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An architect's view of the station user experience

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Abstract

This paper reports a preliminary start to research into guidelines for the design of rail stations by architectural researchers new to the building type and its literature. The study examines a de novo investigation into station design undertaken by 42 Master of Architecture students. In preparation for a later transit design project, students were asked to examine the rail experience and to propose twelve possible improvements to rail station design based on their experience. The design ideas were presented as simply annotated 'postcards'.

This student study is compared with two more conventional starting points for literature based research. The first is a current technical Station Design Guide prepared by a rail operator, Queensland Rail. The second is a broader range of literature sources including histories and contemporary analyses of the building type as well as broader analyses from transport policy, planning and urban design vantages. This very quick examination of three possible research starting points is severely constrained in time, but does allow some initial discussion of the scope and possible structure for subsequent research.

The recording of variation between these three sources is not remarkable, but the depth of the differences is noteworthy. Most importantly, the study offers a salutary insight into cultural differences that characterise the rail operators, and the engineering, planning and architectural researchers drawn in this research project. These comparisons show that the current design guide is very narrow in scope and highly simplistic regarding the broader issues of rail station design. A second significant question is to what extent does the student work represent the naivety of youth, or a significant generational change of values.

1. Introduction

This study is an investigation of possible starting points for the development of new guidelines for the design of railway stations. The authors are experienced architectural design researchers, but have only indirect knowledge of railway stations as a building type. This project attempts to find a possible virtue in the authors' inexperience and innocence of the field. Prior to the official commencement of a larger research project, the authors had a rare opportunity to act as free agents, considering the whole issue of rail station design from first principles. In a large multi-disciplinary research project the existing body of knowledge, policies and attitudes within the project can be daunting. As architects, at the initiation of a new design project, or when visiting a project site for the first time, we are trained to record carefully our very initial responses, as over the course of a project, familiarity can blind us to an otherwise significant issue. Designers typically begin by working around the project, exploring the scope and key issues and viewpoints before becoming immersed in the complex detail of the project. This project offered the opportunity to multiply this initial scoping exercise significantly through the involvement of the student group.

1.1 Technical design guides

The technical document that is the first step in this examination is the Queensland Rail Station Design Guide. Design guides should seek to provide assistance to the designer through provision of important data, concepts and reliable strategies. As a prudent practice, the design guides should be regularly reviewed and refined in the light of experience. Over time mistakes, hazards or risks can be progressively written out of future projects through constantly improving guidelines administered in a prudent manner. One criticism of incrementally developed guides is a continuous reference back to the first iteration of the guide that tends to ossify past practice. A second criticism is that authors inherently respond most strongly to negative experience and may be relatively blind to positive outcomes. Due to the slow process of empirical progress, guides may lag well behind the pace of societal, cultural or technological change.

1.2 Broader literature bases

In an idealised model of design or holistic conceptualisation we start from the broadest frame of reference and work progressively towards finer details. Thus we should ideally start the literature review from broad and encompassing overviews. The historical evolution of the building type in changing economic, social and technical contexts will be helpful. Anthologies and analyses of contemporary station designs in a range of international contexts will provide an overview of contemporary thinking. Transport policy studies will help to locate station use within a broader mix of transit modes. Urban design studies promote the need for stations as hubs of neighbourhood activity supporting residential and work-based development in Transit Oriented Development. The TOD model is premised on a desirable quality of life within 400m of a station, an assumption which should itself be a significant factor in station design considerations. Issues of station development, operation and management are other key considerations.

1.3 The Architect's view of the station user experience

The process of design typically involves the exploration of the opportunities and constraints of the brief in relation to the natural, social and urban context. The designer must ask: what is this project's contribution to broader issues? As the design progresses from initial concepts toward refined detail, each successive reduction in scale can serve to support larger project aspirations.

In most architectural design projects the designers seek to overcome the lack of definitive data by imaginatively 'role-playing' the use of the facility by different parties. Thus the designer imagines movement and habitation of a conceptualised building in multiple ways: as an able bodied person, one with limitations on vision or movement; as a commuter, as a staff member, as a cleaner; in fine weather, hot, cold or rain; on special occasions, at peak hours and in the dead of night. The hallmark of good design conception is not just preplanning to ensure that undesirable outcomes are avoided, but the foresight to envisage pleasurable outcomes that may otherwise not have happened.

1.4 Method

The authors commenced this project as a structured comparison of different sources for the definition of scope and themes for the subsequent research. The literature

review commenced with some of the most comprehensive overviews of rail history and analyses of contemporary station typology, augmented by broader urban design and transport policy discussions. After a number of broad contextual studies had been completed the researchers examined the Queensland Rail Station Design Guide 2010. These initial literature studies were then subject to a simplified analysis of the overall scope of issues discussed and the relative significance placed on these issues. The third study was an independent design investigation 42 Master of Architecture students who each presented 12 design ideas for improving the user experience by design. The collective output from this exercise was treated as a third source of possible design guidelines and was compared with the earlier literature reviews. Each of the three resource bases are presented here briefly prior to a comparison of the methods and discussion of the issues that are revealed.

