

## PAPER TITLE

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### Abstract

This research explored College Green as Public Open Space and the potential to have the *shared space* concept applied to it. College Green's interface between the built environment and transport mobility and its civic, economic and cultural values and limitations were studied in further detail. Public space quality criteria and the significance of link and place specific activities were established in this context. Furthermore, the evolution of *shared space* as a simplified streetscape scheme without modal segregation was researched. Its benefits and deficits were analysed through best practice examples.

The researcher applied a case study approach and obtained results from interviews, various observations, a pilot survey and an extensive literature review. In addition, field visits to successfully regenerated Public Open Space abroad were conducted.

The quality of public space in city centres, in Dublin in particular, is compromised by unsustainable transport mobility. College Green, due to its most central location and road layout, is characterised by dominant link-specific activities, which diminished place-specific activities. Contravening objectives for College Green's functions make it difficult to develop concrete solutions, which could act as a panacea to convert it into sustainable Public Open Space. A *shared space* application would enhance social interaction in College Green while improving transport safety and flow. However, a scheme for this location cannot be applied in isolation, but needs to become an integral part of a wider strategy for sustainable development in the Greater Dublin Area. Moreover, the responsible design team would need to be of a multi-disciplinary nature to include all relevant aspects. A Paradigm Shift towards a liveable city centre is required to overcome College Green's poor civic performance.

Research of public space quality criteria and *shared space* applied to the urban environment has the potential to add valuable information to the fields of sustainable urban development and sustainable transport mobility. Ideally, it should be pursued through practitioners and academics in an *action research* conduct.

## 1 THEORY

### 1.1 Research Objectives

College Green in the Dublin city centre has been selected as a case study area to determine **Public Open Space qualities** and **Shared Space potential**. A unique and prestigious space for the Irish capital, it is symptomatic for the interface of the built environment and transport mobility in Dublin. This work is not a panacea for College Green's range of contravening aspirations and visions. It is an appraisal of improvement potential for the public realm, where transport mobility and the built environment demand integrated solutions.

### 1.2 Hypothesis

Public Open Space comprises all areas outside buildings, which are publicly accessible. A deterioration of shared goods and space can only be prevented through technical and ethical solutions in tandem (Hardin 1968). The definition of public space varies widely. Urban planners refer to *Public Open Space* as zoning; urban sociologists use the term *Public Realm* while citizens define space for work, travel and recreation through multiple facets. Therefore, objectives for the function, use and design of space in the city are not only hugely complex, but also partly contravening. Civic measures such as ownership and responsibility

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for a space are juxtaposed against engineering facts of transport and land-use provision. This displays the interface of the built environment and transport mobility in its complexity. Public space in Ireland is dominated by motorised transport while physical space remains confined. Segregated, competitive use of limited areas has established highly contested space, where user qualities are compromised. A **Paradigm Shift** is needed for College Green towards integrative space sharing, as the traditional road segregation for transport modes does not serve all users equally and fairly.



## 2 LITERATURE REVIEW

**Public Open Space:** A civic evolution through communication in social and economic activities. These created *Civitas*, a vital combination of physical, social and sensual elements in the urban environment. **Accessibility, Density, Diversity and Distinctiveness** are identified as essential criteria for liveable streets. Our public realm requires careful treatment through **Urban Regeneration** to facilitate *'life between buildings'* (Gehl 2011). The dual function of public spaces to concurrently operate as *Link and Place* is the basis of Boujenko, Jones and Marshall's (2007) approach for sustainable urban planning and design. Carmona et al (2010) conclude that movement space for vehicles often annihilates social potential in public spaces.

