Multidisciplinary

Challenges of integrating sustainable landscape planning into urban upgrading of historic city centres

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Abstract

Urban upgrading is common in historic city centres. The participation of landscape architects in upgrading effort of the city centre throws up more challenges due to their peculiar nature. This study set out to identify the challenges that face designers in sustainable landscape planning for urban upgrading of historic city centres. Historic city centres attract upgrading because they are the older part of the urban setting and are prone to sprawl, congestion, property fragmentation, slum proliferation and degeneration. The need to bring sustainability into landscape planning for such areas requires more effort from landscape architects bearing in mind that landscape planning is just a part of the general upgrade planning which requires the input of residents, government, stakeholders, facilitators and technocrats. This study is based on literature and was conducted by topic-mining in the Science Citations Index (SCI) and Social Studies Citations Index (SSCI) in Web of Science citations. The major findings and conclusions from the search topics were streamlined to arrive at the best intersections of the problems of urban upgrading in historic city centres and the peculiarity of sustainable landscape planning. The study identified loss of urban heritage values, lack of inclusiveness, gentrification and diminished socio-cultural legacy as the major problems of past urban upgrade programmes in historic city centres. It also identified the need to encourage bio-diversity, resilience and socio-ecological balance even within the appeal of aesthetics as vital to sustainable landscape planning. It concluded that creating awareness among all participants of the upgrade process and freeing-up outdoor space are vital to integrating sustainable landscape planning into urban upgrading of historic city centres.

Keywords: bio-diversity; ecological balance; heritage preservation; inclusiveness; social-ecology; sprawl development

1. Introduction

Current global issues like climate change, conservation, urbanization and sustainability have permeated all fields of academic pursuit including urban upgrading and central city landscape architecture which come under urban studies. Urban studies offer a lot of researchable constituents that are very relevant to current global issues and are veritable platforms for cross-pollination of fields like economics, public health, environmental studies, sociology and logistics. The essence of urban landscape planning on the first hand is spatial technocracy and material assignment which is evident in the character of private and urban open spaces. Materials, finishes and services are just tools that architects use as space technocrats to address the programme (Asim and Venu, 2018) [6]. Urban upgrading on the other hand is the combination of the physical, social, economic, organizational, and environmental improvements undertaken cooperatively among the government, citizens, community groups, businesses and locals in areas that have witnessed degeneration in the urban sphere. Urban upgrades in systems engineering are designed improvements on one or more of the urban systems to increase efficiency and promote a better environment within the urban setting.

Urban landscapes provide a platform for nature and people to interact acutely within the built-up city. A deeper understanding of these interactions in a spatially explicit way offers the necessary correlation with the global concept of sustainability (Heymans *et al*., 2019) [22]. The use of landscape can also be deployed to develop and define an interface between culture and nature thus providing a holistic inroad into city-centre sustainability (Sharifi *et al*., 2021) [42]. Urban studies are thus becoming more assertive in projecting landscape architecture and the benefits it can render into higher levels of relevance in urban planning and design (Wu, 2019) [48]. Landscape architecture and planning is vital to human-nature integration in contemporary urban planning. It is a platform for trans-disciplinary interaction of different professions that reach far beyond the landscape designers (Sharifi *et al*., 2021) [42]. Planning essentially exists behind any product or action. While landscape planning is an endeavor that should be integrated into the general ambit of urban planning that precedes the construction of the city, sustainable landscape planning goes further into the realms of dynamic balance between the outcome of the tangible aspects of the planned outdoor environment and ecological principles within the socio-cultural setting (Zhou, 2021) [51]. Since the onset of the concept of sustainability, the designer has evolved from a technocrat to a facilitator (Gibbons *et al*., 2018) [21], driving learning-based approaches to evolving designs that are participatory, socio-ecologically contextual and efficient in energy conservation.