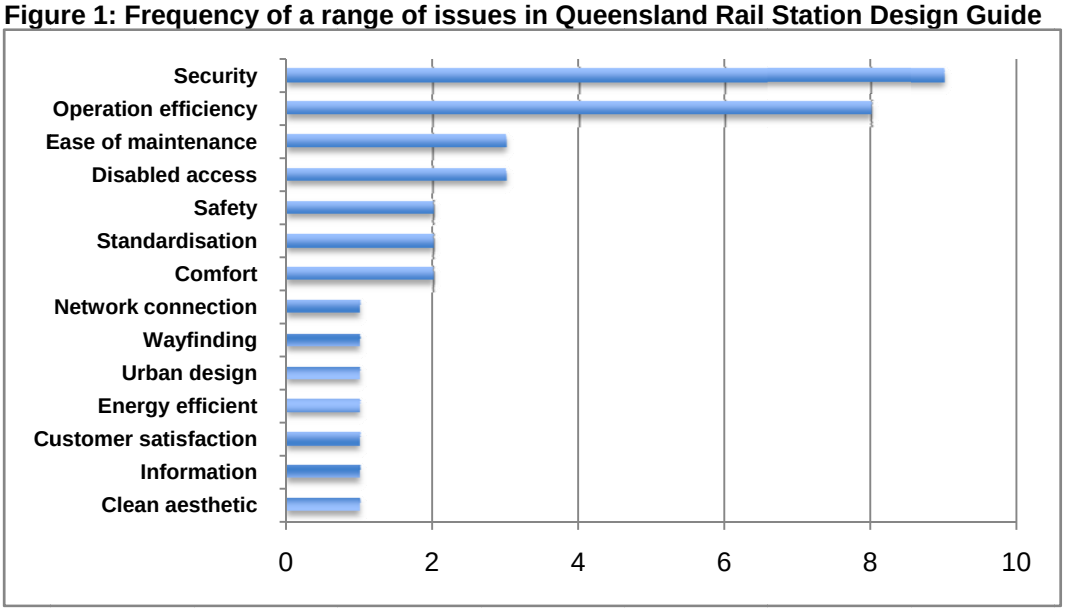
2. EXISTING QLD STATION DESIGN GUIDELINES

The Queensland Rail Station Design Guide endeavours to set out "…minimum desirable standards" for the design of Queensland stations (QRSDG, Shoemaker 2010, p3). It is intended as a 'living document' updated every six to 12 months, although revisions have been published at approximately two year intervals. The document is technical in its nature and is structured basically as three pages of dot point issues, followed by over one hundred pages of highly prescriptive technical requirements such as specifications for materials, dimensions and fixings of guards and rails. The few guidelines that address broader issues are less definitive and scattered through the preliminary section of the document.

2.1 Perceived Design Priorities

The authors have grouped the design issues in this document by theme and analysed their perceived importance based on frequency and prominence in the text. The document does not clearly group or prioritise issues, and its structure mixes discussion of customer experience with technical issues such as CCTV requirements or ticketing options. On page 11, however, there is a cluster of 37 dot points that attempt to overview the issues in station design. These are categorised and tabulated by frequency in Figure 1 below. It can be seen that security and operation efficiency predominate over issues relating to the experience of the commuter.

Figure 1: Frequency of a range of issues in Queensland Rail Station Design Guide



2.2 Categories

From the initial count of considerations discussed in the design guide a thematic categorisation has been undertaken. Topics of a similar nature are grouped in categories descending in breadth to the most detailed considerations. These are characterised as: Relation to Context; Nature of Station Building; Users' Response to the Station and Operator Considerations. The design guide topics have been categorised in Table 1 below. The table aims to record all priorities and the categorisation does not reflect either their prevalence or their expressed or perceived importance. These broad issues are discussed below.

Table 1: Rail Station Design Guide issues sorted as principal issues and categories.

ISSUES	CATEGORIES	RAIL DESIGN GUIDE
RELATION TO CONTEXT	NETWORK LINKS	Walk to bus stop
	CONTEXT & SETTING	Preserve historical stations
NATURE OF STATION BUILDING	CONFIGURATION	Single solution
	STATION ENVIRONMENT	Limited weather protection Very limited planting
USERS' RESPONSE TO THE STATION	WAYFINDING	Signage
	AESTHETICS	Design standardisation
	INFORMATION	Timetable, network map
	ACCESS	Universal access Close to parking
	SAFETY	Signage & barriers
	SECURITY	CCTV Two entries only
	FACILITIES	Ticketing
	USER CONVENIENCE	Punctual services Good Customer Service
OPERATOR CONSIDERATIONS	COST ISSUES	Easy & Efficient Operation
	MATERIALS	Graffiti & vandal resistant
	MAINTENANCE	Graffiti removal Cleaning

2.3 Relationship to context

The broadest scale discussed in the design guide is the need for access to the rest of the city, here only as the need for 'compliant paths' to any nearby bus stops, without further advice on proximity or nature of the connection. The only other discussion of issues beyond the station is that of heritage preservation. Beyond a requirement to conform with relevant legislation, there is little advice on the principles of heritage significance, or of importance of landmarks to local community as an aspect of way finding. (QRSDG 2010, p10)

2.4 Nature of the station building

There is little expressed understanding of the complexities of station building design, beyond its role as a functional 'configuration' or 'station environment'. Disturbingly, the guide describes a railway station briefly as "…essentially a path of travel through, or past, a number of facilities…" such as platform, staff and toilets. (QRSDG 2010, p9) There is an equally perfunctory and worrying view of the design process. Design is to begin by "…determining the optimum location for the train boarding points for persons requiring assistance". (QRSDG 2010, p8) This point is then to be connected to the entry and facilities with 'compliant paths of travel'. Finally, "…site furnishings such as buildings, lifts and the like are then 'wrapped-around' the paths of travel"

(QRSDG 2010, p8) in an enclosure providing the minimum number of entrances. (QRSDG 2010, p11) Strangely, the guide does not distinguish between different types or scales of station, such as terminals, line interchanges and suburban stations. The same is true of urban context. This is in stark contrast to the other urban design and rail literature discussed in section 3.

The guide requires station structures to be of minimum size and consolidated into a single building. (QRSDG 2010, p11) While a 50 year lifespan is described elsewhere, there is no mention here of possible future change or expansion, nor of passenger requirements. The only variation envisaged is whether the station has an overpass or underpass, though the qualities or consequences of this choice are not discussed. The qualities of the station environment are described only in terms of weather protection and seating. Both, it seems, should be kept to a minimum, as it is argued that rain shelters are to be provided over key facilities, but not between them. One of the few concessions to the passenger experience is a suggestion for planting as a means of "…softening the environment and adding brightness." (QRSDG 2010, p72) The guide then quickly reverts to operational necessity, addressing concerns for safety and maintenance.