**Sustainable Transport Development:** Shared Space related documents provide an overview of the varying understanding of the concept. Best practice examples were used to compare both, potentials and limits, for vulnerable road users in particular. Sustainable transport should be modelled for the compact city while re-allocating public space to pedestrians, cyclists and public transport, in accord not in competition (Banister 2005). Hamilton-Baillie (2008) refers to Shared Space as the default mode before the segregation of vehicles and pedestrians became the accepted approach to public space. The main principle is integration in contrast to segregation of functions and users within the urban landscape. **Shared Space concepts** include *Naked Streets*, deriving from Hans Mondermann's original idea of traffic management without signs and regulations for equally shared use by all modes (Shared Space Institute 2009); *Woonerfs*, designed in Dutch towns (Hamilton-Baillie 2008); *Home Zones* as the British/Irish equivalent (DFT 2007, Living Streets 2011); *Verkehrsberuhigter Bereich* in German residential streets (Walk21 2007). Dennis and Urry (2009) note that the *predict and provide* policy changed to a *predict and prevent* principle in the late 1970s. It coincided with the realisation that urban mobility problems couldn't be dealt with as traffic in isolation, but require a radical change in mobility patterns from motorised to non-motorised transport (Cox 2010, Geurs and van Wee 2003). Mees (2009) stresses land-use planning for higher urban density as the key to sustainable transport in order to overcome car-dependence and to promote walking and cycling as sustainable modes. Public transport, he argues, is only beneficial if accessible and well linked. Engwicht (2007) calls to reclaim urban streets as places for social action and refers to best practice examples in Europe. He concludes that suburban sprawl not only diminishes the viability of public transport and generates car-dependence, but also changes social exchange space to movement space while eroding communities, walking and cycling.

**College Green:** Dominant structures of national and cultural value coincide with pressures to perform as a major traffic hub. Proposals for College Green's public space quality and transport include public transport projects, traffic restrictions and land-use changes. DCT (2010) rate College Green as the ceremonial heart of Dublin and the stage for great public and national events. The Dublin City Development Plan 2011-2017 does not indicate 'Public Open Space' land-use zoning for College Green and only defines a *'Conservation Area'* (DCC 2011) while DCC's Draft Public Realm Strategy (2011) equally lacks a direct reference. A dense tramline network serviced College Green until the 1940s (Brady et al 2001).

Ireland's recent planning culture of suburban, low-density housing with car-dependency has contributed to Dublin's unviable public transport. Meanwhile, weak politicians and strong business opposition have obstructed LRT through the city centre (McDonald 2000). In 2006, DTO identified College Green's deficits and liaised with DCC to develop a strategy. Dublin Bus (2011) is aware of its various service problems in the city centre and is currently revising its routes, though any reference to the proposed Luas BXD (RPA 2010) is missing. College Green's future has been envisaged by TCD (2007), who proposed a pedestrianised square, serviced by LRT. DCT (2010) and An Taisce (2005) emphasise the space's grandiosity for cultural purposes and recommend a general de-cluttering. The conversion of the former Irish Parliament, owned by BOI, into a building for civic use, has been publicly discussed and a link between Forster Pl. South and Temple Bar was proposed by HHA in 2004.

**Policy:** Unsustainable transport patterns in city centres are targeted in EU and Irish policy, whereas explicit Shared Space reference only occurs in the UK document *Manual for Streets* (DfT 2007).

### 3 METHODOLOGY

**Research Strategy:** A case study approach was selected as the most suitable, feasible and ethical strategy to research College Green as Public Open Space and potentially a Shared Space. Findings are process-related and do not provide final solutions. Conclusions and recommendations cannot be simply transposed due to College Green's unique character with complex link and place functions. *Action Research* elements are applied to facilitate a proactive feedback loop between practitioners and academics in the field of Sustainable Urban Development.

**Research Methods:** Qualitative and quantitative data was obtained through **Semi-structured Interviews** with selected stakeholders for the planning, design and operation of Public Open Space and College Green; **Field Observations** in College Green, Italy, Netherlands and Germany, including traffic counts, walking audits, noise tests and filming; official **Documents**, such as plans, drawings, reports and policies.

