Legible Greenways: Enhancing the Visual Coherence and Imageability of the Western Sydney Parklands

Catherine Evans and Linda Corkery
University of New South Wales, Australia
Landscape Architecture Program, Faculty of the Built Environment

1. Introduction

This paper reports on a studio-based project which developed and tested a framework for assessing the legibility of Western Sydney Parklands (WSP) in Australia and preparing proposals to enhance its visual coherence and imageability. Comprising 5280 contiguous hectares (over 13,000 acres) of public land and 27 km (about 17 miles) long, the WSP is a significant recreation resource and an important greenway corridor in the urban ecology of the Sydney basin. Despite its size, the WSP does not register in the mental maps of most Sydney residents, including many who live nearby. This is explained in part by the complex array of land uses within the WSP, the range of social and ecological values associated with it, and the generally weak legibility of the landform and its dispersed vegetation cover. Combined with the extraordinary amount of area the WSP covers, these factors contribute to the poor imageability of WSP in people's minds, and have led to a weak relationship between the parklands and its urban context.

The Western Sydney Parklands Trust faces a major challenge in making this significant greenway corridor more legible. Strategic planning for the WSP focuses on attracting increased visitation and use while at the same time distinguishing it from adjoining urban development. The current Plan of Management for the Parklands (the main instrument for directing design and development within the parkland) addresses the establishment of a cohesive image for the Parklands (WSPT 2010) as one of several objectives focused on improving recreation and parkland infrastructure. The image issue is a high priority for the WSP Trust and has led to several design-focused initiatives, including a design manual and a community art project.

A third and ongoing initiative is focused on developing design proposals to enhance the identity and awareness of the boundaries of the WSP. As a preliminary step in developing the brief for this initiative, a pilot study was undertaken in collaboration with the Landscape Architecture Program at the University of New South Wales. The study was structured as an interdisciplinary, elective studio in 2012 called 'Legible Landscapes,' which adopted a landscape-based approach to theories and concepts of legibility, coherence and experience to generate design proposals. This paper reports on the value and significance of the process and outcomes of this pilot project, for both the students and the WSPT. We reflect on and assess the relevance of the selected theoretical frameworks, and the relevance of employing the resultant 'blended' frameworks as a basis for increasing greenway visual coherence and imageability in the metropolitan context of Western Sydney.

2. Background

When set out over forty years ago, the WSP corridor occupied a broad swath of rural land uses located at the urban/suburban/rural fringe of greater Sydney. Today it sits like an island in the geographic heart of the metropolitan region, between suburban development to the east and small

rural land holdings to the west, its ridge line providing subtle relief from suburbs pressing the edges. The corridor was intended to accommodate utilitarian functions of a large city. Four decades of debate on how to use this land allowed for the regeneration of "threatened" and/or "endangered" vegetation communities (URS 2004) within it as well as the establishment of several large regional recreational facilities—including a baseball stadium, an equestrian center, and two car racing tracks.

The WSP is one of the largest contiguous landholdings in the Southern Hemisphere, and as an urban parkland it is complex, particularly in terms of land uses and program. Its strongest organizing landscape elements are the ecological 'spine' of the regenerated vegetation communities and a major portion of the Eastern Creek catchment. A prominent ridge line defines the southern sector of the corridor while the relatively new M7 motorway defines most of its western perimeter. The corridor contains a diversity of pre-existing land uses, mainly cleared agricultural lands, of various lots sizes and uses, an important aspect of the cultural landscape of the area's post-colonial era. There is also a city farm, market gardens, Prospect Reservoir, a historic source of Sydney's water; large scale landfill and brick making industries; race tracks and several venues developed for the 2000 Olympic Games. In addition, the corridor is intersected in all directions by major roads, water supply and energy infrastructure.

