

Submission

No 24

INQUIRY INTO THE UTILISATION OF RAIL CORRIDORS

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**Transit-Oriented Development:
A Sustainable Solution to NSW transport**

Submission by the Rail, Tram and Bus Union

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Executive Summary

This submission is in response to the Legislative Assembly Committee on Transport and Infrastructure's inquiry into the utilisation of air space above, and the land adjacent to, the rail corridor in the Greater Metropolitan Area of Sydney, including the Hunter Valley and the Illawarra. The RTBU strongly supports such projects and welcomes the opportunity to put forward its views.

Competing against health, education and law enforcement - state funding for roads and transport in Australia has almost always taken a back seat in terms of priority. While roads have managed to find ways to finance future planning and maintenance through road toll mechanisms, rail infrastructure is yet to find a sustainable approach similar to that of roads that would allow for planning and investment in the future.

One such approach that has been tried in cities around the world is the integration of transport and land use development above, and adjacent to, railway stations, often referred to as Transit-Oriented Development (TOD).¹

The basic TOD philosophy is that by constructing high density urban developments, both commercial and residential, in close proximity to railway stations, it would encourage the use of, and accessibility to, local transit, thus providing an alternative to automobile usage. As we shall illustrate, TODs do not only turn a healthy revenue for local communities and state governments, but could potentially decrease the number of issues relating to the negative externalities of excess car usage: including, but not limited to, greenhouse gas emissions, urban sprawl, high living costs, traffic congestion, noise pollution and social exclusion.

However, despite the benefits, New South Wales, more than any other Australian state, remains in the shadows of integrative transport initiatives, with a mere 2% of rail precincts currently employing TODs.² According to a private audit conducted by the Committee of Transport and Infrastructure, there is another 135 potential sites for development capable of earning 2.5 billion for the NSW Government.

¹ While TODs are not exclusive to rail, as they have tried to incorporate major bus routes as well, rail remains one of the foremost priority areas in terms of transit development and sustainable management. For the purpose of this submission, the RTBU will refer to TODs as the utilisation of airspace above, and the land adjacent to, the rail corridor.

² According to a report commissioned by Certain Planning Pty Ltd (2010), they are St Leonards, Chatswood, Hurstville, Kogarah, North Sydney and Bondi Junction. New Developments are now being considered in various other locations around Sydney.

Given the potential of TODs and urgency for transit renewal and improvement in NSW, the RTBU urges the NSW Government to reconsider the integration of transport and land use developments around railway stations, and hopes we can provide sufficient evidence to demonstrate how TODs are a huge step in the right direction.

Introduction

If we are to learn anything from history, it is that the significance of sustainable practices is paramount to a healthy and democratic nation.

Over the past two decades, Australia has been faced with a myriad of environmental challenges relating to road use and urban renewal and development. These include, but are not limited to, greenhouse gas emissions, urban sprawl, high living costs, traffic congestion and restricted transit mobility, and compounded by a lack of future planning and funding for transit related infrastructure.

One such approach that has been tried in cities around the world is the integration of transport and land use development above and adjacent to railway stations, often referred to as Transit-Oriented Development (TOD).

Transit Oriented Development: Making it Happen summarises the basic TOD philosophy as ‘concentrating urban development around stations in order to support transit use, and developing transit systems to connect existing and planned concentrations of development’. The benefits of TODs have been well documented in densely occupied territories in Asia, such as Singapore and Japan, but also in the United States, the European Union and certain parts of Australia.

Whilst the models themselves may differ across the various contexts, the bulk of supporting arguments for TODs follow a similar logic. TODs encourage the use of, and access to, local transit, thus providing an alternative to automobile usage. The benefits of such being an increase in usage and fare revenues, and subsequent channelling of that revenue back into the transport system. More importantly though, are the benefits of TODs from a sustainability point of view. Not only is rail one of the most energy efficient modes of transport, but land fill developments have proven to be far more energy efficient than fringe developments. Finally, although sometimes hard to measure, there are the social benefits of TODs, which claim higher levels of social interaction and sense of community (Bertolini 2000).