The historic city centre is central to urban existence in many ramifications (Diaz-Parra & Jover, 2021) [14]. Most cities start off from a point with a rallying entity that promotes the social cohesion for the initial settlers. The dwelling of a ruler, a market, a town square or meeting place and religious location

for worship are some of the socio-spatial entities that bring about cohesion and urban growth to eventually develop the settlements into full-fledged cities. Cities grow radially from these centres and generally align with established theories of urban growth like the concentric circle and sector theories of urban growth in unicentric cities and multi-nucleic theory in multi-centric cities (Oyugi, 2019) [35]. The historic centres are thus central geographically and socio-culturally. Other attributes of the historic centres are organic development, congestion and subsequent degeneration.

The primary ingredient that determines the institution of urban upgrading is the socio-spatial dysfunctionalism in parts of the city. Land Economics will determine which part of the city gets upgraded (Munneke & Womack, 2015) [34] as most governments will not spend money on upgrades where the land has low value. It is only in areas where land has a very high value that adequate returns on the investment are guaranteed. The Historical Theory of Urban Form focusses on the city centre for higher land values. In contemporary city forms, high land values also exist in other parts of the city that are well organized and serviced but such areas have their value because of their functionality and do not need urban upgrading. The historic city core is more likely to possess the necessary conditions that will attract urban upgrades. Other areas may also get upgraded to balance political decisions (Mehanna and Mehanna, 2019) [31].

2. Literature review

The items of literature reviewed for the study are the recently published articles on urban upgrades, nature of historic city centres, urban upgrades in historic city centres and sustainable landscape planning. Selected articles that were published since 2012 with preference for those published since 2018 were scrutinized for relevance to the subject matter. The focus of the review was to determine the direction of critical thinking in the planning and execution of urban upgrades in the historic city centres and how sustainable landscape planning can fit into the paradigm. The next step was to critically look at the nature of the historic city centres, the trend in their evolution and how they can limit the execution of sustainable landscape planning if they are to be upgraded.

2.1 Urban upgrades in historic city centres

Postulations and authors' positions on urban upgrades of historic city centres dwell a lot on their preservation. It has always a debate on whether to adopt for preservation or renovation. Historical consciousness in most authors and the artistic value that is inherent in cultural heritage has favoured heritage preservation in most articles (Lai and Lorne, 2019) [27]. Writers tend to romanticize monumentalism and aestheticism The historic centre is viewed more as a monument that should be preserved with the resident population as urban upgrades tend to cast them out. Guidelines for rehabilitation and preservation of urban settings with heritage value are always being proposed for developing countries (Mehr, 2019) [32] with urban tourism as a focus that can be achieved by the cultural preservation of historic legacies (F. A. Adenaike *et al*., 2022) [2]. The declaration of "blight" and subsequent demolition and rebuilding of Flint, Michigan in the USA is viewed as a creation of an acute social problem rather than a solution because there was no attempt at preservation.

Literature proposes several guidelines for achieving urban upgrades in historic city centres without diminishing social fabric of the neighbourhoods and the heritage values areas (Knippschild and Zöllter, 2021) [26]. Writers have also labelled the preservation of urban heritage in upgrade programmes "sustainable urban regeneration" (Song *et al*., 2020) [44]. Generally, authors from China and most of Southeast Asia discuss monumental structures and historical artefacts in the way of urban upgrades (Mehr, 2019) [32] while literature from the Americas discuss mostly the social fabric and communal cohesion of downtown areas that are destroyed by city upgrade schemes (Jamal, 2018) [24].

In the evolution of cities, centrality of the historic city centre transcends the physical. The historic centre or core of the city is a focus for the administration, the culture, the history, commerce and almost all the physical and esoteric aspects of the city. This makes the centre a focus of activities including urban regeneration efforts. These efforts may not acknowledge the intrinsic interests of the city centre as stakeholders pursue personal interests. In 2007, the European Union promulgated the "Leipzig Charter for Sustainable European Cities". It was the first international cooperation to save the historic city centres of Europe from continuous degeneration. The policies proposed inclusive participation with more sustainable approaches to the development and revitalization of the city centres. There is need for deeper understanding of the historic city centre to be able to apply such holistic revitalization efforts. Without this, the socio-cultural imbalances created by upgrading the centre may cause a collapse in the centrality of the historic centre (Lak, Gheitasi and Timothy, 2020) [28]. The heritage value of the city core can be tangible and intangible. While the tangible aspects of the heritage can be preserved just by recognizing the need for their preservation, the non-tangible values may elude the stakeholders. Upgrading of European city cores now enjoy better-integrated and more sustainable strategies. Encouraging higher levels of participation is central to this approach (Pérez *et al*., 2018) [38]. In many cases the concept of heritage may not be obvious since it means different things to different stakeholders. There may be a need to define "heritage" where preservation is being discussed in upgrading the city centre.

