

# Melbourne Australia's Tram System

## A Green Urban Design

Gavin Hecker

As an American growing up in the Washington D.C. metropolitan area, I had always looked to the car as my main source of travel to and from my suburban home only six miles away from downtown. Even after the Metro (D.C.'s subway system) had completed its above ground line, linking my town to downtown, it was still hard for people in my home town to stop commuting to D.C. in their cars, and start riding the Metro to work, social functions, and other activities. Unlike Washington D.C., Melbourne, Australia has maintained a system of rails which trams have been using since 1889.<sup>1</sup> The city of Melbourne has always kept its tram system intact. While other cities in Australia and around the world, such as Sydney and Philadelphia were tearing up existing rails to make room for busses and cars, Melbourne chose to maintain its extensive network of rails.<sup>2</sup> We can thank Major General Robert Risson, who played a key role in keeping Melbourne's tram network intact over the crucial years he was in charge of the system, when most other cities were dismantling theirs. Risson would defend public transit, insisting that it was, "essential to the city's lifeblood".<sup>3</sup> Currently, there are 31 individual tram routes in the metropolitan area, eight depots, 1800 staff and a fleet of 474 trams, providing nearly 34,000 services a week and providing service for over half a million passengers per day.<sup>1</sup> As compared with other cities of similar stature, Melbourne has maintained its character and presence as a quiet walking city with plentiful open spaces and parks, with wide avenues and unpolluted air. I believe that Melbourne would have joined a number of the world's cities with their parking problems, traffic, and pollution if it were not for the diligent upkeep of its tram system.

Melbourne was in a sense formed around its street carts in the mid 19<sup>th</sup> century, which at that time were pulled by horses. The tram system has grown from horse drawn carriages, street carts, cable cars, streetcars, and then to electric trams with each stage increasing in technical complexity, but retaining a significant public interaction<sup>4</sup>. In Melbourne, the urban rail system had been built and electrified almost to its present extent by the mid -1920s, but funding for road construction lagged behind due to a lack of federal funds until the late 1960s.<sup>5</sup> Melbourne's suburbs were built around these rail lines. This development of Melbourne's extensive rail network led to a large movement of people to the suburbs long before the car began to take center stage in

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<sup>1</sup> [www.yarratrams.com.au/corp\\_info/facts\\_figures.asp](http://www.yarratrams.com.au/corp_info/facts_figures.asp)

<sup>2</sup> [www.historymania.com/american\\_history/Trams\\_in\\_Melbourne#History](http://www.historymania.com/american_history/Trams_in_Melbourne#History)

<sup>3</sup> *Cervero, Robert. The transit Metropolis, A Global Inquiry*

<sup>4</sup> *Transport Program 2003-2006, City of Melbourne. p.3*

<sup>5</sup> *Mees, Paul. A Very Public Solution*

modern transportation. The result was that Melbourne had space to grow along its rail lines. This gave Melbourne's suburbs more of a traditional neighborhood layout, which was centered around rail lines as opposed to roads and highways. Having spent some time myself in Melbourne, I found the suburbs to be places which I enjoyed visiting, all boasting unique little downtowns of their own. Growing up in the Washington D.C. area, I related the word suburb to strip malls and housing developments, which are oriented toward a car based suburban plan. Most American cities began to build major freeways progressively from the 1940s on. Central business districts took a back seat to the convenience of large malls with huge parking lots and no foreseeable traffic problems. As America began its drive in culture, Melbourne stuck to its rail lines.

Trams in Melbourne made it possible for the city to create expansive parks as opposed to building parking lots. When an outsider first visits Melbourne, they can immediately notice, that it in fact does look like a big city, but does not sound like one. There's no noise, no horns, and there is no need to raise one's voice to have a conversation on the city street. As in any modern industrialized city, there are people, cars, busses, trucks, skyscrapers and businesses, but it just seems to work better than the average American city. The visitor then begins to notice that lots of people are using these lovely trams that seem to go everywhere without creating much noise or smoke, leaving space for cars, and bikes, and sidewalks for people to walk on. In general, the extensive tram system allows more open space in Melbourne. This is due to a continued effort to keep them as part of Melbourne's infrastructure throughout its history.