This submission aims to provide just a sample of these benefits from functioning TODs from around the world, as well as a range of pitfalls associated with such projects. In a final section, we put some of these benefits into perspective by focusing on one particular case study of best practice located in Perth, Western Australia.

Background

TOD is not a new concept and the benefits of such have been well documented in cities across the globe for decades. Singapore is a leading example of a fast and efficient transportation system. The Concept Plan in 1971 not only reconfigured the city in such a way that would support the rapid growth of its citizens and issues concerning sustainable development, but also encouraged a more transit friendly environment with improved walking accessibility and access to mix-use developments (Yang & Lew 2009).

Japan is another example of sustainable transit development. Having the tenth largest population in the world, with over 127 million people, Japan has successfully created ‘sub-centres’ surrounding its terminal stations, thus minimising the pressures of urban sprawl and transit use to, and from, major financial centres.

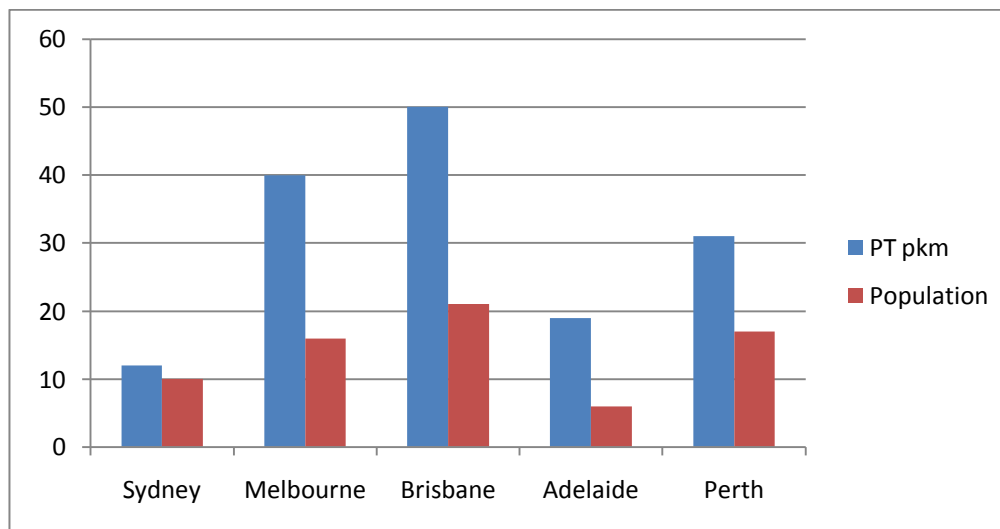
Even a handful of western countries, which tend to spread horizontally and support low-density developments, have regarded TODs as highly valuable in an effort towards sustainable development. Notable transit reforms have appeared in several metropolitan centres in the United States, the Netherlands, Denmark, Germany, Sweden, Canada and even certain parts of Australia (for examples see *Transit Oriented Sustainable Developments*).

Among the most successful, and to the envy of most other Australian cities, is Perth, Western Australia. Once a vast region with the highest rate of car dependence compared with any other Australian state, Perth has seen emerging TOD policies since the introduction, in 1988, of the state ‘Development Control Policy 1.6 Development around Metropolitan Railway Stations’, whereby all future planning applications adjacent to railway stations must support rail use and access by providing high density residential development. Although slow to take effect, Perth has definitely been making steady progress.

It may seem surprising then that while Sydney has the biggest and fastest growing population for any Australian state, our transit system is fundamentally lacking the infrastructure to support the

current, let alone, future growth. Figure 1 shows current levels of transit patronage per km travelled compared to population growth.

**Figure 1: Public Transport Patronage Growth Compared to Population Growth
(% growth 1997 – 2007)**



Source: Data provided by the Bus Association Victoria

Clearly Sydney is far behind other states in terms of transit patronage, with more people choosing private over public transport, despite rising population growth, increasing pollution, road trauma and congestion.