In South-East Asia, the rate of urbanization in the late 20th century was very rapid and went hand in hand with rapid industrialization. The scenario is quite different from what obtains in Western Europe and North America. At the forefront of the breakneck industrialization in Southeast Asia is China. The process gave rise to megacities with multiple city centres which harboured very serious environmental issues arising from the concentration of industries in the cities. The city cores also witnessed population explosions as low-income earners crowded the centres in slums to provide cheap labour for the factories. While the problems faced by the western city centres were mainly socio-economic (Pérez *et al*., 2018) [38], the

Southeast Asian countries have to contend with environmental issues and socio-ecological imbalances. Upgrading the city centres in such a circumstance may be more intrusive. Gentrification and population displacement are very common and were aimed at achieving urban sustainability by improving the environment.

In recent times, the various policies adopted by the different governments have been challenged by stakeholders who are clamouring for "urban conservation". At the heart of the urban conservation movement is the preservation of "historic quarters" in the city centres (Calle-vaquero and Yubero, 2017) [11]. In the early 2000s, the municipal government of Beijing drew up a series of policies to institute urban conservation in 25 historic city centres in the megacity (Liu, Wang and Wang, 2019) [30]. There were however arguments that the results exposed economic interests despite the inherent benefits of urban conservation (Adenaike *et al*., 2022) [3]. This was a result of the non-inclusiveness of the city upgrades process. When Nanluoguxiang (China) area revitalization project started in 2006, the residents of the neighborhood complained that no official notification was received l*et al*one consultation. The residents were upset about the loss of legacy despite the obvious government effort to preserve the heritage. A resident whose structure was partially demolished and renovated said "the soul is not there anymore" (Shin, 2010) [43]. The level of acceptance may be different if more stakeholders are carried along in the policy implementation processes (Pradel-Miquel, 2021) [37]. The need for preservation will always compete with renovation. While the modernization of the city centre can assist the municipal authorities to compete for people and footloose capital in the national economy, heritage preservation can encourage tourism and promote local entrepreneurship. Indigenous residents can have an economic advantage when the choice is made in favour of preservation. Heritage preservation is one of the identified urban development strategies in the building of tourist cities (Gala, La, Cardinale, Dongo and Ticona-Herrera, 2021) [19].

2.2 Sustainable landscape planning

Landscape planning within the ambits of sustainability should address the three basic indicators of sustainability which are economic, environmental and social. There are however several assessment indices that can be used to evaluate landscape planning to determine how compliant the designs are with respect to sustainability. Ecological Footprint, Green City Index and Environmental Performance (Voghera & Giudice, 2021) [47] are some of the assessment tools for determining compliance of landscape planning.

Literature on sustainable landscape planning have focused more on preserving the environment in countries where environmental degeneration and pollution are more evident. The American Society of Landscape Architects published sustainable design guidelines for members which include the following sections: Community Design: Climate change, green infrastructure, healthy and livable communities, resilient design, sustainable transportation, and sustainable urban development. In the third world where funding is a major issue for projects, there is some focus on the economic indicators for landscape planning. The cost of execution and maintenance are very relevant in the planning of landscape designs. In Malaysia, large amounts of public funds are used to maintain public parks annually. There are nevertheless, countless open spaces and parks that are degenerating and in disrepair. Being a tourist destination cost-efficiency has become very important in sustainable landscape planning for the area. This does not diminish the importance of the other aspects of sustainability in such countries but costs are hardly ever mentioned in the developed countries. The original thinking for economic sustainability is in support of the subsequent local economy rather than the cost of projects. Sustainable landscape planning should create designs that are responsive to the environment, re-generative and actively contribute to the development of healthy communities. It should sequester carbon, clean the water and air, restore habitats, increase energy efficiency and create tangible value through significant socio-economic and environmental benefits. Of note is the convergence of opinions that sustainable landscape planning must encourage bio-diversity, resilience and socio-ecological balance;