2.5 Users' response to the station

The guide is similarly gruff and technically focussed when discussing users' needs. Way finding issues in the guide address those within the station, but not those seeking to find the station. Signage is proposed as the principal technique for aiding orientation and navigation. The potential for the building design itself to aid intelligibility and orientation is not considered. The guidelines then address display of network information with detailed specifications for written timetables, network maps, active LED displays. Regarding the visual aspects of the station design, the guide seeks only a clean aesthetic and use of standardised designs. Beyond assumed cost savings, standardised construction elements are seen to strengthen a unified identity for the rail network.

The Guide gives significant priority to the movements of travellers and staff and particularly focuses on the needs of persons with disabilities and issues of security. These two considerations are highlighted as the primary issues in rail station design. Security issues are discussed via Crime Prevention Through Environmental Design (CPTED) principles, but guidelines mainly discuss camera surveillance and lighting. Passive surveillance provided by bystanders is mentioned positively, but not linked to design initiatives that might attract such an audience. Discussion of facilities available at the station is limited to basic provision of ticketing, toilets and a staff office.

2.6 Operation

A considerable portion of the Design Guide relates to the reliable and efficient operation of the station by staff. Maintenance and cleaning are of particular significance and generate detailed advice on the selection of materials, paint colours and tree species. Graffiti and vandalism are highlighted as major concerns, and there is a considerable focus on strategies to minimise their impacts. All eight of the strategies discussed focus on material resilience as the solution to antisocial behaviour.

2.7 Critique

While the Queensland Rail Station Design Guide contains some valuable technical information for station designers, there are fundamental shortcomings. The document is very strongly focussed on reactions to perceived threats - threats of security, threats of vandalism, threats of accidents and threats of increased maintenance. Even trees and gardens need to be constrained behind fences in this worldview. (QRSDG 2010, p72) This defensive outlook limits the potential design outcomes both in terms of quality, diversity and ambition. The Guide sets very low standards for design quality, then accepts that "compliance with current standards will not always be possible."(QRSDG 2010, p7) Limitations on the ambition of the document are clear throughout. The first point listed as a 'Vision' in the SEQ customer charter is for "clean and tidy environments." (QRSDG 2010, p6) Other ideals relate to punctual transport and responsive customer service, but the designation of cleanliness as a visionary ideal suggests low ambitions indeed.

As a possible basis for the development of new design guidelines the document is unhelpful. The guide contains many pages of dot point considerations that are unstructured and vary markedly in scale, complexity and focus. It is difficult to understand why these, and why in this order? While the document is published in conjunction with the Transit Orientated Design (TOD) guide produced by the Queensland Department of Infrastructure and Planning, it seems to have learnt no lessons from it. Rail stations are identified in the TOD guide as central and integral to the urban environment, attitudes which are missing from in the Queensland Rail Station design guide. It is clear that the Guide has grown incrementally and haphazardly over time in response or reaction to negative incidents. While the narrow, technical approach of the Guide may help solve the problems of rail operators, it is inadequate to inform holistic rail station design. The document as a whole cannot be considered useful in framing and structuring a new set of Station Design Guidelines.

3. BROADER RAIL AND URBAN DESIGN LITERATURE

The second tack for the research was through a very preliminary study of texts from a range of associated fields. Sources covered the social history of rail (Judt 2010; Judt 2011), the history of the rail station building type (Ferrarini; Meeks) international analyses of recent stations (Green & Hall); urban transport theory (Cervero; Mees; Mees & Jago) and urban design guidelines (DIP). The study has been primarily European and North American in focus with some Australian material. This range of literature is grouped together for this discussion of an inclusive series of considerations that could be used to structure discussion of future design guidelines. The scope and focus varies greatly with the range of authors and discipline, but a number of key priorities are shared and shown in Table 2 below as an expansion of the taxonomy from in the Queensland Rail Station Design Guide. New categories and responses not previously discussed are shown in bold while topics already included in earlier analyses are in grey. Two new broad categories regarding the relationship of the station to its larger setting have emerged: master planning and the social significance of the station. Two further topics expand considerations of the nature of the station building itself - inclusion of additional functions and the consideration of future planning.

3.1 Relationship to context

Precinct master planning, while not discussed in the Queensland design guide, is considered a fundamental aspect of station design in most of the examined literature. Mees asserts that "...land-use planners can help or hinder public transport, particularly through their influence over the location and design of trip attractors such as employment, retailing and services." (Mees 2010, p 162) An overriding concept in the literature is the potential for the station to exist as an urban centre in its own right (TOD Guide 2010).

These overviews regard the social significance of stations as that of important civic buildings. Meeks highlights the significance of arrival and civic expression "...the station was to the modern city what the city gate was to the ancient city." (Meeks 1956, p39) "Architects and corporations... accepted... that public buildings should be supremely impressive." (Meeks 1956, p133) Beyond the pursuit of grandeur, there is a strong theme in the literature that stations "...above all...were the ideal space to advertise themselves." (Judt 2010, p61) Targeted investment in the design of the station can be seen in turn to elevate the status of public transport.

Table 2: Ideas from design literature relative to station design guide issues

ISSUES	CATEGORIES	RAIL DESIGN GUIDE	DESIGN LITERATURE
STATION's RELATION TO THE URBAN CONTEXT	**MASTERPLANNING**		**Station as neighbourhood centre** **Transit orientated development**
	SOCIAL SIGNIFICANCE		**Symbolic and iconic elements** **Strong urban presence** **Awe inspiring architecture**
	NETWORK LINKS	Walk to bus stop	**Integrated Multi-modal stations** **Full cycle/pedestrian network**
	CONTEXT & SETTING	Preserve historical stations	**Quality pedestrian experience**
NATURE OF THE STATION BUILDING	**ADDITIONAL FUNCTIONS**		**Retail, Accomodation, food**
	FUTURE PLANNING		**Design for expansion**
	CONFIGURATION	Single solution	**Range of solutions**
	STATION ENVIRONMENT	Limited weather protection Very limited planting	**Overall weather protection** **Peaceful or exciting atmosphere** **Natural quality lighting**
USERS' RESPONSE TO THE STATION	WAYFINDING	**Signage**	**Open, intelligible spaces** **Visibility**
	AESTHETICS	**Design standardisation**	**High civic quality**
	INFORMATION	Timetable, network map	**Locality maps**
	ACCESS	Universal access **Close to parking**	Universal access **Replace parking with ped/cycle**
	SAFETY	Signage & barriers	
	SECURITY	CCTV Two entries only	**CPTED activation of space** **Numerous entries**
	FACILITIES	**Ticketing**	**Cycling Facilities**
	USER CONVENIENCE	Punctual services Good Customer Service	Punctual services
OPERATOR ISSUES	COST ISSUES	Easy & Efficient Operation	Easy & Efficient Operation
	MATERIALS	**Graffiti, vandal resistant**	**High quality, durable**
	MAINTENANCE	**Graffiti Removal** Cleaning	**Graffiti reduction**