In addition to its diverse mix of program and large scale, the WSP has a long, narrow and irregular shape, and a high degree of road fragmentation, all of which conspire to prevent the parklands/greenway from becoming readily identifiable in Sydney's metropolitan landscape. In general, rather than responding to physiographic features, the corridor's irregular boundaries reflect historic patterns of landholding and road networks that have been subsumed into the greenway over time. In addition, the few distinctive landforms or areas of dense vegetation are highly localized. For example, the ridgeline in the southern section of the WSP potentially provides a strong visual backdrop and buffer to the surrounding development, but only at discrete viewing points. Instead, the greenway is viewed primarily from the roads that transect it or mark its edges, meaning that opportunities to view into the parklands or create a sense of arrival or destination are few and far between. This is further complicated by the fact that viewers travel at speeds of 60-120 km/hr (40-75 miles/hr) when driving around or through the corridor.

Corkery and Marshall's survey-based research carried out at various locations in or proximal to the WSP (2009, 45) confirmed that people in the area had little recognition of the WSP as an entity, even though they might be familiar with individual venues. Nor did they recognize the Parklands boundaries or were aware they were within the WSP corridor. For the WSP Trust, whose main focus is attracting people into the greenway to participate and develop an appreciation for its diverse resources and values, the fact that this Parklands does not register strongly in people's mental maps of western Sydney presents a major concern. In addition to generating local commitment to the Parklands, visitor numbers are also linked to capacity for income-generation, an increasingly serious concern for managers of large parklands.

The *Western Sydney Parklands Plan of Management 2020* addresses these concerns, but is based primarily on research into large parks—the Plan of Management does not reflect the diverse alternate conceptual frameworks for large urban landscapes, such as green infrastructure, landscape urbanism or greenways. Research that emerged concurrently with the PoM established

the value of recasting the WSP as a "greenway" rather than the more typical designation (in Australia) of "parklands" (XXXX, 2010 Masked for Blind Review). In this research, four keys to success for greenway implementation were identified: clear and varied objectives; a legible and meaningful context (including response to natural and cultural factors); effective institutional structures, and public involvement and use. A greenway approach was found to offer three main benefits for the WSP: it would highlight the role of these landscapes in the overall structure, form and flow of the metropolitan region; encourage consideration of the role of transport and recreational infrastructure as complementary rather than competitive, and offer opportunities for cultivating community awareness, involvement and ultimately stewardship of the parklands.

With the creation of the WSP Trust in 2008 and the gazettal of the Plan of Management in 2010, the institutional arrangements and objectives for the next decade are set. The state-legislated WSP Trust negotiates land acquisition and rezoning, and manages leases, design and planning. Most importantly, it has a mandate to be self-funding, and its strategic vision is highly focused on transforming the WSP into a recreational resource for the community.

The WSP Trust has worked quickly to encourage public involvement and use of the Parklands, and recently reported a 20% increase in visitation (WSPT 2012, 5). With institutional stability, strong management, and rising community involvement, one of the major remaining objectives for the WSPT, as a parkland/ greenway, is the articulation of a cohesive identity and strengthening legibility. As discussed earlier, the context, scale and form of the parklands present substantial challenges to these efforts. Recent initiatives to address this by the Trust include the publication of a Design Manual and the announcement of a Community Art Project; both are seen to be important contributions to enhancing awareness, cohesion and identity, but both are limited scope. The former is a typical design manual focused on ensuring consistent 'language' of site signage and furnishings; the latter, a community art billboard project that had a two month installation period.

Cognizant of these limitations, the WSP Trust is looking to undertake a longer term and more in-depth investigation to develop specific design proposals for improving the coherence of the Parkland edges. Because legibility and identity depend on the experience and perception of the viewer, the first phase of this effort has focused on mapping and analyzing the boundaries through the lenses of relevant theoretical frameworks, in particular visual landscape assessment, landscape perception and experiential aspects of landscape. The Trust contacted the authors to work with them in developing a student research project that could inform their thinking about these issues. As a result, a special elective course was developed to engage students in investigating the legibility of a portion of the WSP boundary.

3. Methods, Goals and Objectives

What emerged was a multi-dimensional engaged action research with an overarching constructivist strategy (Deming and Swaffield, 2011) in that the authors sought to consciously use the project to pilot a learning and teaching approach to generate new knowledge—for us as educators, for the students in their learning, and for our colleagues in the WSPT. The engagement with state government officers of the Trust allowed them to participate as fellow researchers, in that the problem they need to solve—clarifying and articulating the identity of the WSP—is one that could benefit from an innovative approach. Ultimately, the aim was that the

findings of our project would broaden the scope of planning approaches taken in the WSP, and make a significant contribution to design outcomes for the Western Sydney Parklands, in the form of creative proposals for improving parklands identity and community awareness.