> *The concept of bio-diversity refers to the complex interactions and variability of ecosystems, genetic materials and living organisms which is being embraced by planners. The current applications focus on the left-over biological central-city habitats like wetlands and urban forests that can still be conserved and integrated into landscape planning* (Sonti *et al*., 2020) [45].
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> *Maintaining socio-ecological balance draws heavily on human-wellbeing, adaptation, non-equilibrium dynamics of interdependence of man and his environment, feedback loops and complex systems theory. Sustainable planning should highlight the relationship between human wellbeing and the surrounding ecosystems* (Huang *et al*., 2019) [23].
>
> *In planning, resilience was used to explain the ability of a system to return to equilibrium after disturbance. Current thinking which is more associated with non-equilibrium complex adaptive systems refers to resilience as ability to retain fundamental function and structure during disturbance by absorbing and adapting to change* (Pajouh, 2020) [13].

2.3 Trends in the nature of historic city centres

Apart from pre-planned cities which are often products of decongestion of older cities, most of the older cities of the world usually possess a historical core that is linked to the socio-cultural heritage of the original settlers. These sections of the urban settlements usually have informal beginnings and tend to require spatial re-organization over time to bring them up to modern standards for better integration of infrastructure and administration as urbanization proceeds. These historic city centres which naturally depict the space-based origin of the urban settlements are central to the existence and evolution of cities in many ramifications. There is a convergence of opinions among authors from different cultures on the natures of the historic city centres. Most them describe these centres as existing in an urban sprawl unless the trend is arrested. While sprawl can be used to explain a barrage of social, economic and

land-use variables, it is by definition, a development that is disorderly, unplanned and uncontrolled within the urban context (Bîrsănuc *et al*., 2019) [8]. Direct concomitants of urban sprawl are congestion, lack of outdoor space, soil sealing, land take, dysfunctionalism of urban infrastructure, poor penetration of municipal services and blight. The authors also describe the historic centres as possessing very high urban heritage values in many instances both in buildings and social culture (Calle-vaquero & Yubero, 2017) [11]. The discourse on historic city centres revolves more around regeneration, revitalisation, renewal, restructuring and redevelopment. All these concepts are subsumed in the body of urban upgrading. The historic city centres are always in need of urban upgrading. How do landscape architects participate in the process with sustainability?

3. Discussion

Sustainable landscape planning within urban upgrading is only possible if the upgrades are being planned within the ambits of sustainability. A review of literature on urban upgrades in historic city centres gives the positions of authors who have reported on previous upgrades challenges encountered. The subject matter of the reporting of the authors can be grouped into four clusters. They include gentrification, communal cohesion, heritage preservation and inclusiveness. By reviewing the materials, inferences can be made which will in turn help to generate guidelines for future upgrades sustainably. Table 1 gives a summary of views of writers on previous urban upgrades in historic city centres and the inferences from the reporting.

Table 1: Content review of citations from literature review for sustainable urban upgrades in historic city centres