The broader literature study significantly expands considerations of intermodal transit networks and the need for efficient and attractive transfers. Mees believes "…the single most important principle...is to reduce the inconvenience as much as possible"(Mees 2010, p 167) Most texts start from the station's broader context in

any design consideration and the need to base design thinking on the modal links to the station. Mees quotes Zurich City Council, “Every public transport user is also a pedestrian.” (Mees 2010, p 184)

3.2 Nature of the station building

The broader overview exposes the wide range of functions that stations may provide beyond that of rail travel including accommodation, dining and retail. Judt describes how historically “Patrons and clients were not supposed to just buy a ticket and go; they were meant to linger and imagine and dream...”(Judt, 2010, p61). Contemporary studies make parallels to the mix of services airports provide. Provision for future expansion or change is a prudent consideration that should shape the thinking about the design and construction of stations. (Meeks 1956, p57-59.) Meeks shows how many designs were considered that allowed for simple future expansion while others were built for future demand and rented out surplus space in the short term. (Meeks 1956, p 51) Future expansion is not mentioned in the QRSDG. Whereas the Queensland Rail guide describes only a single type of station configuration, the literature contains a more exhaustive taxonomy of potential configurations and station types.(Meeks 1956, p30) Similarly, the historical accounts show a rich tradition of grand and dignified station environments. (Judt, Ferrarini, Meeks)

3.3 The users’ response to the station

The literature consistently highlights the need for clear way finding and navigation around the station, but regards the signage promoted by QR as the least satisfactory method. More useful is an open and uncluttered layout where “...the traveller was able to see from afar each of its main elements and so understand how he should proceed after entering.” (Meeks 1956, p98) The simple open volumes that aid orientation also reinforce arguments for a free, simple and dignified aesthetic. “The clear message is that people choosing public transport deserve nothing but the best.” (Mees 2010, p137). The QR guide’s attention to the needs for universal access is well supported across the study which also emphasises the importance of multi-modal transit (Mees & Dodson 2011, p7) and particularly cycle access and facilities. Most sources agree that “Entrances and exits should be well marked, numerous, and easy to traverse.” (Meeks 1956, p59) although QR’s guide recommends limiting the entries to two for the ease of apprehending criminals. (QRSDG 2010, p11)

3.4 Operation

The broader literature generally gives less weighting to security and vandalism than the QR design guide, and treat them as social issues. Preferred design responses focus on public occupation, social engagement and passive surveillance rather than reliance on closed circuit cameras and resistive materials.(Cervero 1998, p78) “Deserted, poorly maintained stations and interchanges with infrequent visits by random patrols of armed security guards do not inspire a sense of public confidence.” (Mees 2010, p 177)

3.5 Critique

While it is difficult to distil the major design priorities from such a broad range of texts, some common issues, and also attitudes, become clear. In most design or analytic processes the principle of working from the broadest level of impact to increasingly precise detail is a useful working method. Here the broad scale relationship of the station to its urban context and its significance to society are

stressed as fundamental issues that would dramatically expand the QR topics. The provision of additional functions, services and facilities at the stations are additional considerations that would dramatically refocus the QR design guidelines on user requirements. Where the QR document refers to users there is an overwhelming focus on risk aversion associated with access, safety and security. A more uplifting consideration of social, cultural and aesthetic issues would require a significant rewriting of the code.

4. ARCHITECTURE STUDENT DESIGN IDEAS

The third source of ideas investigated by the authors was the outcome of a short exercise by 42 Master of Architecture students. In preparation for a later transit centre design project, each student spent a week exploring rail travel in South East Queensland to propose twelve possible ideas for improving the rail station experience, presented as annotated 'postcards'. Key issues from the study have been tabulated relative to earlier topics in Table 3, and the discussion is illustrated with representative 'postcards'.