### 4 RESULTS DISCUSSION

**Understanding Public Open Space:** *Public Open Space* and *Public Realm* are interchangeable terms in urban planning while *Life between Buildings* rather refers to the urban design approach of the built environment. Public Open Space needs to be assessed in its social, economic and civic function as well as its stationary and transit use. **Density, Diversity, Distinctiveness** and **Accessibility** are essential quality criteria for a public space strategy. *Street Performance Indicators* and an evaluation of *Protection, Comfort* and *Enjoyment* provide space-specific details. The vast majority of interviewees and all sourced literature state that large traffic volumes and congestion cause harm to the **Public Realm**: Loss of urban living space; Visual intrusion; Safety hazards for vulnerable street users; Severance and social seclusion; Loss of economic viability and competitiveness; Air and noise pollution; Waste of energy resources. The role of public realm requires further assessment of its social, economic and cultural purpose. Urban development should distinguish **Function - Use - Design** as public space parameters. Function determines use, which in turn determines design, a causal relationship, which most interviewees were less distinctive about. While spatial functions are determined within the urban planning phase, use and physical layout and materials are decided on in the urban design phase of an urban development project.

**Understanding Shared Space:** Planning consultants and transport experts conclude that the Shared Space concept is a simplified streetscape scheme, based on self-control and communication, which generates benefits for sustainable urban development. At the same time, they raise concerns as to whether it suits every society. The *Naked Street* approach in particular is criticised by various experts and interviewees, for being too extreme and for excluding vulnerable user groups. Shared Space creates a dynamic, unpredictable

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environment, which has been judged more critically than its reality with less accidents and increased flow. The concept of sharing public space in cities between different transport modes bears **Potentials and Limitations**. It appears to contradict modern conventions of efficient mobility, where spatial separation is required to allow fast, safe transport for all modes. Hamilton-Baillie (2008) argues that the principles of Shared Space resemble the default mode of public space use, before separation of vehicles and pedestrians became accepted and established through traffic regulations. Shared Space creates a culture of self-control and communication instead of rules and restrictions, states the Shared Space Institute (2009). Shared Space reverses city roads to urban streets. Responsible behaviour, caused by natural alertness, generates higher safety and quality standards in public streets. *Drachten* Town Council claim that Shared Space could be applied successfully anywhere, regardless cultural, geographical settings, because it is based on common sense rather than regulation. It remains to be seen, if certain busier streets with strong link functionality will operate better as *Skinny Streets* with minimal lane width than as *Naked Streets*. Equally, it is unclear, if *Home Zones* provide the adequate setting to test Shared Space suitability. **Best Practice Examples** for public spaces other than *Home Zones* are still considerably rare in Ireland/UK. Local authorities in countries such as Netherlands, Denmark, Sweden and Germany have proven more confident and courageous in applying the Shared Space concept to urban, more trafficked situations. Acceptance for it is growing (NDA 2010), albeit facing opposition from vulnerable user groups (Walk21 2007). *Bologna's* traffic measures of *slow mobility* are tailored towards its sensitive and restricted urban fabric, whereas *Drachten* Town Council apply radical solutions to their *recyclable environment*.

