricts animal movement and mortality. Increased road density further curbs potential wildlife success or opportunities in urban habitats (Schell et al, op cit). It is because of this, urban wildlife has adapted to be productive at night. Avoiding periods of high human activity, nocturnal adaptation has increased tolerance and habituation for successful reproduction in cities (ibid) (Figure 11).

Large scale, rapid landscape changes have been the most intense and damaging processes to existing urban ecology. Excessive construction renders local ecology non-existent. To ensure a more protected landscape, urban designs require more diversity. Guangzhou is undergoing a project aiming to improve water quality and contribute to restoring river ecology. This has been intertwined with urban redevelopment while connecting ecological belts to historical sites, areas of great public interest. This project has multi-



Fig 12 Pocket garden in Tottenham, London (Luk, 2022)

faceted integration of the environment into the megacity (Urban Sustainability Exchange, 2019). Bird species have doubled, the number of insects has increased fivefold (Findlay, op cit). Wildlife is intertwined adding resilience against external pressures such as climate change. Ensuring socio-economic and cultural considerations within any wilding project in the UK will result in a landscape built for longevity. The reuse of existing landscapes for urban ecologies to adapt and thrive with reduced disruptions to construction, adds significance to the role of landscape architects.

## Conclusion

Rewilding will take different forms dependent on the country or climate and so there is no universal method of urban rewilding. Local to the UK, this holds true for human-wildlife conflicts and landscape constraints. We may never reach a harmonious utopia, wildlife's unpredictability contrasts with human ideals for order. Mitigation and

adaptation are the key to human-wildlife conflict, although there are significant social and cultural habits needing to change. It is commonly suggested that rewilding is without human maintenance. However the core meaning of rewilding stated by Pettorelli et al (op cit) is the support of native species and natural processes. As the case studies have demonstrated, abundant urban wildlife necessitates some human procedure to coexist, contradicting existing rural rewilding. The role of design in greening urban realms is less about being adventurous as it limits landscape potential; rather, it needs to be considerate. It requires designers to come from a place of understanding, with knowledge of the local community and ecology.

Landscape architecture is crucial to urban rewilding to meet public needs with the underlying study of ecological science. These professionals shape the foundation of the urban framework, influencing coexistence. There are many considerations which hinder the



Fig 11 Light-polluted street in Basingstoke, UK (Luk, 2022)





Fig 13 Tree-lined street in Cheltenham, partially rewilded (Luk, 2022)

progress of rewilding. Consequently, negotiation with the multiple fields that build urban realms while balancing aesthetics and ecological function is necessary to promote public willingness to rewild. The urban biota have evolved without nature for 200 years. Design is required to reintroduce nature back into the human ecosystem. This will create multifunctional landscapes, meeting human needs through urban wildlife connectivity, establishing landscape architecture as a collaborative industry.

Urban rewilding in the UK is approached through habitat creation, developing what little ecology UK cities have. The implementation of rewilding can be difficult considering the interconnected socio-economic systems that urban areas are built on. Yet, this reflects the interdependent ecology of natural habitats. Despite increasing

public awareness and positive governmental policies, urban areas demonstrate an overall unpreparedness to rewild.

There are clear benefits to evolving urban productivity; however it requires viewing it as an artificial ecosystem. It presents new possibilities of how to develop from a wildlife perspective, what path is required rather than what is desired. However more research on the urban ecosystem is required: organic solutions, embracing vegetation and biophilic landscape designs, aim to secure the establishment of healthy flora and soil, the foundation of rewilding. Reusing what exists in the urban landscape, waterbodies or SUPs, will evolve cities into acquiring characteristics and elements of natural environments which are beneficial as climate change becomes a larger threat. Urban realms can become more resilient as technolo-

gy progresses, and the urban fabric is built on scientific advancements. This is important as city lifestyle is viewed to be at the core in today's world issues. To demonstrate sustainability within the urban realm gives hope for a sustainable future.