Table 3: Student design ideas relative to issues from design literature

ISSUES	CATEGORIES	RAIL DESIGN GUIDE	DESIGN LITERATURE	STUDENT DESIGN IDEAS
GLOBAL ISSUES	**ECOLOGY**			**Rail corridor connecting green spaces**
	SUSTAINABLE DESIGN			**Water collection & management** **Solar collection, Energy efficiency**
STATION's RELATION TO THE URBAN CONTEXT	MASTERPLANNING		Station as neighbourhood centre Transit orientated development	Station as neighbourhood centre Transit orientated development **Connect communities divided by rail** **Connection to public space**
	SOCIAL SIGNIFICANCE		Symbolic and iconic elements Strong urban presence **Awe inspiring architecture**	Symbolic and iconic elements Strong urban presence **Unique qualities of place**
	SOCIAL RESPONSIBILITY			**Build community, local artists, music** **Community centre or corner store** **A place for all types, all ages**
	NETWORK LINKS	Walk to bus stop	Integrated Multi-modal stations Full cycle/pedestrian network	Integrated Multi-modal stations Full cycle/pedestrian network
	CONTEXT & SETTING	Preserve historical stations	**Quality pedestrian experience**	Rehabilitate historical stations **Utilise station topography**
NATURE OF THE STATION BUILDING	**ADDITIONAL FUNCTIONS**		**Retail, Accomodation, food**	**Civic Hall ,library, gallery, museum** **Community uses, music, art, markets** **Family uses, play, childcare, parkland**
	FUTURE PLANNING		**Design for expansion**	**Rent & activate dead spaces**
	CONFIGURATION	Single solution	Range of solutions	Range of solutions **Respond to each site context**
	STATION ENVIRONMENT	Limited weather protection Very limited planting	Overall weather protection Peaceful or exciting atmosphere Natural/quality lighting	Climate responsive design Peaceful or exciting atmosphere Natural/quality Lighting **Station as parkland** **Various seating types** **Connection to outdoors**
USERS' RESPONSE TO THE STATION	WAYFINDING	Signage	Open, intelligible spaces Visibility	Open, intelligible spaces High visibility, colour coding
	AESTHETICS	Design standardisation	High quality	Design standardisation **Unique architecture**
	INFORMATION	**Timetable, network map**	**Locality maps**	**Transinfo kiosk, phone apps**
	ACCESS	Universal access **Close to parking**	Universal access **Replace parking with ped/cycle**	Universal access **Encourage cycles on trains**
	SAFETY	Signage/barriers		Barriers
	SECURITY	**CCTV** **Two entries only**	CPTED activation of space **Numerous entries**	CPTED activation of space **24 hour activity**
	FACILITIES	**Ticketing**	Cycling Facilities	Cycling Facilities **Wifi & workspaces; gym & showers** **Domestic and office services**
	USER CONVENIENCE	Punctual services Good Customer Service	Punctual services	Good information systems Good Customer Service
OPERATOR ISSUES	COST ISSUES	Easy & Efficient Operation	Easy & Efficient Operation	**Encourage greater patronage**
	MATERIALS	**Graffiti, vandal resistant**		**Pleasant, comfortable & green**
	MAINTENANCE	Graffiti Removal Cleaning	Graffiti reduction	Graffiti reduction **Graffiti & street art celebrated** Cleaning

4.1 Global Issues

Figure 2: Trainline ecological corridors

Figure 3: Greening trackside allotments

In some proposals, a new scale of consideration arose in the student work that went well beyond the city to the relationship between the rail station and global issues. In particular, the impact of the station on ecology and sustainable design were considered.

Figure 4: Green pedestrian connections

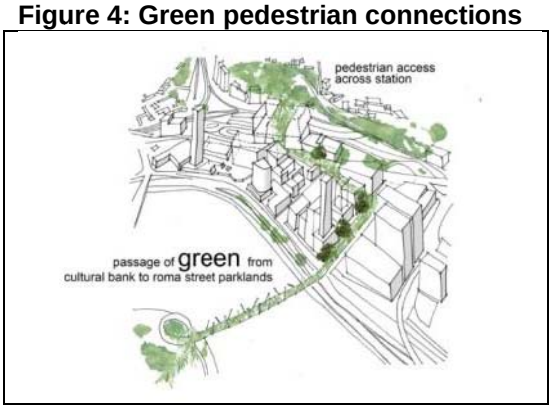


Figure 5: Wayfinding via green links

Concepts included using the rail as an ecological corridor connecting green spaces and plans to offset energy usage with distributed solar and wind generators along the route.

4.2 Station's relation to its urban context

Figure 6: Stations at walkable distances

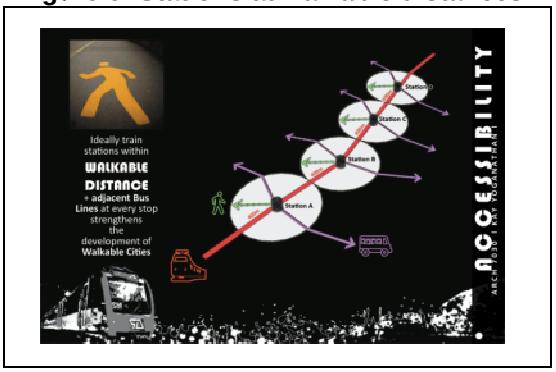
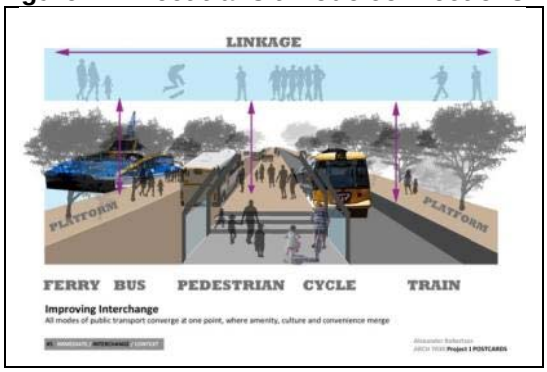


Figure 7: Direct transit mode connections

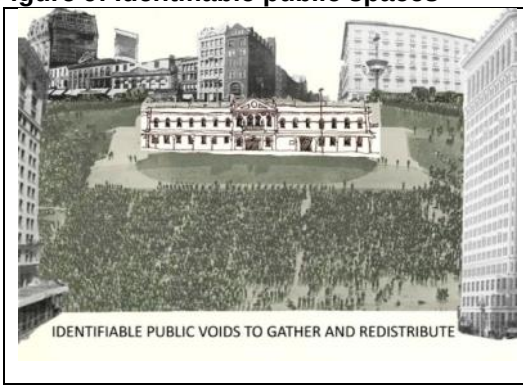


The student work proposing principles of transit orientated design and stations as urban centres were ideas well covered by the design literature, but student work expressed a strong agenda for facilities and services to cyclists and pedestrians to

be prioritised over car users. Submissions were particularly critical of current poor networks in Queensland.