**Understanding College Green:** The vast majority of interviewees rates College Green as a unique and culturally significant Public Open Space of outstanding value to Dublin and Ireland. Casey (2005) regards College Green as a “*grand and exhilarating public space, framed by the two major classical façades*” of TCD and BOI. McCullough (2007) emphasises the drastic impact that the *Wide Street Commission* had on defining College Green spatially and functionally, while DCT (2010) consider it Dublin’s heart and stage. More critical is McDonald (2000), who describes College Green as physically and socially isolated by inept political decisions for the city centre’s public transport. Wickham (2006) criticises the lack of *Civitas* and city centre definition. College Green as public space cannot be assessed in geographic isolation, because its traffic patterns are generated in the GDA, due to suburban sprawl, car-dependency and consequently, inefficient public transport. College Green is unique and significant for its very central location and its position at a junction between the main east-west and north-south city routes. These two characteristics were identified by most interviewees and determine its current identity as a thoroughfare and transport hub with amorphous perimeters, additionally blurred by incongruous landscaping and traffic volume. The structures and boundaries, which define College Green spatially, have not changed significantly since the *Wide Street Commission's* drastic interventions. What has changed dramatically is the volume and speed of private and public motorised traffic. According to historic images, College Green has always witnessed a combination of stationary and transit use, a trade off between **Link and Place** functionality. Adopting theory, if physical parameters have only changed marginally while traffic volume has increased significantly, conditions are not sustainable for a balanced built environment-transport mobility interface (Carmona et al 2010, Boujenko et al 2007). Local trade interviewees point out, that College Green was not built for the traffic volumes it accommodates and that tourism and business suffer from a link-oversupply and a place-undersupply. DCC and NTA interviewees explain College Green’s thoroughfare character mainly as a bottleneck configuration between TCD and Temple Bar, which cannot be improved easily because of the existing street grid and Liffey bridges. College Green’s link and place imbalance has been partly reversed by recent DCC traffic management measures, such as the HGV ban, the 30km/h speed limit and the bus corridor, which works in tandem with the *Inner Orbital Route* (DCC 2011). Observations and interview statements demonstrate that College Green fulfils social, economic and civic functions, all in a competitive manner, but none of these to its full potential. The imbalance towards transit use at the cost of stationary use makes College Green very link dominated

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with poor place quality. Interviewees and researched documents concede that the current situation is neither desirable nor feasible. A modified public place performance matrix, based on a *Link and Place Street Performance* analysis, forecasts relationships between modes and activities for three scenarios: **Strategy A** - Pedestrianisation for a Ceremonial Centre; **Strategy B** - Shared Space as *Naked Streets* with limited car access; **Strategy C** - Conventional modal segregation with *Skinny Streets* application. Strategy B appears to produce the majority of positive relationships while combining maximum link with maximum place activities. Strategy A creates the ideal pedestrian environment, but significant deficits for other modes, whereas Strategy C performs poorly with regard to mode volumes, safety and potential flow. It therefore appears reasonable to consider a Shared Space concept for College Green in order to reconcile aspired functions and desired activities. All three strategies foresee a high quality public use for the BOI building, a suggestion from most interviewees. **Stakeholders and Decision-Makers** pursue various interests and determine which steps could be taken to improve the quality of College Green. The majority of interviewees consider DCC responsible to initiate and steer processes for sustainable urban development in College Green. Views on public participation vary greatly, with campaigning groups and proprietors demanding more involvement than public authorities and service providers. Numerous voices wish TCD to play an active role. Laudable is DCC's initiative for a Public Realm Team of urban and transport planners to develop a programme, which would regenerate public space qualities for all user groups. Some interviewees raise reasonable concerns as to how democratic consent could be reached over such a contested location and if too many voices might dilute any momentum for improvements. IEN in particular, express the view that College Green is too important to receive experimental treatment.

## 5 CONCLUSIONS

**Public Open Space Quality:** Public realm determines urban life between buildings and it must fulfil certain functions in order to be used equitably by all citizens. As the understanding and appreciation of public space varies within stakeholder groups, specific quality criteria need to be defined and agreed. Density, diversity, distinctiveness and accessibility are basic requirements for a well-functioning urban environment. These criteria have to be assessed against location specific parameters to generate a vibrant, safe, comfortable, appealing, inclusive, permeable and linked community around the selected space. Equally important is the definition of function, use and design, ideally in this particular order, of any public space. If the aspired function of a street or square remains vague, then use is often ambiguous and design poor due to compromised ideas and non-reconciled interests. In case study comparison, it needs to be questioned, how easily a concept of one location can be transposed into another context and scale. Solutions, which might be suitable for a unique location such as College Green, cannot be simply adopted into policy, nor can they be transposed to other locations without modifications. A city's most apparent attraction derives from its Public Open Space, the realm which citizens and visitors alike, experience daily and directly. If public space qualities are diminished because the *Civitas*, the active citizenship for respectful and responsible conduct of urban life, is compromised, the city loses its social and economic hospitality. This aspect of urban economic competitiveness is crucial for any city's future - no less so for Dublin.