With levels of transit patronage so low, Sydney is facing a serious sustainability challenge. As the Greater Metropolitan Area spreads further to allow for a greater number of residential housing, there are concerns regarding increased car dependence, a major source of transport emissions and traffic congestion, as well as a greater dissatisfaction with NSW transportation and lack of services and infrastructure.

TODs would increase the confidence that residents of NSW have about our transit system and its reliability. It would encourage a more transit friendly environment with significant benefits.

Benefits of TODs

Environmental

A number of studies have been made into the effectiveness of TODs in relation to automobile dependence. In 2003, for example, it was found that Californian residents who lived within close proximity to a TOD were five times more likely to enjoy the benefits of public transport than those who did not (Lund, Cervero & Willson 2004). Another study of over 100 TODs across twelve regions throughout America concluded that residents were 2.5 times more likely to use public transport compared with the average citizen of the region (Renne 2005).

Residents of TODs are also far less likely to own a private vehicle according to one American study. The Centre for Transit-Oriented Development (2004) found that residents located within walking distance of a railway station³ owned 0.9 cars per household. This is compared with 1.6 cars per household in non-TOD centres.

In the Green Paper on the Carbon Pollution Reduction Scheme (2008, pp. 99-102), it was noted that transport emissions account for 14% of Australia's total emissions. Of the total amount, 54% of emissions come from private vehicles, compared with 6% and 5% coming from rail and sea transport respectively. This is compounded by the fact that the demand for private transport has been projected to increase by 30% by 2020, placing increased pressure on our already congested roads.

This is coupled with the data compiled by the ARA in their report titled 'The True Value of Rail'

Table 4.1: Carbon emissions from passenger transport, 2006

	Total emissions	Total distance travelled	Emissions/km travelled
	Million tonnes of CO ₂ equivalent	Billions of passenger km	kilograms of CO ₂ equivalent per passenger km
Road			
Cars	46.6	287.5	0.16
Buses	1.4	21.9	0.06
Motorcycles	0.3	2.1	0.13
Total	48.3	311.5	0.16
Rail^(a)			
Total	1.5 ^(b)	13.6 ^(c)	0.11
Difference			0.05

Source: ARA The True Value of Rail, 2011, page 27

³ Walking distance was recorded to be within 5-10 minutes from the station itself.

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This demonstrates how cars alone release more than 40 times more CO₂ into the air than rail per each kilometre travelled by a patron. Coupled with the benefits of TOD studies discussed earlier in terms of increased rail patronage and lower levels of car ownership, it is safe to say that such a development above, and adjacent to rail corridors, would greatly decrease CO₂ emissions.

Financial

TOD: saving money for the community and oneself

The financial benefits of TODs are by far one of the most important factors behind their proposal. As stated above, residents of TODs are more likely to commute via public transport and less likely to own a car, of which the immediate benefit is less congested roads. However, the financial benefits of a decrease in car usage can also be far more inconspicuous.

In 2007, the Bureau of Transport and Regional Economics, now the Bureau of Infrastructure, Transport and Regional Economics, conducted a study into the cost of traffic congestion in Australia. The Bureau found that traffic congestion cost the Australian government approximately ten billion in 2005, with Sydney (3.5 billion) as the highest cost location compared to all other Australian cities. According to this kind of growth, these costs are predicted to double by 2020.

However, as Stanley and Hensher (2009) note, traffic congestion costs are merely one part of a whole that make up the total external costs of urban transport, albeit a significant part. Costs associated with road users also include road tolls, air and noise pollution and various accident costs. This is not to mention parking costs for private vehicles. The result of adopting schemes encouraging transit use would therefore be greatly beneficial to the individual, whilst minimising government cost by a large proportion, channelling excess funds into systems that need them the most.

Among the benefits extended to individuals, Newman (1999) also estimated that the cost of a new fringe household in Western Australia was more than \$73 000 compared to an inner city development costing \$20 000 (excludes health and education infrastructure costs). Although, the amount by which a property would increase in value once constructed near a rail corridor could potentially become more beneficial to the developer, rather than the individual. Here the government could intervene to regulate the price at which developers buy up air space, and the maximum price at which the individual is financially able to purchase the property.