Figure 8: Pedestrian streets linking stations

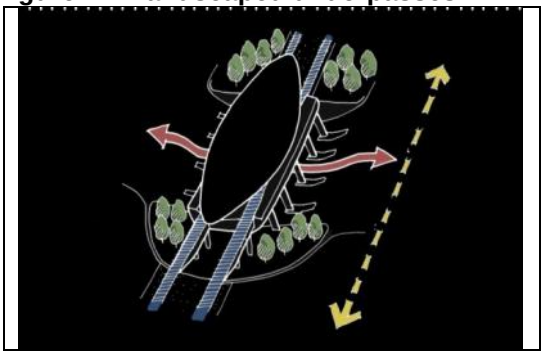
Figure 9: Identifiable public spaces



The master planning ideas showed a strong focus on direct connection to open, car-free public space. This had importance as a major arrival, spill out and orientation space for travellers and reinforced the social importance of the station through its urban presence.

Figure 10: Landscaped public overpasses

Figure 11: Landscaped underpasses



An important master planning consideration identified the potential of the station design to connect communities otherwise divided by the rail corridor. In particular, there was a common theme of a generous public concourse or parkland public spanning the tracks. The continuity of landscaped open space across and along tracks was recurrent.

4.3 Significant Cultural Presence

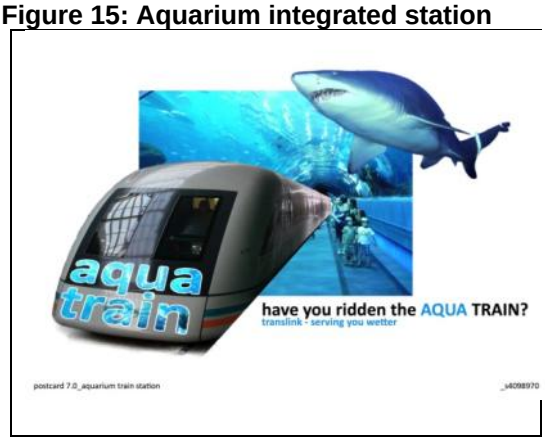
Figure 12: Entering the city 'like a god'

Figure 13: 'Scuttling in like a rat'

The importance of station presence found in the literature is clear in the student work, with many proposals emphasising the civic grandeur of historic stations. For many students a particular focus was not on the scale or grandeur of the station, but on opportunities for unique and distinctive design expression of each station.

Figure 14: Zoo integrated station

Figure 15: Aquarium integrated station



Some of the proposals were for boldly themed stations associated with nearby (or sometimes contiguous) attractions such as zoos, aquaria, galleries or museums.

4.4 Socially responsive design

The strong subtheme of some student projects was an interest in the station as a genuinely inclusive community centre strengthened by community art, music and markets and gardening with a familiar face at the station store.

Figure 16: Community functions at station

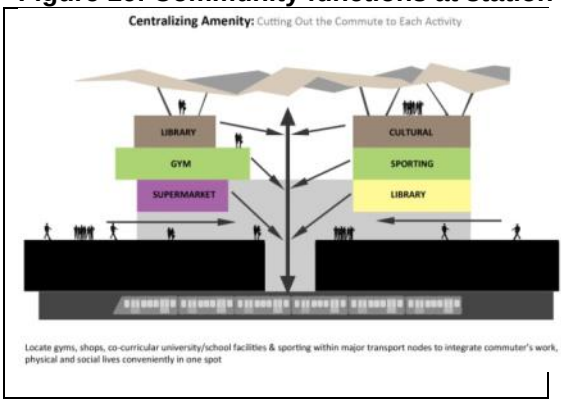
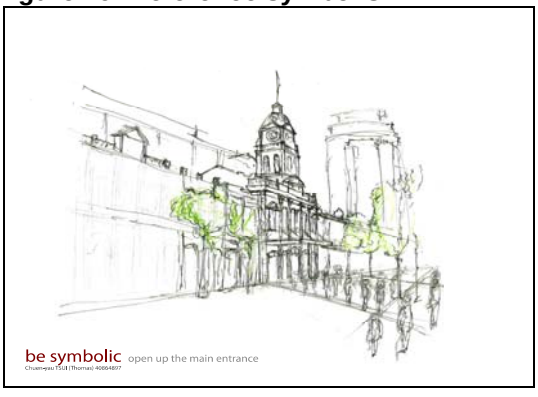


Figure 17: Community meeting place

4.5 Relationship to context

Figure 18: Park station

Figure 19: Reference symbolism



Student postcards emphasised a varied and considered fit to context for each station with a strong connection to historic character or underlying landscape or site conditions. This was absent in the QRSDG 2010, and referenced only occasionally in the broader literature.

4.6 Additional functions

Many of the postcards related to additional station functions beyond the food, retail and accommodation found in the design literature. These included integrating the station with a civic function such as a library, gallery, museum or even a zoo. In less urban settings community markets, playgrounds, parkland and child care centres were considered. Workspaces with wi-fi connection were advocated for both station and carriages.

Figure 20: Platform markets

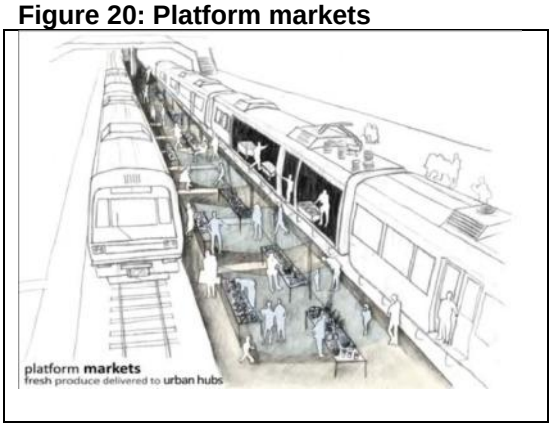


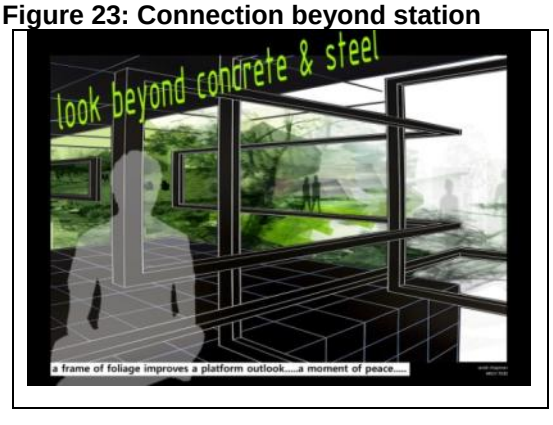
Figure 21: Station child care centre

4.7 Station environment

The quality and experience of the station environment is featured in the student work more strongly than any other category, and in particular, a strong connection to the outdoors. These ideas related to outdoor and indoor gardens, structural openness, climate responsive design and greater access to natural light in subterranean stations. Other considerations relating to the station environment included addition of public art and a range of seating designs to promote social interaction or provide a quiet spot to read rather than simply straight runs of benches facing the tracks.