The proposed project methodology was developed in collaboration with the WSP Trust to ensure its objectives would contribute new ways of thinking about management issues while also meeting the pedagogical goal of engaging students in visual assessment and experiential approaches to landscape planning and design. In addition to introducing and applying key theoretical foundations of visual assessment, there were a number of discrete 'deliverables' to be produced by the students, including:

- a statement of design principles and strategies for the Parklands boundaries which could inform future design briefs
- preparation of base information focused on an inventory of WSP edges
- desktop and on-site landscape analyses of the edge conditions of the Parklands.

To achieve our pedagogical aim of the students constructing a knowledge base to underpin their design proposals, the learning process focused on developing, sharing, testing, synthesizing and refining ideas. The repertoire of group activities was limited to in-class discussion, presentation, and field observation. Our role as educators was to identify resources, facilitate group discussion, and encourage critical thinking and reflection.

3.1 Structuring the landscape inventory and description

The entire perimeter of the WSP is approximately 100 kilometres (approx. 62 miles), so to ensure that the project was a manageable scale for the class of 12 mostly Landscape Architecture students, we focused on the four northern precincts of the WSP. These encompass areas of the Parklands that face considerable development pressure at their edges and also have the potential for highly visible design interventions. This area represented approximately 18kms (11 miles), which the students divided into 10 segments for each to study in more detail.

3.2 Constructing the framework

Students were each assigned a reading on what we presented as a selection of the foundational theories of landscape perception, visual assessment, landscape ecology and/or experiential aspects of landscape (Appleyard 1964; Bell 1993; Dramstaad et al 1996; Lynch 1960; Nassauer 1997; Relph 1976; Thwaites 2007; and Tuan 1974, 1977). They then had to prepare a short discussion paper on their assigned reading and present this to the class. The group discussion identified a number of commonalities across these diverse approaches to visual and experiential indicators of legibility for the WSP, the most prominent of which were edge conditions, qualities of 'hereness /thereness', and landmarks.

To further distil these theoretical positions and construct a method for our fieldwork, students were paired on the basis of common theoretical concepts, and prepared poster papers illustrating the main points of both theories and their potential applicability to WSP. Through a third review and discussion with the course convenors and the client representatives, the group developed a synthesised or 'blended' inventory and assessment framework which could be applied to the specific urban conditions of the WSP landscapes.

The resulting approach drew primarily on two visual landscape attributes—coherence and legibility. Palmer's landscape descriptors (2000, 167, 173) categorize these as 'informational content', and notes their origins in the work of Stephen and Rachel Kaplan (1989). Additionally, the students drew on Lynch's key urban element, 'landmarks', and Thwaites' notion of 'hereness-and-thereness' to complete their own theoretical framework for understanding how/if visitor attraction to the WSP could be increased by enhancing the coherence and/or legibility of its boundary conditions.

The students applied their framework to the WSP starting with a desktop analysis using Google Earth air photos, followed by on site validation of what they had 'discovered' in reviewing the photos. While in the field, they photographed and mapped their segments, using a common graphic language of symbols. In a group discussion of their results, students identified desirable design outcomes for the WSP periphery, which in turn generated a set of design principles. With design principles articulated, the students returned to their specific segment of the Parklands boundary and mapped optimum locations for applying the design principles. A consolidated plan of their mappings, along with the inventory and an executive summary authored by the students, was presented to client in a final group review.