S. N.	Citation	Author's focus	Inference
Gentrification			
1	(Zuk *et al*., 2018) [52]	The historic city core is a monument that should be preserved in totality with the poor people within as urban renewal will cast out the poor	Effort must be made to pre-empt subsequent gentrification after upgrading
2	(Boyle *et al*., 2018) [9]	Socio-economic vulnerability exposes the inhabitants of upgraded areas to gentrification, which can lead to loss of heritage forever	Urban upgrades make the poor within the city centre more vulnerable and ultimately lead to gentrification
Communal cohesion			
3	(Xu *et al*., 2019) [49]	Demolition and rebuilding of Flint, Michigan in the USA is viewed as a creation of an acute social problem rather than a solution	Urban upgrades can sometimes create acute social problems
4	(Jamal, 2018) [24]	Neighbourhood fabric and communal cohesion of downtown cities are destroyed by urban upgrade schemes	Slums and downtown areas usually loose communal cohesion after upgrading
5	(Knippschild and Zöllter, 2021) [26]	Upgrades in historic city centres should proceed without obliterating the heritage values in the centres and social fabric of the neighbourhoods	Social fabric of affected neighbourhoods must be studied with a view to preservation in the upgrade process
6	(Lak *et al*., 2020) [28]	A deeper understanding of the historic city centre is required. Without this, the socio- cultural imbalances created by upgrading the centre may cause a collapse in its centrality.	Centrality of the city centre is at risk once there is upgrading. Inherent functions of the area must be analysed before upgrading
Heritage preservation			
7	(Mehr, 2019) [32]	Historical artifacts and monumental structures are generally in the way of urban upgrades	Historical artefacts and monuments must be identified and documented before upgrading
8	Wang and Aoki, 2019 [30]	There may be a need to define "heritage" where preservation is being discussed in upgrading the city centre.	The heritage value of any entity is highly subjective
9	(Jones and Ponzini, 2018) [25]	When upgrades are affected and the buildings are renovated with their patrimonial values intact, the sense of identity in the socio-cultural spheres of the city is preserved	Preserving the heritage values of buildings during upgrades can help to retain social cohesion
10	(Lamarque and Walter, 2019) [29]	Madrid, Naples, Copenhagen, Barcelona and Rome are but a few cities that have the protection of building clusters during upgrades. Palaces and government houses that are symbolic and religious sites are also included	Buildings and clusters with high heritage value can be protected during upgrades for urban tourism
11	(Lai and Lorne, 2019) [27]	Safeguarding the patrimonial value of the building stock in urban regeneration is always challenging	The original value of buildings are vulnerable once upgrades occur
12	Tighe and Opelt 2016	"Loss of legacy" in urban morphology is a direct consequence of upgrades.	Urban upgrades can alter the morphological trends in the urban setting.
13	(Daly *et al*., 2021) [12]	Many old cities in Europe, the Middle East and Asia have enclaves that are denied modern infrastructure and municipal services to preserve the cultural heritage	Heritage preservation can sometimes involve a denial of modern amenities
14	Calciu, 2016	Urban fabric is preserved to a very large extent if modern infrastructure and services are kept out to retain the original outlook of the area during upgrades	Heritage preservation can sometimes involve denial of modern amenities

15	Shin, 2010 [43]	The socio-cultural outlook of an area is largely preserved with selective demolition and renovation. Fresh materials can be brought in to replace the ageing ones	Heritage preservation can sometimes involve denial of modern amenities
Inclusive planning			
16	(Riera Pérez, Laprise and Rey, 2018) [38]	Integrated strategies are being adopted for upgrading in Europe. Encouraging higher levels of participation is key to this approach	Applying integrated strategies in upgrading give better results
17	Pradel-Miquel, 2021 [37]	Non-inclusiveness in the city upgrade processes will eventually expose economic interests despite the inherent benefits of urban conservation	Inclusiveness in upgrade planning will reduce selfish and economic interests that normally accompany upgrades

Having analysed the excerpts from literature, a summary of guides for sustainable urban upgrades can be generated. The guides are aligned under the tripod of sustainability which are environmental, social and economic.

Table 2: Summary of guides for sustainable urban upgrades in historic city centres

SN	Category	Proposal
1	Environmental	Encourage bio-diversity and greening within the city centre
2	Social	Encourage inclusiveness and apply integrated strategies in planning map out and identify structures with heritage values and protect them during upgrades preserve the socio-cultural fabric of the area while upgrading
3	Economic	Strictly guard buildings and structures with heritage values from intrusions even if it means denying them some modern amenities

Sustainable landscape planning within the purview of sustainable urban upgrading derives its fundamentals via transcendence from the concept of sustainability. Figure 1 which is designed to explain this relationship also applies to all other areas of sustainable landscape planning even where urban upgrades are not the intent. Each of the constituents of sustainable landscape planning can be traced through sustainable urban upgrade to at least two of the three props of sustainability.