Figure 22: More vegetation in stations

Figure 23: Connection beyond station



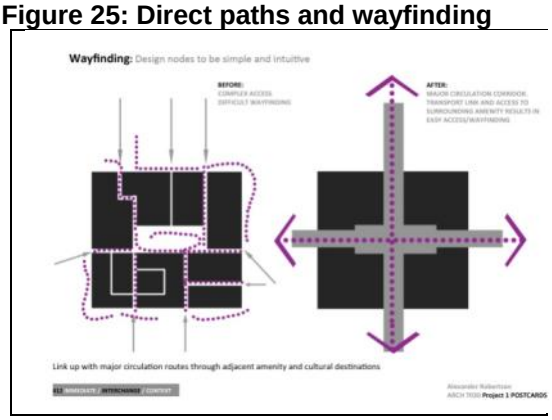
4.8 Wayfinding

In accord with the broader design literature, some student work opposes the reliance on signage and instead promotes way finding through intelligible form, openness,

visual hierarchy, a removal of visual clutter and the use of key orienting landmark structures. By contrast other students proposed strong colour coding and path markers. The larger issue of orientation to the station from the city was also considered an important idea.

Figure 24: Connection to street

Figure 25: Direct paths and wayfinding



4.9 Information

Student ideas for information systems included wi-fi connection from pocket devices to large format projection of information and entertainment. Within the group there was a division of views for or against an information rich audio visual environment.

Figure 26: Real-time info from pocket devices

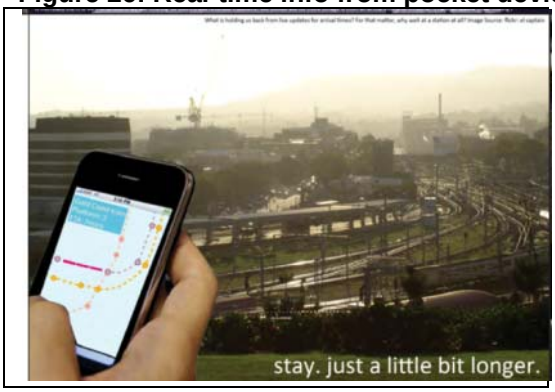
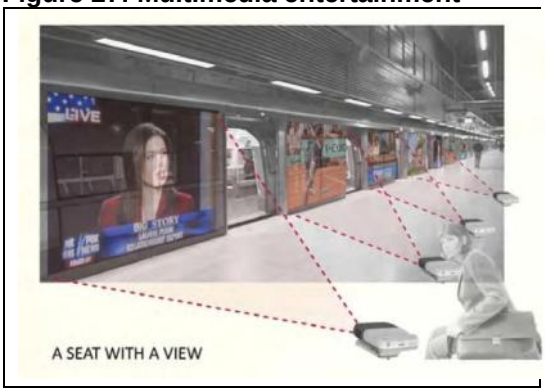


Figure 27: Multimedia entertainment



4.10 Security

Figure 28: Activate under-utilised space

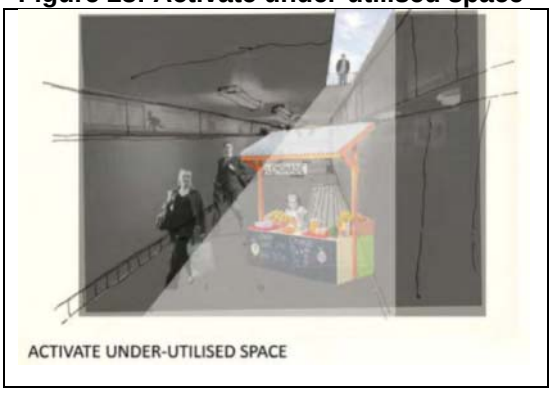


Figure 29: Rely on activity over CCTV

Student postcards were generally opposed to surveillance and security patrols, with many schemes proposing attractive functions within the station precinct that would populate the spaces around the space to create a means of passive surveillance.

4.11 Facilities

In addition to the cycling facilities discussed in the broader literature, some proposals included a selection of domestic and offices services within stations to add convenience and value to the rail journey. In recognition of the fitness culture associated with end of cycle trip facilities, gyms, pools and associated health facilities were also popular.