**Reconciling Competing Interests:** Many urban streets have become car-dominated roads, which impede other transport modes and social activities. All interviewees agree that College Green has been greatly affected by this tendency. Physically and functionally, Public Open Space is characterised by the interface of the built environment and transport mobility. Stationary use is undermined by transit use, which compromises sojourn qualities for the benefit of traffic flow. This imbalance between link and place specific activities needs to be rectified through sustainable urban and transport development in order to regenerate in particular city centres. Conventional transport planning strategies for fast and safe traffic need to be revised to reconcile the interests of mobility and the built environment. The objectives for a specific public space have to be established through public consultation, multi-disciplinary panels should be in continuous dialogue with all stakeholders while *Action Research* results should contribute towards valuable ideas. Improvement schemes, such as

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the Shared Space concept, would have to include the *Universal Design* requirements to allow equal access for all user groups without discrimination. Furthermore, initiatives to reclaim streets for social and cultural purposes should be supported if they prove beneficial to the community. The promotion of local businesses to generate active edges with ground floor activity could add significant potential to traffic dominated Public Open Space.

**Defining College Green:** College Green is historically a *Ceremonial Place* of cultural and architectural significance, which the Wide Street Commission converted into the distribution node of the city centre's main access streets. The structural curvatures of TCD and BOI contribute to the situation and make College Green appear less like a square with defined edges, such as other Georgian squares, but more like a passage, tailored for smooth traffic flow. Currently, College Green's **Link and Place** ratio is characterised by massive transport mobility from all modes, which it cannot accommodate because it was not designed to do so. High volumes of pedestrians are corralled into narrow footpaths while buses block each other's way. This entirely negates the essence of safe and efficient public transport. Furthermore, traffic management measures of a speed limit and bus corridor are neither obeyed by the users nor enforced by the authorities. It is envisaged that the proposed LRT would alleviate College Green's problem. The recently deferred Metro and DART Interconnector would contribute to a solution and would improve the location's public space qualities. Nonetheless, College Green's essential dilemma is not its transport provision; it is its lack of definition in Dublin's city centre. Which function, use and design do we envisage for College Green? How are stationary and transit use reconciled in College Green? What do we want College Green to be: cultural heart or transport hub; road, street or square; rather a link or a place? How much change in regulations, behaviour and physical layout are we willing and able to accept? Are we ready for a **Paradigm Shift**, which would deliver its most significant impact here - a space where so many aspirations and expectations culminate in one place of physical and historical importance to Dublin? Aspirations to turn College Green into a grand square of civic value with qualities for stationary activities remain futile if we continue to use it as a major transport thoroughfare, due to lack of suitable alternatives. Strategies to transform College Green into a high quality public space will not be successful, if targeted in isolation, without a sustainable transport strategy, which would expand beyond the city centre, targeting the Greater Dublin Area. Stakeholders and decision makers therefore need to work in accord on a City Centre master plan. **But is Shared Space suitable for College Green?** College Green's historic function as a city commons depended highly on a community, which agreed to respect and follow a set of self-policing rules rather than imposed legislation. The idea of self-imposed control and responsibility, based on the commons principle rather than regulations, relates directly to the Shared Space concept for transport mobility and the built environment. It deregulates traffic in a simplified streetscape scheme with integrated transport modes used for the benefit of all users and quality of life in attractive streets. As noted earlier, current regulations for traffic demand management in College Green, such as the bus corridor and speed limit are neither obeyed nor enforced and thus appear unsuccessful. Are less regulations and restrictions therefore an option for improving this Public Open Space? Could a Shared Space application trigger the required change for more social interaction, communication and responsible street-conduct and therefore improved public spaces? However, the mere application of Shared Space design elements to College Green without a comprehensive planning framework for the city centre would cause ambiguities at the fringes between conventional mode segregation and a simplified modal integration through a *Naked Street* layout. The success of selected scenario (Strategy B) also relies on: the integration of the proposed LRT lines Luas BXD and F; significantly reduced bus volumes and minimal routes passing through and terminating in College Green; a speed limit of ideally 20-25km/h; an underground metro stop to complete the public transport network at this most central location. The application of Shared Space to peripheral residential areas for *Home Zones*, such as Adamstown ignores the concept's potential to improve safety, comfort and efficiency in highly trafficked urban streets.