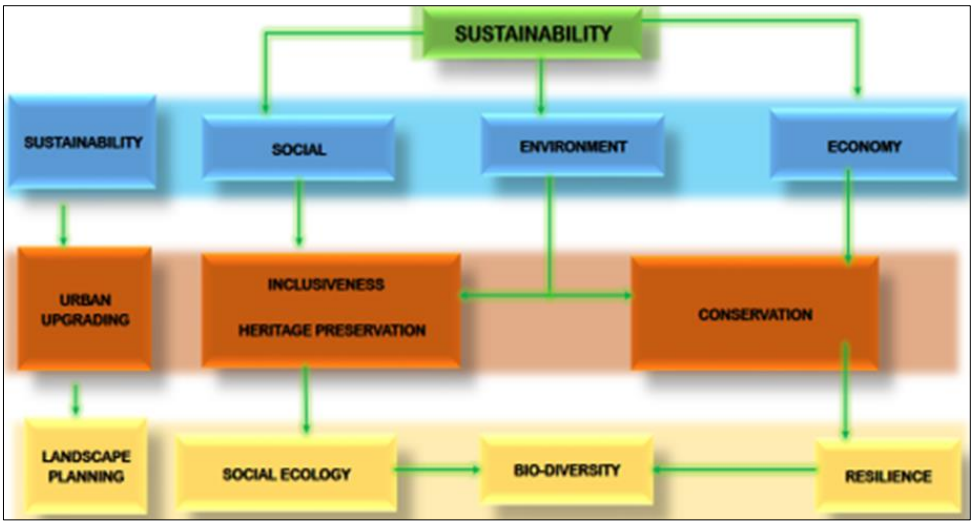

Fig 1: Transcendence from sustainability through urban upgrading to landscape planning

For the application within the historic city centres, limitations may appear due to the nature of the context and the hindrances that are traceable to human factors. The likely limitations are better reviewed from past experiences of cities that have attempted central city sustainable landscape planning within urban upgrades or as a step towards central city revitalisation. Table 3 is a summary of excerpts from literature on the challenges faced in the execution of sustainable landscape planning while upgrading historic city historic city centres in different countries.

Table 3: Challenges of sustainable landscape planning in different cities

S/n	Citation	Location	Challenges
1	(Ahmad *et al*., 2022)	Malaysian cities	Cost outlay; maintenance costs
2	(Athukorala *et al*., 2021)	Muthurajawela and Negombo, Sri Lanka	Uncontrolled urbarnisation infringing on space availability for landscape design
3	(Falaki & Nasidi, 2022)	Kano, Nigeria	Need to conserve and retain open spaces
4	(Al-Akkam, 2012)	Baghdad, Iraq	Heritage preservation is threatened

5	(Muminović *et al*., 2020)	Novi Pazar, Serbia	Competitive real estate market upstaging available land
6	(Ertan & Eğercioğlu, 2016)	Malaga and Kemeralti, Spain	Historic preservation is threatened; citizens participation lacking
7	(Steinberg, 2011) [46]	Asia general	Legislation required to curb public and private excesses to free up space
8	(Parajuli & Pojani, 2018)	Brisbane, Australia and Kathmandu Nepal	Opposition from residents and motorists; opposition from local merchants; cost recovery; access of delivery vehicles; management of alternative transport and parking; low enforcement; institutional and political resistance
9	(Gamberožić, 2019)	Ljubljana and Zagreb, Croatia	Personal interests of individuals with politicians to resist retrieval of acquired public spaces; encroachment of public spaces
10	(Farhan *et al*., 2021)	Al-Najaf Historical Cente, Iraq	Loss of heritage
11	(Zhai & Ng, 2013)	The Drum Tower Muslim District in Xi'an China	Protests by locals who were disenchanted by the outcomes

The identified challenges are centred on costs; threat of heritage loss; space availability; lack of supportive regulations; opposition from residents and other stakeholders; congestion and lack of inclusiveness. The high cost of execution and maintenance of central city landscapes can challenge the municipal authorities and sponsors to abandon the proposal at the planning stage or lead to neglect of the structures after construction (Ahmad *et al*., 2022) [4]. Sustainable landscape planning is synonymous with bio-diversity which involves greening and sometimes the introduction of wildlife havens in the city centre which is often congested and land-sealed. Such ventures are expensive and the costs are difficult to recover directly. The promotion of tourism and added value to the socio-ecological aspects to human life are concomitants that can make up for the immediate and subsequent expenses on the projects.