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### Biography

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## MEMORIES OF THE CHELTENHAM LANDSCAPE COURSE, 1964-68

### Peter Gawn

Surviving school thoughts turned to what I might do in life. Initially I was attracted to architecture as a profession, but I wasn't totally convinced it was for me. Then a neighbour suggested landscape architecture (of which I'd never heard), so I wrote to the Institute to learn that the only undergraduate course was at Cheltenham and that if I wanted to be considered for the following year's intake they were making assessments the following week. So I applied, attended an aptitude test and interview and was accepted within a couple of weeks of hearing about the profession for the first time! The following September I turned up to start a new chapter in my life – Gloucestershire College of Art and Design (based in Cheltenham) was to be the centre of my life for the next four years. Actually that's not strictly speaking true, because the second year of the course was residential about twenty miles away at Pershore Institute of Horticulture.

It was certainly a time of change for the whole household. For my parents (who by that time had both lost their mothers) here was their only son also flying the nest. My father had just received a new company car and bought the old one supposedly for my mother. However, she insisted that I should have it; so there I was, the proud possessor of my own car at the tender age of eighteen. It was a Standard Super

Ten and of course I can still remember its registration plate: SLT 546.

I found very comfortable 'digs' on the Gloucester side of Cheltenham in a house next door to where two other first year students (an architect and a planner) were also staying. They both had cars as well, so we were very well set up transport-wise.

At the time I started the course it was integrated for the first year with specialists in planning and architecture, before we 'landscapers' were hived off to Pershore in the second year. As first year students we occupied two studios upstairs in the very grand Pittville Pump Room; and we also had use of the Bayliss Room for lectures etc as well as various other facilities. Although we didn't have exclusive use of it, as members of the public we could also avail ourselves of the grade II Pittville Park outside, which was (and still is) a tremendous asset. I can't remember the exact number, but I suppose there were about three dozen new students – of whom 12 were to study landscape architecture. Probably to get us thinking in the right way from the off (and in recognition of the immediate environment in which the college was placed) our first design project was a litter bin. That made one think, I can tell you! Then we were made to stand up and present our scheme to the other students (including 3rd and 4th years)



*Fig 1 Pittville Pump Room, where we spent our first year at college*

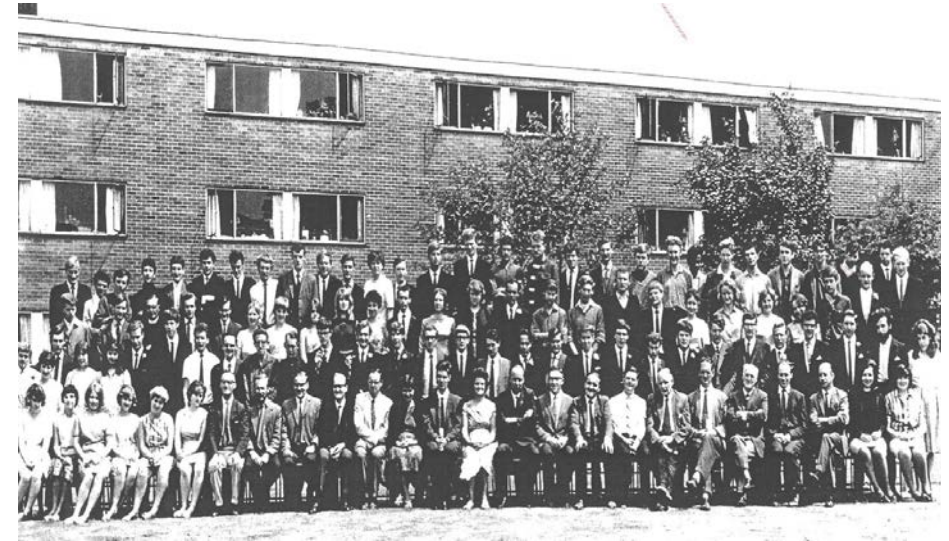
and we had to record ourselves on a tape recorder. For someone like me who had never heard the sound of his own voice it was a revelation. I have never been greatly alarmed by public speaking since, but boy, was it terrifying that time! Oh, and my design for a litter bin was terrible by the way.

The first year at college was very general, aiming to make us all aware of the part to be played by other environmental professionals and how to integrate with them. I think many of those lessons stay subconsciously for life and are not restricted to the professions involved. I'm always very conscious when dealing with others who don't share a similar background that they often profess their view to be the correct one without listening to alternatives which may be more valid.