TOD as a sustainable approach to funding rail infrastructure

TODs are heralded for the financial benefits they provide to transit infrastructure itself. Historically, rail developments in Australia, unlike road developments, have always found it hard to find a sustainable financing mechanism. From the 1970s to the 1990s, the bulk of federal transport funding went into road developments (out of total 25 billion, only one billion was dedicated to rail developments). As car dependence increased throughout the 1990s and 2000s, a market process was employed by States using road tolls and privatisations to generate substantial cash flows that would pave the way for further road construction and planning. This gave road infrastructure an unfair advantage as it has continued to grow whilst rail development has since floundered.

The benefit of TODs is that in selling the airspace above and adjacent to, railway stations, the revenue earned can be channelled directly back into financing and improving rail infrastructure. An example of this was Subi Centre in Perth, Western Australia, in which the construction of a TOD not only increased fare box revenue, but was also able to gain enough momentum that it now earns the Western Australian Government, and local council, a healthy revenue (Howe, Glass & Curtis 2009).

Social

TOD as a tool of social capital

A third, less documented, although no less important, benefit of TODs are their ability to create a community culture and the health benefits salient to those types of communities. Bertolini (2000) has claimed that TODs allow for a greater degree of social interaction amongst its residents. Rice (2009) also conducted a number of informal surveys on why people prefer TODs, of which most replied that it created more 'vibrancy and community life' due to greater accessibility. One such example provided by Rice was Footscray, a residential suburb 6 km west of Melbourne and a node of public transport with three rail lines, a tram line and 13 bus routes servicing the area.

Various other studies have found a high correlation between lower body mass indices and reduced risk of problems related to obesity, and residents of Transit-oriented communities (Frumkin and Jackson). That is to say that those who live in car dependent communities are more prone to become overweight, and have a higher risk of problems associated with obesity.

Barriers to implementing TODs

Similar to any policy decision, there are a number of objections and barriers when it comes to planning a TOD. Some of these barriers include:

- Dislike of change, or desire to maintain the status quo
- An identity change of community: from low-density, family oriented suburbs to high density, highly populated regional centres.
- Fear that TOD is just about making a profit for private developers
- Debatable potential for higher density developments
- Funding provided by financial institutions for the high density developments

According to a number of studies undertaken on TODs in North America, a large proportion of the opposition has come from local residents and existing retail businesses. The concern is that the ideals that TODs espouse are idealistic and do not translate well on the ground (Nelson and Niles 1999). One concern is that without sufficient parking provisions and only a few scattered shops surrounding a transit node, retail businesses would lose out. This is based on the inference that retailers tend to be more successful when they are clustered together and are easily accessible with sufficient parking provisions.

Dual supervision of a TOD by both public agencies and private developers has also been noted to hinder the potential for a successful TOD. This is primarily when government uses surplus land to encourage partnerships with private developers because it lacks the financial means to do it alone. A study of ten dually supervised TODs across the United States found that developers were concerned about the government's role in the planning process as they felt they had a limited understanding of the tools needed to create a successful mix-use development (IISTPS 2000).

Despite the appealing nature of TODs in terms of mobility, price and efficiency, there is also the concern that most young families or retirees may not looking for cluster style housing, but quite the opposite. The question here then is whether TODs are adding to the community or merely providing transitional housing to a small segment of society.