Heritage loss is very real in historic city centres. The architecture, communal settings, socio-cultural structure, public buildings, public open spaces and religious structures (Al-Akkam, 2012) [5] that tie the city to its past are more likely to situate in the historic city centre (Calle-vaquero & Yubero, 2017) [11]. Any uncontrolled attempt at upgrading the area will lead to heritage loss in one or more of the mentioned entities (Lai & Lorne, 2019) [27]. By carefully weighing the options, comparing opportunity costs and controlling design, heritage loss can be minimized during sustainable landscape planning. Careful planning can also bring about a better level of socio-ecological existence for the residents but this must be well integrated into the existing socio-cultural blend to avoid resistance and protests after execution.

The tendency towards sprawl development in the historic city centres encourages congestion and very strong competition for space. Traditionally, landscape architecture was mostly practiced on outdoor spaces. Without outdoor spaces, existing structures may need to be pulled down to create conducive settings for conducive landscape planning. Speculation in the city centre will rather have individuals infringe on public space and resist ceding private space for overriding public benefit. Soil sealing also exists in the congested historic city centre acutely infringing on the resilience and bio-ecology.

Impermeabilization of soils in the urban centres used to be a sanitary measure for public health. Over time, the environmental problems accruing from it have become very visible. Rapid urbanization and the need to maximize space use in the city centres have led to massive waterproofing to create roads, pavements and drains (Rodríguez-Rojas & Grindlay Moreno, 2022) [39]. The downstream effects are protraction of heat islands, saturation of waste water treatments, contamination of receiving waters, overwhelmed sewerage and more frequent flooding.

Fig 2

A central Madrid neighbourhood, Spain. Congestion with sealed soil exposes the historic city centre to heat islands and extreme drainage challenges. Sustainable landscape designs are difficult within such a context. Encouraging green roofs, continuous canopies, pergolas and higher level greening like suspended planting have been used to achieve bio-diversity in

congested areas in some cities (Gibbons *et al*., 2018) [21]. While such measures encourage conservation and improve the health of the central city dwellers (Heymans *et al*., 2019) [22], they may not come within the purview of landscape architecture. It may be necessary to make the central city land occupiers yield to the demands of a better environment and cede portions of their property to sustainable landscape planning.

There is need to have supportive regulations for sustainable landscape planning in the historic city centres (Steinberg, 2011) [46]. They are needed to restrict encroachment on public spaces, acquire more space for public use from individuals, protect the structures planned for the area from overuse or abuse and institute continuity for development. Such legislations can offer official incentives to individuals and groups for cooperating with the authorities in sustainable landscape planning or whip them into line for the general good of the people and the environment. Executing "eminent domain" has been used in the past to forcefully acquire land from occupiers of blighted areas of city cores for redevelopment. Supportive legislations will also forestall subsequent litigation on the activities proposed in sustainable landscape planning.

Having the whole community fall in line with a public initiative like sustainable landscape planning for historic city centres borders on the impossible. There will always be dissenters to any public project. Where the percentage of the dissenting voices gets very high, it becomes a problem. Even where dissenters are few but possess a strong foothold in the community, serious challenges confront the executors. Urban upgrade programmes have initiated gentrification in some historic city centres in the past. The vulnerable population will always fight upgrade programmes if they suspect heavy losses on their part will follow the programmes. Protests also follow upgrade programmes that have adversely affected local economy and lifestyle (Munneke & Womack, 2015) [34]. Opposition from residents and other stakeholders can be controlled through inclusive planning and negotiations at first. Legislations should then be used to establish the outcomes of the negotiations and define the standings of those involved.