We completed the first year at college with varying degrees of success, some of which have survived the test of time better than others. I remember making a model of my drawing board out of balsa wood and being highly commended (it hasn't survived) and coming top in a chain and level survey in Pittville Park using techniques which

would nowadays be regarded as ante-diluvian. Neither of those events seem closely related to landscape architecture, but in fact I found them both useful in my later career and so proved the benefit, I believe, in rounded study for its own sake. I can't say that looking down on the heads of people attending a Tupperware party in the Pump Room from the gallery outside our studios had quite the same long-term benefit, however!

Then we landscape architecture students moved to Pershore for our second year. It was very different. For a start we all had to 'live in'. We boys moved into the top couple of floors of what we called the 'Giraffe House' – a newly built hostel with (for the time) well appointed individual rooms and shared facilities. The girls had rooms in a separate, not quite so new block. As individual course members we had our own studio within the main Avonbank House and this only served to heighten the other students' suspicion of us as interlopers. In a very mild way we probably strove to assert our independence of the place, such as when we (we thought) viciously over-pruned a rose



*Fig 2 Pershore college photo, 1966*

bed, only to find it bloomed like never before the following summer! I started the year not knowing a rose from a daisy, but some of it stuck and, like many others, I completely lost my fear of Latin names thereafter. As a result, I remember that year at Pershore with affection and firmly believe that it had great benefits in landscape education which is irreplaceable.

The largest number of students at Pershore were on the 'general course' which aimed to give a good grounding for more or less any avenue in horticulture. Also there was the 'nursery course' which attracted several youngsters from successful nursery families around the country. That had a small number of students, several of whom (as well as people on the general course) we struck up friendships with.

Partly as a result of that, but mainly due to great diligence amongst tutors, we benefitted from frequent visits to places and events of significance to our new world. As well as the tedium of 'early morning duty' (I managed to fell a young sapling in the arboretum with

an Allen scythe one morning) we experienced grafting, ploughing and tending our individual 'plots' on the estate. Our knowledge of plants was frequently tested by 'idents' which were enthusiastically promoted by our course tutor who would wave pieces of plants at us expecting fast responses for their identification.

We also went all over the place including as far as Cornwall and Malham Tarn (the college had its own Bedford minibus). I was very struck by the grandeur of the limestone pavement above Malham and was very glad to hear of its subsequent banning from exploitation. I am not really quite sure when we went there, but one of the best trips was to Batsford (near Moreton-in-Marsh). It is now a public arboretum and Maggie, my wife, and I have been there a number of times since. We had many design projects on 'live' sites countrywide, including one on Clee Hill, near the Welsh border, which we visited mid-winter in freezing conditions. On that occasion we had to work in teams of three: one to

shovel aside the snow, one to identify existing ground flora and one to note down findings with frozen fingers – very character building and probably not resulting in the most accurate of baseline surveys. Not all sites were like that though; come the summer we experienced old quarry workings in the Cotswolds and shady woodlands, amongst others. That part of the experience was very educational and enjoyable.

And we larked about as well. One wet day we were left to our own devices in the studio, so responding to the ambiance of the college we occupied ourselves by concocting Latin names for ourselves. One wag named me *Gawniana super-confidens glabra* which I thought jolly clever, hence I've remembered it. Can't recall any of the others though, sorry.

Again showing our independence a few of us were in the habit of walking down into Pershore in the mornings for coffee or whatever. One day presumably after a heavy night's boozing we were walking through the student's car park when I noticed a little curl of

steam coming from the exhaust pipe of my car. That was strange because the keys were in my pocket, the car was locked, and the engine was idling quietly to itself! The explanation had to be that I had come back the night before from the pub and removed the keys from the ignition without turning off (you could in those days) then locked the car and gone to bed. So I jumped in the car, revved it up a few times, then switched off. Amazingly no harm appeared to have been done, but a couple of gallons of petrol had been wasted!

At that time semi-mature tree planting was getting under way and during our stay at Pershore we were introduced to the alternative methods then available. This involved attendance at planting demonstrations at various locations including Basingstoke and as far as the North-East. To even things up a bit, a large birch was transplanted in front of the college supposedly as a feature. It nearly died several times, and I subsequently learned that large birch do not transplant well – but no-one apparently knew that at the time. Since then I've always planted birch

small, and if you do so they almost always survive providing they don't dry out in the first year or so.