4. Results

As mentioned above, the first group discussion revealed commonalities and synergies across the diverse theoretical approaches. In addition to edge conditions, qualities of 'hereness /thereness', and landmarks, several other important concepts emerged in both the submitted work and the group discussions. These included connectivity—visual, social, physical and ecological; diverse ways of classifying spaces, such as nodes, patches and focus points; and concepts of layering and nesting. The students recognized the importance of developing an awareness of visual clues to place, to culture, and embedded narratives, and questioned how they might evoke memories and an awareness of the varied lived experiences on offer within and around the parkland. In considering how and what is perceived, and how and what is legible, the group confirmed the primacy of the view from the road--as well as from across the road.
In order to elaborate and clarify what it might mean to strengthen the identity and cohesiveness of the WSP, the students used these fundamental concepts to develop six broad design outcomes, as follows:

- Community ownership
- Articulation of identity/ies
- Clear entry points, signage, corners
- Attention to path definition and condition; attention to edge definition and condition
- Social framework extended beyond park and into park
- Interaction between park and residential areas, as zones of transition, or 'ecotones'

The students conceptualised their study of the perimeter of the WSP as a "necklace" of elements, or a series of features or links with a syntax specific to the Parklands and its context. This 'Necklace of Legibility' had 9 components, each grounded in theoretical readings and the desktop inventory of the parklands. These are elaborated on below:

- **Thresholds** (Thwaites, Dee) Distinctive elements that mark the transitions between areas work to establish a sense of arriving at or departing from a distinctive place, or simply and an awareness of moving through.
- **Hereness-thereness**: Drawing on Thwaites' and Simkins' work, 'hereness' refers to the experience of arrival and centredness, while 'thereness' refers to the interest and intrigue offered by glimpses/views of a distinctive destination; prospect and refuge.
- **Landmarks** (Lynch) An easily identified and powerful visual cue
- **Edges**: (Lynch, Thwaites, Dee, Forman) gives strong visual and physical definition
- **Pathway** (Lynch) either physical or visual; strong directional qualities
- **Road** (Appleyard, Lynch) Experience of moving along a road is often the way people 'visit' a place. Planning and designing specific images or sequences of views can construct identity, or elicit a sense of place.
- **Speed** (Appleyard) Because of the importance of the mode and rate of travel to experience of place, the variety of road and path categories was considered an important attribute of the necklace.
- **Stewardship** (Nassauer, Forman, Dee) Visual evidence of a 'cared-for' environment; obviously a 'tended' landscape and not neglected.

Each student mapped their own segment, identifying the 'beads' of the necklace (as per the list above) and then amalgamated these findings onto a single map of the study area. Once this inventory was complete, the design outcomes were revisited to consider how these outcomes might be achieved. The students identified specific locations and opportunities for applying the resultant set of design principles (listed below) to the perimeter.

Proposed Design Principles:

P1: Prioritise the view from the road—create enticing views into the Parklands
P2: Optimise design and placement of elements to increase legibility and contrast
P3: Express stewardship of the environment, particularly at key intersections and thresholds
P4: Articulate a clear and consistent agency ethic, evident in consistent and coordinated use of materials and signage that is respectful of context; capture and reveal narratives of experience of the landscape
P5: Activate edges judiciously—adopt the 'ecotone' concept of transitioning from suburban context into the Parklands at key points.

5. Discussion

By comparing the proposed design principles generated by the students with the greenway principles and the aims and objectives of the WSP's Plan of Management, we can clarify the nature and quality of the studio's contribution to the WSP. The PoM sets out seven management principles for the WSP, all typical of contemporary large urban parks: 'enjoyable; sustainable; identifiable; educational; accessible; viable; in partnership' (WSP 2010). These are consistent with contemporary park management principles, and set the direction in general terms, rather than taking a culturally or geographically specific approach. The five Strategic Directions from the PoM also highlight familiar themes for planning of large contemporary parks: recreation and parkland infrastructure; environment and conservation; culture and participation; urban farming; parklands development and management (WSP 2010).

From these high level principle statements, the PoM offers more concrete and specific objectives, actions and outcomes. However, with a total of 24 objectives and 89 actions, the scope and complexity of the challenge for WSPT is clear. Indeed, developing a high level landscape strategy is a particularly complex challenge with such a diversity of areas to manage. To date the 'strategy' in the WSP has been largely to avoid a one-size-fits-all approach to design and building works that are carried out throughout the parklands, and this is WSPT's first attempt to find an alternate approach, with "imageable" outcomes.