Congestion which is an attribute of sprawl development is common in historic city centres (Rubiera-Morollon & Garrido-Yserte, 2020) [40]. An objective of sustainable landscape planning in urban upgrading of the city core should be to arrest and possibly reverse congestion. Congestion is a problem for sustainable landscape planning because it limits outdoor space that would have otherwise been available for elements that can improve human wellbeing. Congestion will ultimately progress into blight (Dimuna & Omatsone, 2010) [15] where it is not arrested or reversed. The social-spatial problems that come with blight are usually intransigent making forced eviction inevitable in many instances of central city urban upgrade (Adekola *et al*., 2019) [1] which may lead to public dissent. Land recovery from occupiers is a necessary step for executing sustainable landscape planning in congested historic city centres. There may however be a need to compensate legal occupiers to avoid dissent and subsequent litigation.

Top-bottom approach in planning and execution of projects that involve professionals is the norm since specialisation is now being heavily encouraged (Semeraro *et al*., 2020) [41]. This approach breeds non-inclusiveness as non-specialists are relegated in the processes. Sustainable landscape planning being interdisciplinary may embrace different professionals in its operations but falls short of the robust inclusiveness that can improve its outcomes (Calderon & Butler, 2020) [10]. In sustainable landscape planning for historic city centres, the bottom is inadvertently the residents who by their location stand to be the first beneficiaries of the process. They also stand as the first group of people to be afflicted by the negative fallouts of the process. Current thinking in inclusiveness demands that nobody should be left out in social programmes. Efforts must be made to seek the opinion of everyone that is likely to be connected to or affected by the planning and execution of the programmes, even those that exist in the lower rungs of the society and wield very little influence.

Having identified these challenges, a rational step forward is to proffer mitigating steps that can minimize their presentations so that sustainable landscape planning can easily be integrated into urban upgrades in historic city centres. The challenges can be organized into two distinct groups; those that occur by virtue of the nature and structure of the historic city centres and those that occur due to conscious human decisions that impact on the predisposition of the centres to upgrading with sustainable landscape architecture. The first cluster are direct concomitants of the evolution of the historic city centres. They include congestion and non-availability of outdoor space. These presentations are very formidable and cannot be resolved without adopting very obtrusive measures. Indirect means of changing the structure and nature of the centres will involve some sort of proselytization to win the residents and stakeholders who are responsible for the congestion and urban infill over to the sustainability school of thought and have them cede portions of their property to the cause. This position is too far-fetched to be presented as a plausible proposal. It is much easier to forcibly acquire the necessary space from the occupiers. If a strong case can be made for freeing-up outdoor space needed for upgrading with sustainable landscape elements, the authorities should find the necessary means to do so. The second cluster of challenges are those that have the human factor. They are threat of heritage loss, lack of supportive regulations, opposition from residents and other stakeholders, and lack of inclusiveness. These presentations are direct and sometimes distant effects of human decisions. They can all change if there are changes in how those involve perceive and relate to their environment. Legislations can also be put in place to prevent people from actions that can debar the ultimate goal of encouraging sustainable landscape planning for urban upgrading. A better way to reduce these challenges from human factor is to increase awareness on the subject matter. Awareness of the nature of the historic centres and the contributing factors, the need for urban upgrading in the historic centres, benefits of sustainable landscape planning and the mentioned challenges will change the disposition of the professionals, residents and stakeholders towards the environment. Property owners can contribute in their own little

ways by creating green courtyards in their buildings and planting shade trees within the pavement. The landscape architects and other professionals should become real facilitators as they encourage every other person relating to the environment to key into the concept of sustainable landscape planning as they upgrade the historic centres.

4. Conclusion

Sustainability is a concept that has permeated the social sciences and environmental studies since the late 1980s. Urban studies with the interrelated fields in engineering and applications in core sciences have embraced sustainability in all its constituent fields making all professionals to appreciate the need to put other entities like the economy, the environment and the social culture in relevance as they proceed in individual fields of specialization. Sustainable landscape planning can occur in any instance where landscape architecture is required. In this study, a microcosm of urban studies which is urban upgrading is being explored using sustainable landscape planning as a tool for its implementation within the peculiar context of historic city centres. The study has revealed that the context has a lot of challenges awaiting landscape architects and planners who intend to join in urban upgrading for sustainability therein. These challenges are however not too difficult to overcome with critical thinking and prudent implementation. Moreover, the approach is of benefit to human well-being and environmental conservation. The topic should be better researched with a view to more robust promotion.

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