Because I had a car I often followed the minibus all over the place. On one such occasion I was dutifully following the Bedford when one of my female friends in the back cried out "Oh look, piggies" – so I did. The van in front stopped suddenly, I swerved out and missed it. Ever so fortunately nothing was coming the other way. I can't remember anything else about that trip – where we were going; or why; or anything at all – it's all a blank to me!

We also went to Dartmoor (not the prison – although from the remoteness of the place we could see why it was chosen). As part of ecological studies we were made aware of the influence of grazing upon pristine habitats. One place this could be amply demonstrated was an SSSI, Wistman's Wood, a few miles off the road – requiring quite a hike to reach. It was well worth it,

though; I have never forgotten how exotic natural vegetation can be in the UK when it's left to its own devices.

While we were at Pershore I also learned that I had an aptitude which was – as mysterious as it was useful – for dowsing. A friend from another course could practise it and showed me how. I have found it useful in subsequent life but quite inexplicable. It proved itself useful since I could use it for discovering the precise location of pipes or cables underground using just a couple of pieces of welding rod (so I would always carry them with me in the car). I have heard that some people can tell the sex of an unborn child in the womb, but my skills only extend to pipes and cables!

During the early part of the summer term one thing occurred which had a long lasting and influential effect on me – my father suffered a heart attack. He survived it but was severely incapacitated. Ever since I was a baby,



Fig 3 Batsford Arboretum



Fig 4 Inside Wistman's Wood, Dartmoor, showing the effect of excluding grazing

Dad was subject to bouts of ‘heart pain’ (after his first heart attack) which we all learned to live with, and for my part I have to admit I largely disregarded. Even though this was an exceptional event, the fact he came home and was apparently recuperating well, meant that I really didn’t appreciate how sick he was. I went back to college and completed the year regardless.

Between the first and second years I took employment during the vacation in the Town Development Division of the GLC (Greater London Council). Between the second and third years (at the end of Pershore) I went back there. At that time the GLC was trying to encourage outward migration of its tenants from London to certain ‘expanded’ towns (largely in the South) by designing and building new communities. I was hauled in to assist with several of these schemes; and then I was given sole responsibility for the landscape design of an old folks’ development (Thetford Reserved Site). It was a great honour and I must say I took it very seriously. I went back to

look at it a few years later to see how it was developing – but I am sad to say I haven’t been back since. The budget was £30.00 per house – even at that time little enough; no wonder I was given the job!

I must say I really enjoyed being at Pershore – it probably stands out in my mind as being the best time of my college life (although the Cheltenham years themselves were a pretty close second). Although at the time it felt much more institutionalised than the art college at Cheltenham (and of course it was) I was conscious that my rate of learning there was pretty intensive. Both places, though, introduced one to aspects of life and environment which at the time were new and alien.

In the third year it was a return to the ‘big city’ of Cheltenham. We were not housed in the Pump Rooms however – this year in contrast we were in prefabricated (Terrapin) huts tacked on to the art college, on Albert Road, Pittville. They were cold and damp in winter – heating was provided by a single stove in each building. This

meant that any paper left on drawing boards overnight was a different size next day (not a good thing if one was tackling scale drawings!). We were given a range of design programmes to execute. I can’t remember any of them in detail – the main thing I can recall, however, is during one crit (critique) our course tutor said “Well, Peter, this shows you know what landscape architecture is all about”. Sadly, I didn’t know what he was talking about; nor do I have any recollection of the programme either!

On return to Cheltenham I needed to find somewhere to live. I didn’t fancy going into digs again, and the idea of sharing a flat didn’t appeal, so I ended up in a hotel. Sounds very grand, doesn’t it? In fact it was a bit of an elephants’ graveyard. The residents in the main were quite elderly and I think the owners were keen to have two or three students there for much of the year since it served to break the monotony! Apart from us the main excitement was provided by Irish bookies during Gold Cup week and at other race meetings. Anyway, I had a room in the basement with a barred window looking up and out to the underside of cars in the car park! The food however was good. The main thing was that one could come and go to suit yourself. And it was cheap – £3.10.00 (£3.50) a week B&B and evening meal; and an extra £1.00.00 full board (for two days) if you stayed at weekends.