Case study: Subi Centro, Perth Western Australia

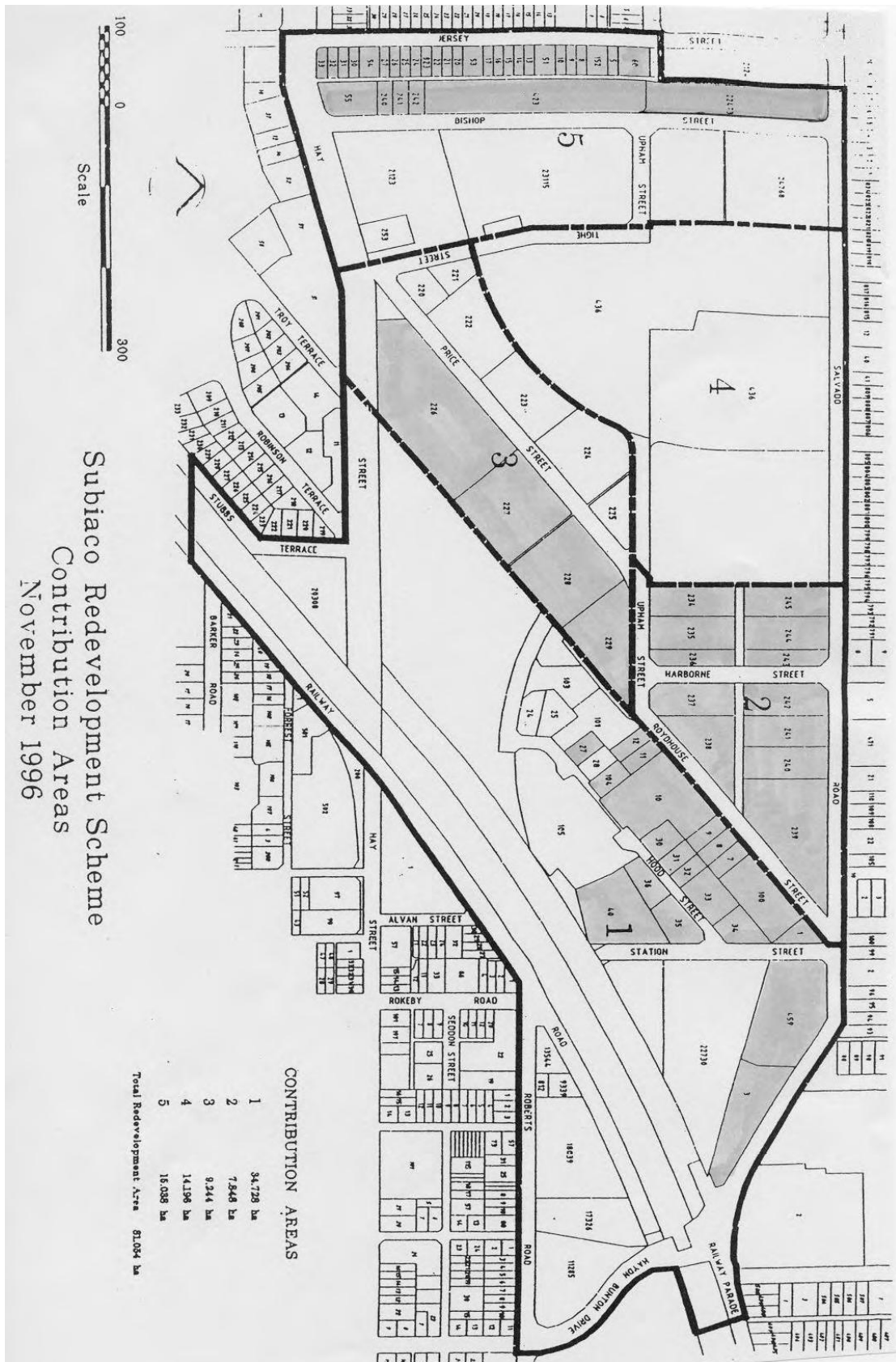
The case study we have chosen is based on the chapter by Howe, Glass and Curtis published in *Transit Oriented Development: Making it Happen*. We have chosen this particular case study as it demonstrates an example of best practice based on its merits post construction. Not only is it successful in its own right, in that it was financially successful, efficient and experienced little pitfalls, it was also designed in such a way that allowed for an easy integration into the community without adversely affecting the existing area or stifling local business. This chapter will firstly look at the impetus for change surrounding the Subi Centro project before making a more detailed inquiry into the perceived funding and challenges of the project.