Figure 30: Kiosks encourage activity

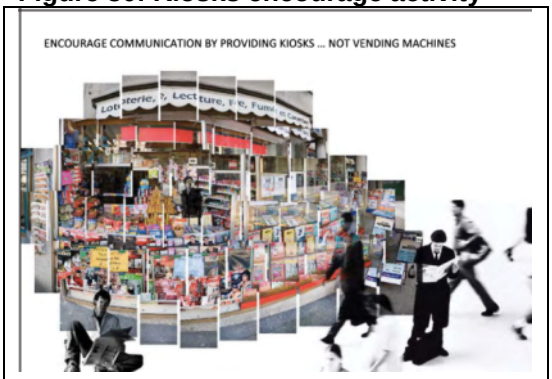


Figure 31: Cycle transport

4.12 Maintenance

Figure 32: Station graffiti galleries

Figure 33: Public art shaping unique stations

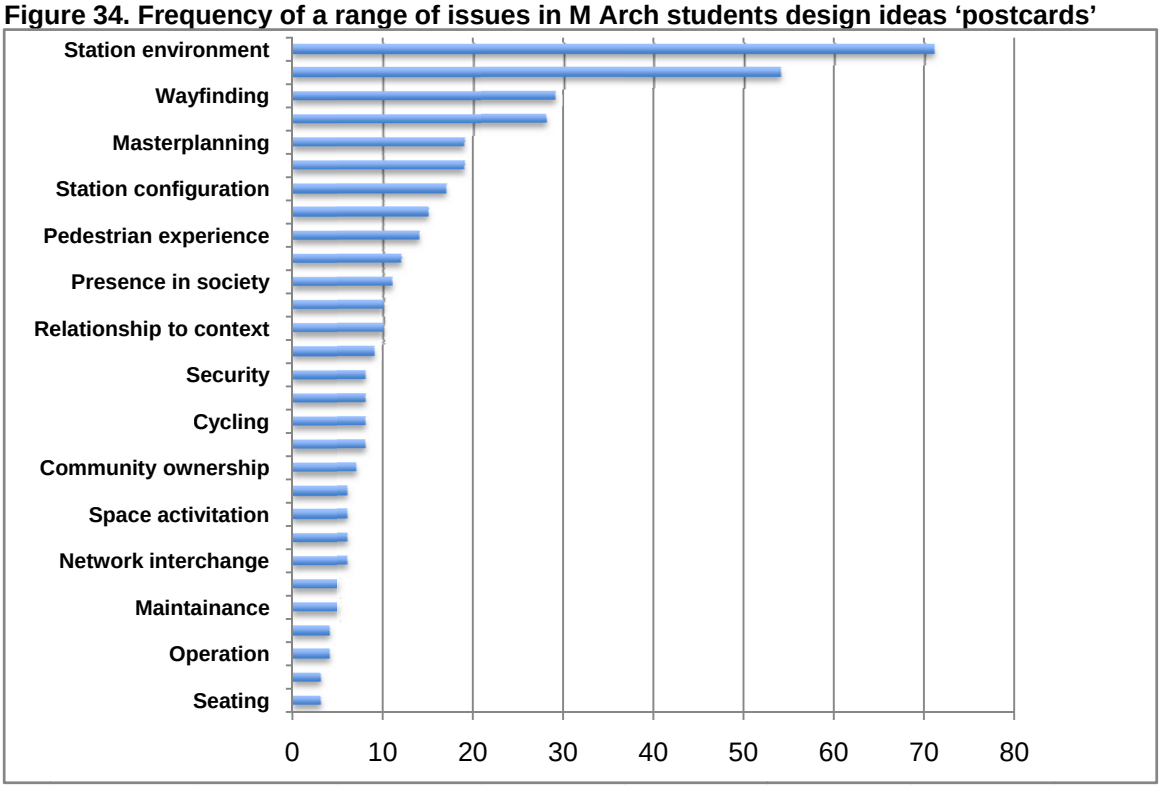
One student attitude directly contradicted the literature and design guides. Rather than viewing graffiti as vandalism, some proposed it be encouraged as public art. In this way maintenance could be reduced while creating engaging and unique station galleries.

4.13 Critique

As might be expected, the student work was varied, ambitious and adventurous in scope and introduced a significant broadening of categories relevant to station design. In the analysis of student submissions plotted in Figure 2, there is a significant emphasis on the station environment, including way-finding, station functions and extending into the design of carriages. There was also a significant interest in station context, master planning and connection to pedestrian, cycle and

other transport modes. Issues that were identified highly in QR design guide that are less frequently represented in the student proposals include maintenance, safety and security, while issues of costing, management and future planning were not represented at all in the student's postcard proposals (Figure 2).

Figure 34. Frequency of a range of issues in M Arch students design ideas 'postcards'



5. DISCUSSION

A fundamental question is raised by this study - Who are the design guides written for? Who should design a rail station? Meeks notes that while technical specialists such as engineers are critical, architects need to lead the design process to ensure a positive contribution to the urban environment and users' experience. Further, "It is unwise to entrust a major station to an architect who is controlled by technical associates, for his hands are tied." (Meeks 1956, p160) The QR guide on the other hand lists 18 disciplines needed for successful station design, but the list contains no architect or urban designer.

The wide disparity evident in Table 3 between the approaches of the rail operator, academic researchers and design students is understandable. The rail operators have direct responsibility for incidents on stations that can be attributed to the design guides, and are consequently conservative, precise and risk averse. Design students have no responsibility for the consequences of their proposals, and are motivated by ambitions to be novel, adventurous and memorable. The academic researchers, historians, planners and analysts lie somewhere in between. They have a degree of freedom to search for and advance new ideas, but need to be sufficiently attuned to industry concerns to be able to advance policy changes. The operators know what would happen, the academics will argue for what should happen, while the students speculate on what could happen.

A final significant difference between the parties is the currency of their ideas. As has been discussed, the QR design guide represents incremental development of a long-

standing model, and the process of reviewing and refining the guide progresses at a rate far slower than most societal change. The academic writers can draw on much more recent precedents, and can advance and adapt theories at a rate consistent with changes in the economic, social or technical change. They remain however, generally significantly older than the students, our next generation of professionals and thinkers, and may be somewhat constrained by the orthodoxies of their disciplines. Some of the differences with the student's ideas may indicate a significant generational change. The students are more likely to be train travellers, cyclists and pedestrians. They may be more likely to be urban dwellers with less reliance on cars. They may be more likely to be concerned by climate change and social inequity, more likely to be out at night and less likely to be upset by graffiti. They may be the most prescient of the commentators.

The authors are pleased with the outcome of this little study, not least because the introduction of the student work locates us, as academics, clearly at the centre rather than the fringe of the discussion of station design guidelines.

The research may have highlighted a fundamental difference of approach between the fields of rail operation, urban design and architecture. Further investigation of existing station design guides could test whether the attitude of the Queensland guide is unique or typical. To ensure stations make a positive contribution to global issues, society, the urban environment and the user experience, it will be necessary to look beyond technical requirements and enlist the experience of urban design and architectural fields.

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