The proprietors were very good to me, since my father was re-admitted to hospital and died in early December that year. I can recall one of the last things he said to me was that his specialist had told him something like: “Sorry, Ted, I can’t give you a new heart”. A year later Dr Christian Barnard performed the world’s first transplant – that hit home, I can tell you.

At the end of the third year I didn’t

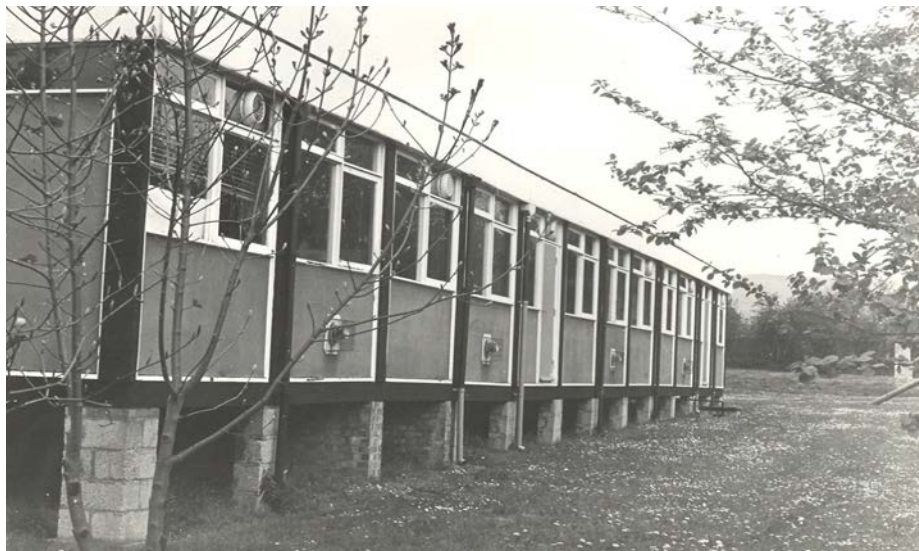
go back to the GLC for holiday work. Instead, a pal and I secured employment with Nottinghamshire County Council in their landscape department to undertake a ZVI (Zone of Visual Influence) study of all the power stations along the River Trent – otherwise known as ‘Trent Valley – Power Alley’. We spent most of our time in the car, driving around and noting down where power stations could and could not be seen from. Then we transferred our data on to a large map which stretched up the wall and part way over the office ceiling. What possible use it could be in that format totally defeats me!

Then the fourth year came along (this time we were housed in more prefabs slightly divorced from the main art college). We still had lectures of course but this time we were expected to undertake a research thesis and a design thesis. For the latter I chose a site at Upton-on-Severn (in an abandoned clay pit) which is about 25 miles from Cheltenham. Unfortunately that year the country was hit by an outbreak of foot and mouth disease, so travelling around and access to rural locations was severely restricted. My site was no exception, but since it was to be a proposed marina I was able to sit outside a pub on the opposite side of the River Severn and make up relative levels using the water as my datum. No-one could argue with that; top marks for initiative! I’ve been back once since – it’s a marina now, but nothing like the one I envisaged!

Actually, the end of the final year was quite stressful, but I qualified with a diploma in landscape architecture. After college I deserved a rest before looking for ‘proper’ work!

## Biography

*Peter Gawn was a landscape architecture student from 1964 to 1968*



*Fig 5 Campus prefabricated terrapin accommodation for landscape studies*

# CHELTENHAM COURSE NEWS

## RHS Tatton Park July 2023 student successes

Our third year students have achieved commendable awards in the 'long borders' design competition this year. The brief offered "an exciting opportunity for designers, gardeners and horticultural students to showcase their creativity, inspire visitors and earn a prestigious RHS medal." The design specifications were strict, 7 x 2m dimensions, plant material kept to below 2m except

trees, and the border planting needed to be viewed from all sides. The design theme was 'sensory' as manifested in plants chosen, specific features, sculptures, shapes, scents, textures or tastes. Below are our five winning entries; web link: <https://www.rhs.org.uk/shows-events/rhs-flower-show-tatton-park/news/2023/sensory-long-borders-tatton>

### **A Pocket of Peace – designed by Daniel March, Hallie Abbott Trangmar and Adam Rowley – awarded Gold medal and winner of Best Long Border**

Modern tech inhibits our interaction with nature, portrayed in this border with its three large wooden screens, representing the dominance of technology. Planting is serene, with shrubs, bamboo and perennials such as *Senecio candidans* and *Colocasia esculenta* 'Black Magic' chosen for their contrasting foliage shapes and textures.