In light of this, important and new ways for the Trust to approach their image challenge were revealed through the studio. Most important is the concept of 'hereness and thereness,' and applying it to identify places where visitors can gain views from within the Parklands to the distant mountains or the city skyline, views that are not available anywhere else in Western Sydney. They are a distinctly WSP experience. Students also noted the importance of strategic gaps or breaks in the boundary edges, providing views into the Parklands, for example to landmarks like Rooty Hill, a distinctive landform in an otherwise fairly flat, open area. If the students' methodology is extended further to the southern precincts of the Parklands, a sequence of distinctive, only-in-the-WSP views could be structured using landform and planting to establish the awareness that you are in the Parklands. The concept of 'hereness/thereness' also highlighted the importance of designing for intrigue, for example using visual cues and/or landmarks to motivate/attract people into and through the parklands.

In their observations, students also noted inconsistent evidence of "stewardship" along the perimeter of the parklands. A sense of stewardship could be easily strengthened by developing a consistent planting structure and palette, a key principle for any landscape strategy. Stewardship could also be conveyed with distinctive layering of spatial as well as vegetated elements. With the large scale of the parklands, the concept of ecotones could be used to signal transition zones, and reinforce the relationship between the structure of plant communities and the regional area. Finally, but most importantly, students also saw stewardship as a significant opportunity to elicit the many regional narratives and threads of cultural landscape history.

Not surprisingly then, when assessed against our earlier findings, the studio outputs reinforce the importance of establishing a legible and meaningful context, and responding to natural and cultural factors when planning and developing a greenway. In our view, as the project leaders, the strongest contribution of the student work was helping the Trust to—quite literally—think beyond the precinct boundaries; to consider the parklands in its context (for example, views into it, or lack of opportunities to view into it) and the importance of attending to specific visitor experiences as a means of cultivating distinctive identity for the Parklands. The billboard project, for example, showcased the artwork of a talented artist/photographer whose shots captured aspects of the Parklands identity, but it is difficult to gauge the outcome of this temporary display on viewers, or to assess it as a memorable experience of the place.

It is worth noting that with the establishment of the WSP Trust and publication of its first PoM, the intentions are for a broader scope of community consultation and participation. Much of the proposed program is directed at encouraging use in the Parklands, for example, urban farming. The Trust now has 'clear and varied objectives,' but must remain focused on generating AUS$10 million/year of income. Their ongoing management challenge is to balance this fiscal pressure

with the demonstrated benefits of investing in greenway infrastructure that may have no direct financial benefit, such as fences, large-scale planting along the boundaries to demarcate their holdings, but which might, in fact, make a major difference in the level of public awareness, legibility and coherence for the corridor's edges.

6. Conclusion

The output of the studio sheds light on potential new directions for how a distinctive, cohesive, landscape-based identity for the WSP might be developed. The students have initiated the process of codifying the diverse landscape elements and experiences in the WSP, and, with their work on design principles, offered preliminary thoughts on what and where interventions might occur. While this process could be repeated to test its reliability, a major drawback is that the findings –the design opportunities—have yet to be tested in the field.

Nonetheless, the value of this studio to the Trust lies in developing a systematic, objective, and reliable means of assessing the visual qualities of the WSP edges to locate opportunities for design interventions and prepare appropriate design briefs that could enhance identity of the Parklands and invite visitors into it where desired. Ultimately, the Trust wants to increase the community's appreciation and use of the WSP so they become advocates for these lands, value the work of the Trust, and understand the ecological and cultural contribution of the Parklands. Without that local support, the WSPT will struggle to gain widespread support at the metropolitan scale.

As noted earlier, this study of legible landscapes reinforces the authors' earlier findings (2010) of the benefit of applying 'greenway thinking' to the WSP to supplement current Parkland management principles; in particular, that achieving legibility and context benefits from an approach that synthesises landscape theory encompassing visual perception, experiential landscapes and landscape ecology. The hybrid methodology trialled in this studio presents a way to comprehensively evaluate and assess legibility and coherence of greenway boundaries. It now needs to be tested for its reliability and transferability to other greenways. For the WSP Trust, this initial studio provided insights into how the perimeter of the Parklands might be re-formed to strengthen its identity and imageability within in the metropolitan context, to attract visitors into its precincts, and clearly demarcate the distinctiveness of this greenway corridor.

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