Background

Subi Centro was an extensive, transit-oriented redevelopment project located in the inner city suburb of Subiaco, just 3 km west of the Perth CBD. Facing a period of uncertainty, with a large number of industries closing down and the general region in disillusion without any real cohesion, the Western Australian Government began exploring the possibility of redeveloping the site. The result was a plan to lower the above ground railway and construct an above ground, mix-use development surrounding it.

The redevelopment was overseen by the Subiaco Redevelopment Authority (SRA), a statutory authority created by the state government and primarily self-funded with the exception of the initial ‘seeding money’ given to them by the state through loans by collateralising the land. The deal, bargained with the creation of the SRA, also provisioned ample ‘up-front public opportunity for input’.

The design process



Source: graph provided by the Subiaco Redevelopment Authority

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In order for the redevelopment to be financially viable, it was essential that the southern commercial district, along Rokeby road, open up to the new development area north of the station. The north and south were then reconnected through a host of retail businesses integrated with higher density residential uses. And surrounding this are medium density residential areas.

One of the specifics of the project was not to disturb the existing retailers too much in the area. Thus, while initial commercial analysis encouraged planners to allow approximately 20,000 sq. m of the developed area to retail floor space, the community felt this would encroach on the already established businesses settling instead on 10,000 sq. m.

A reoccurring concern of planners and residents alike was that of parking provisions. Despite the low number of vehicles frequenting the redevelopment area and its surroundings, the SRA thought it necessary to provide at least some parking. The decision was to provide the majority under ground, with limited above ground parking allowing for maximum pedestrian activity.

Among the design constraints was the decision that there are to be no buildings directly above the underground railway corridor. This created a number of missed opportunities for developers who could no longer go ahead with previous plans. Additionally, allowing for the lowering of the street and greater open space provisions had not been unaccounted for in previous cost analysis and thus created minor budgetary problem.

Redevelopment evaluation

The Subi Centro development area has now been up and running for almost 2 years. It has not only succeeded in its original plan to create a well integrated mix-use development with ample public space and pedestrian activity, but has also become a place of attraction in itself with a number of functioning cafes, restaurants and a food market centred around the Subiaco railway station.

The proportion of land dwellings centred around the station have increased exponentially, from 0 in 1996 to 1034 in 2008, and retail floor space has almost doubled from 7,900 sq. m in 1998 to 16,103 in 2008 attracting significant investment and economic activity. Transit ridership, boarding at Subiaco station, has also increased quite considerably from 9000 in 1996 to 16,500 in 2008.

In terms of the financial outcomes of the project, it has gone far beyond earlier expectations. Initially a self-funded project, it is now generating a healthy revenue for both the state and the

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local council. Land values north of the station have increased 30 fold from \$80 per square metre in 1994 to \$2700 in 2005. Commercial land value has equally increased to \$2000 sq. m (SRA 2007/2008).

Based on these financial benefits, local businesses, who once vocally opposed the TOD, have now been quelled, and are instead heralding the development for encouraging increased patronage to the area.

However, while the project has turned out to be a success, this cannot put it down to pure management and planning. Other things need to be taken into account, including time and place. Subi Centro always had potential: its wide open spaces, relatively under-used and almost all held in public ownership, provided the state with major decision making ability and control. An additional attribute was that the site was already close to the CBD area, and so convenience timed with enthusiastic private developers who saw potential in the area, added to the site's success. Good management and innovative planning are critical: the ability to make the right decisions at the right time and place.

Conclusion

The RTBU appreciates the opportunity to write this submission and urges the NSW Transport for Infrastructure and Development to continue its research into the utilisation of air space above, and adjacent to, the rail corridor in the Greater Metropolitan Area of Sydney, including the Hunter the Illawarra. Mixed-use developments surrounding rail stations and their respected corridors are the way of the future and are a lasting solution to Sydney's transport dilemma. TOD is a tool for sustainable development: it's environmentally friendly, financially profitable and socially rewarding.

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