### **Staying in Touch with the Garden – designed by Shereen Din, Imogen Reeves and Sarah Marsh – awarded Silver-Gilt medal**

An abacus trail weaving between tactile, edible and scented edging plants provides an activity for youngsters and inspires all generations to explore the border together – nurturing family relationships, and helping children's cognitive development.



### **The Garden of Vivacity – designed by Anne Watson, Caitlin Lewis and Una Nolan – awarded Gold medal**

Meandering through the border, a dynamic ribbon-like instalment of steel posts creates a sculptural statement. This structure provides a backdrop to the vibrant hot tones of the planting palette, ensuring a strong contrast.



### **Coastal Whisper – designed by Mia Thompstone, Joseph Parker and Henry Monnington – awarded Silver-Gilt medal**

The border captures the sensory experience of a trip to the seaside: the soft touch of grasses through fingers; the whispering of sea breeze through dunes; the sight of coastal favourites; sea thrift, sanguisorba and marram grass (*Ammophila arenaria*).



### **Forager's Haven – designed by David Cockburn and James Hill, Sponsors: K Hill & Partners, Cotswold Landscape Construction, Wyevale Nurseries, Lewie's Fabrication and Creation – awarded Silver-Gilt medal**

The border contains wildflowers that attract bees and birds; fragrant herbs; soft grasses; and plenty of edibles, such as mushrooms and raspberries to forage. It also offers striking laser-cut corten steel panels and sculptures for contrast.



# OBITUARY John Bennett

We are sad to report the recent death of John Bennett, formerly our horticultural technician who retired a few years ago. He came to GlosCAT, predecessor college to the university, at Oxstalls campus in the mid 1980s to lend support to the planting design teaching and develop external plant collections. He had previously worked at Jodrell Bank and locally in Pershore. The move to FCH campus in the 1990s enabled him to create an extensive teaching garden there, but staff and students will remember him most for his enthusiastic involvement in plant identification and soft landscaping advice for various design projects. He was ever-present, always cheerful and with wide interests, notably music. He was also at the forefront of computer introduction to landscape architecture, an advocate of CAD but especially plant selection programs, particularly

*Helios* for which he provided many images. He helped develop the related technology of video recording of student proposals for urban design problems by using sophisticated physical models and close-up camera work. In 2011 he helped organise the 50th anniversary celebration of the landscape course, a course which is ever grateful for his contribution during periods of degree accreditation, modular restructuring and university aspiration. He will be remembered most for the practical help given willingly to students learning about plant species and horticultural applications. Outside of university, John was a traveller and musician. He visited many countries notably USA and Egypt. He enjoyed popular music, could play the guitar and helped me run a student music club in the 1990s.

*Bob Moore*

*John's legacy: a selection of photos at various dates showing the FCH teaching garden with its more than 1000 'landscape-approved' species for student use.*





# INFORMATION FOR CONTRIBUTORS

LANDSCAPE ISSUES publishes articles and reports on aspects of landscape architecture and landscape education. Typescripts in normal Word format (or simple text) should be emailed to the editor with the title of the paper together with the name(s) and any affiliation(s) of the author(s). A high scholarly standard is expected and normal conventions for references, illustrations etc should be followed. Illustrations should be in jpg format. If the file sizes are too large to email, contact us to arrange an alternative method. We are particularly keen to promote student research. Reviews of books, conferences, exhibitions are also invited.

Although there is no strict limitation on the length of articles, 2000-5000 words are preferred. Reports are generally not as long and can cover matters of topical interest, short research projects, implemented designs ('practice as research') or seminars. Illustrations are welcome: diagrams should be neat and clear; (digital) photographs should be at a suitable resolution for publication (300 dpi). Copyright is held by the authors of all work submitted. Any views expressed are theirs.

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