As with any mass transit system, the goal is to maximize the number of passengers while minimizing the amount of money and energy needed to run the system. In order to maximize the use of a transportation system, it must be cost efficient, easy to understand, and fast for those who may ride on it. Melbourne's tram system is just that. Metcards make riding the trams cheap and easy. In July 1983 the State Government decided to integrate the City's three major forms of public transport - trams, buses and suburban trains to create a coordinated public transport network. The operations of the Melbourne & Metropolitan Tramways Board were taken over by the Tram & Bus Division of a new government body, the Metropolitan Transit Authority, and the Metcard was introduced shortly thereafter.<sup>6</sup> The Metcard system is a payment method, which provides access to all of Melbourne's trams trains and busses. These Metcards are interchangeable between modes of transport, and the fare is based on specific zones and time of travel. Metcards can be purchased for cash on any tram or at over 900 locations around the city, and some trams now even take debit cards<sup>7</sup>. Metcards are bought through an automated system, which cuts down on the cost of employing ticket agents, and keeps tram drivers from having to deal with taking money and issuing tickets. The Metcard system provides concessions or discounts for higher quantity fare purchases, student purchases, senior purchases, Sunday

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<sup>6</sup> [http://www.yarratrams.com.au/corp\\_info/our\\_fleet.asp](http://www.yarratrams.com.au/corp_info/our_fleet.asp)

<sup>7</sup> [www.metlinkmelbourne.com.au](http://www.metlinkmelbourne.com.au)

purchases, and other off peak time purchases. Some examples of Metcard fares are as follows. A two hour Metcard which allows unlimited train, tram and bus travel for at least two hours within selected zones. The 10 x 2 hour Metcard, which is a single ticket and allows ten two hour trips at a discounted price. Or, the Daily Metcard, which allows unlimited train, tram and bus travel for a whole day within selected zones.<sup>8</sup> Melbourne even has a free tram, which runs a square loop route around the central business district, and picks up passengers every 15 minutes. The free tram is the only tram still running in Melbourne that maintains the old style trolley look from the early 1900s<sup>9</sup>, adding to the city's character. The rail design of the system reduces both the noise factor and the input of energy into the trams, as compared with busses, which use fossil fuels directly. The use of electricity from Melbourne's electric grid makes it possible for the trams to essentially use any source of energy on the power grid, which could be anything from solar to wind power. Melbourne trams travel at speeds equivalent to that of cars in the city, and in many places they travel in special lanes where cars are not allowed.<sup>10</sup> The ease and speed of trams in Melbourne has kept the number of riders high, which inherently reduces the total amount of energy consumption within the metropolitan area. Another feature, which Melbourne has more recently been incorporating into the tram infrastructure, is trams and passenger loading platforms, which are wheelchair accessible. The new trams are advertised as "one of the most advanced trams in the world with a low floor, wide doors and space on board for wheelchairs".<sup>11</sup>

Covering a population of about 3.4 million residents, Melbourne has the third largest tram network in the world with 245 kilometers of double track.<sup>12</sup> These trams are both as much a part of Melbourne's past as they are its future. With the downfall of the automobile based city in the not so distant future, Melbourne is set to just simply stay the course as it has throughout much of its history. Current tram use in Melbourne is nowhere near capacity, and if the number of cars on the road were to decrease, trams would be an even more effective mode of urban transit. In the future, trams in Melbourne could even be in a position to effectively utilize solar power as a source of energy for propulsion. Large roof top surface areas coupled with a relatively dry sunny year round climate, would make Melbourne's trams ideal for solar power optimization. Trams could eventually replace existing bus routes leading into the suburbs as well. There will really be no need for bus routes in Melbourne's future, just as there will be little need for cars in the central business district.

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<sup>8</sup> [http://www.metlinkmelbourne.com.au/metcard/fares\\_zones/](http://www.metlinkmelbourne.com.au/metcard/fares_zones/)

<sup>9</sup> [www.greenleft.org.au](http://www.greenleft.org.au)

<sup>10</sup> [www.doi.vic.gov.au/DOI/Internet/transport.nsf/AllDocs/C7E281CCFFC65BFC4A256AE600FE6BF?OpenDocument](http://www.doi.vic.gov.au/DOI/Internet/transport.nsf/AllDocs/C7E281CCFFC65BFC4A256AE600FE6BF?OpenDocument)

<sup>11</sup> <http://www.e-bility.com/articles/trams.shtml>

<sup>12</sup> [http://www.yarratrams.com.au/corp\\_info/facts\\_figures.asp](http://www.yarratrams.com.au/corp_info/facts_figures.asp)