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**Sustainable Development:** Exploring the Shared Space concept lies within the disciplines of Sustainable Urban Development and Sustainable Transport Development. It is the subject of both, the built environment and transport mobility in cities. The interface of stationary use and transient use in the urban environment needs the attention it has lately received in planning authorities. Urban regeneration and the revitalisation of deficient city centres have become integral elements of development plans for compact cities with liveable streets. The need for cities with respect and responsibility for all user groups has brought attention to more unconventional traffic management concepts, which include more objectives beyond traffic flow and safety. Shared Space is based on the theory of communication and social interaction in Public Open Space for a sustainable urban environment: safe, comfortable, inviting, accessible, diverse and inclusive for all users groups. Considering Shared Space for spaces such as College Green is an incentive for the different planning disciplines to liaise and develop inter-disciplinary teams for integrated strategies. This approach would facilitate a thorough assessment of location specific circumstances and avoid implementing Shared Space in an experimental, inconsiderate manner. Initiatives by DCC and NTA to create multi-disciplinary teams such as the *Public Realm* team are laudable and recommended to planning authorities at all levels. Could responsible self-control in the use of our urban streets essentially replace existing over-regulation?



Ironic Street Signage

**Recommendations:** The potential of Shared Space application is currently only vaguely indicated in Sustainable Mobility **Policy**. Most reviewed documents have not adopted the concept and information remains dispersed, as the development of this field appears to be in the initial stages. Shared Space as an option to improve Public Open Space would need to be further integrated into urban development strategies. Meanwhile, its research should be continued to produce more expertise on the concept's benefits and limits and to collect valuable information from experience with best-practice examples. **College Green** is characterised by serious transport problems. It requires a vision, which includes social, civic and economic objectives, for Dublin's city centre and the GDA, rather than a transport solution in isolation. Stakeholders, TCD and BOI in particular, should be asked to participate in the discourse and to develop due ownership of the space. The reconciliation between College Green's civic function and its transport function must become the core of any spatial strategy. Given that 50% of accidents in Dublin's City Centre involve pedestrians (RSA 2010), reducing these figures should be equally targeted. A phased improvement scheme is recommended, which would integrate the two proposed LRT lines (RPA 2010) and significantly reduce bus numbers and optimise lines through College Green. An audit of all existing features and infrastructure within College Green should be conducted to de-clutter the space and replace the incoherent layout with a suitable landscape design, which incorporates high quality detailing, appropriate materials, good lighting and noise attenuation. The speed limit and bus corridor are only effective with proper enforcement. Furthermore, weekend pedestrianisation, should be considered to generate public interest and ownership of civic activities while changing College Green's character from a *corridor* to a *living room*. A separate suitable approach would be the regeneration of Foster Place South, which indicates features and proportions for a high quality public space and could become the nucleus of a wider scheme within this location. Moreover, the government's plans to invest in a redesigned *Book of Kells* exhibition in TCD (DoT 2011) would offer a unique opportunity to regenerate College Green. Finally, the removal of the railing on the TCD and BOI buildings should be considered. They are not original and the overall spatial quality with desired façade accessibility would improve. **Further Research** should be conducted on citizens' perceptions of the *Heart of Dublin* should be conducted while also modelling College Green's physical qualities with LRT, regarding noise, clutter and spatial constraints.

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