The Nambour Heritage Tramway Project: Business Case update (Dec. 2016)

Overview:

Stage one of the Nambour Heritage Tramway Project, and the primary concern of this Business Case Update, is designed to re-activate the existing heritage listed tram line that was initially established (1897) to transport sugar cane through the centre of Nambour to the Moreton Central Sugar Mill. The Tram will journey from the Western Terminus at 28 Mill St Nambour down Howard Street and return, a round trip distance of approximately 2km. The project is a key component of the Nambour Activation Plan.

Stage Two (at some future date) would see the Tramway extended from Howard St to the Nambour Showgrounds via the Nambour State College Farm.

Stage Three would see the Tramway link with the proposed Nambour-Coolum Trail.

The project scope includes the purchase of a battery powered, solar generated, two foot gauge heritage style tram, along with the provision of depot and terminus facilities at 28 Mill St Nambour, and intersection and signal upgrades as necessary.

At the Ordinary Meeting of Council on 23 April 2015 Council resolved (OM15/52) to support the Nambour Heritage Tramway project via a joint funding and partnership arrangement with the Nambour Heritage Tramway Group (now the Nambour Tramway Company). Council will provide $1.5 million over three years to progress the project. Council funds were contingent on raising $600k in funds from the community, local businesses, and other sources of grant funding. TNT Co has met this fundraising requirement, with the assistance of the Nambour Alliance, through the granting of a National Stronger Regions Grant ($500,000.00) for the building of the Western Terminus and over $100,000.00 funds raised through various community based efforts (Tramfest, grants & donations).

The Nambour Tramway Company (TNT Co) is to act as Rail Infrastructure Manager and Rail Transport Operator, and are in the process of obtaining appropriate accreditations to satisfy the requirements of relevant Queensland legislation.

The governance and delivery model for the tramway scheme has been formalised in the Heads of Agreement.

The Feasibility Analysis that was presented to Council in April 2015 identified a range of social and economic benefits from the venture, including:

- the potential to assist in strengthening the identity and uniqueness of Nambour, leading to improved community pride, visitation and expenditure in the town.
- connect with and become part of the broader fabric of tourism attractions of the Sunshine Coast hinterland.
- commuter light rail link between two new supermarket precincts and

- the potential to connect, in future, to the Nambour State School Agricultural Faculty and Nambour Showgrounds precinct, and to Council's proposed Nambour – Coolum walking trail.

The Nambour Tram project also offers significant strategic value:

- A long term vision beyond current plans.
- Value for the region, as well as to Nambour.
- Attract visitors to Nambour.
- Nambour gets to tell it's story
- Linkages to Nambour's Historical Precinct and the recent past.
- A key element of Nambour Activation Plan.
- Businesses will leverage off a key tourist attraction.
- Presents opportunities to Nambour.

The Plan

We have borrowed heavily from the *Feasibility Analysis of the Nambour Heritage Tramway (R0300001) by C Change: October 2014.*

TNT Co have adopted a financial model based on the following:

- One Tram operating on a six day service, 8.00am to 6.00pm with an 'each way trip' interval of 30 minutes with a capacity to carry 28 passengers. Running times, days of operation and the type of service will be refined as the service matures.
- The advice and guidance of other Heritage and Tourist Rail operators has been sought and has been utilised when crafting this plan.

Assumptions are:

- Reduced land acquisition costs through a community lease
- Volunteer labour for ongoing operations and maintenance. Maintenance will include building maintenance as well as the Tram maintenance. Both tram & building are new and volunteers and working-bees will minimise this expense. We planned for an 'all volunteer' labour force for the start of operations. This is not unusual in the early days of heritage/tourist railways.
- We expect to have a manager/safety officer paid at ½ FTE.
- Gold coin ride ($2 adults, $1 school students, children, concession & seniors)
- Assumed 30% utilisation. Other heritage/tourist railways we have contacted have quoted between 65-85% utilisation. They have been operating for some time but their "bums on seats" numbers have remained remarkably steady. We decided on a 'worst case' number so halved their low number.

- Sale of annual passes, additional merchandise and sponsorship arrangements will add significantly to revenue.

- Other funds will be raised via:

    - Corporate sponsorship:
      We have to date received $28,180 from corporate donation and have strong indications from the business community that they see great benefits in being involved, long term, with the project. There are many opportunities for business to leverage off the presence of the Tram through Nambour and to interlink their particular customer base with its operation. We would expect sponsorship to increase as the project gains more traction and the public can see some on ground progress.

    - Community Funding:
      The current two streams of community funding come from the highly successful Tramfest which has raised, to date – 30/12/2016, $60,058.12 and community coin donation which has raised $10,050.10. Considering that the funding effort has only been underway for 12 months we believe it shows a strong level of support and community buy-in.

    - Grant applications:
      We have secured $500,000.00 from the National Stronger Regions Fund. We have also received $35,000 from the Gaming Fund for design and engineering work on the Tram.
      Our application for $300,000.00 from a State Tourism Infrastructure Grant has been upgraded and re-submitted. There are a number of additional opportunities for grant funding that have been identified.

    - Donations:
      TNT Co has Deductible Gift Recipient status. We expect this area to be developed substantially.

    - Crowd Funding:
      This trigger will be pulled to coincide with a major 'Tramway' milestone and will source further financial assistance from a national and international community. Crowd funding will be used as a marketing tool as well as a fundraising tool.

    - Lottery/Art Union:
      To be explored.

As is the nature of any Business Plan, a certain amount of flexibility and fluidity has been accommodated and provided for. This Plan is expected to develop and evolve, it is not a rigid structure. Opportunities, differing needs, and the unforeseen, will require a high degree of flexibility in effort, energies and management in response.

The capacity to implement this plan and to respond and evolve is well within the makeup of TNT Co board which has a mix of professional experience and expertise.

It's been done before (circa 1928), we can do it again!

Capacity to implement: Key personnel and experience

Paul Moriarty
Director, Nambour Tramway Company
Paul Moriarty is a recently retired professional consultant. Prior to his retirement he ran a management and marketing consultancy for more than 20 years, assisting clients in the public, private and not-for-profit sectors across Australia and South East Asia.

Paul has extensive experience devising and delivering management strategies, Marketing plans, Quality Assurance programs, and staff recruitment and training programs. Additionally, Paul has delivered dozens of successful media launches and advertising campaigns. He also has significant international business experience, especially in Singapore and Hong Kong.

Paul has also worked with volunteers across various endeavours over the past decade. The most notable of these involved recruiting, training and managing 85 volunteers for a community information centre. Paul has completed training courses in recruiting, managing, training and retaining volunteers through Volunteering Queensland.

Paul holds a Bachelor of Management from Sydney University and in 2001 was awarded a Centenary Medal for his services to international relations.

Peter Clark
Director, Nambour Tramway Company
Peter Clark is a registered commercial and residential builder with 35 years' experience as a qualified tradesman. Peter is also a business owner, manager and board member.

As a builder, Peter has undertaken dozens of commercial and residential projects throughout the Nambour region, with a particular passion for construction and

renovation projects that increase the amenity and appeal of Nambour's central business district.

Until recently, Peter and his wife owned a retail business in Nambour's main street, which they established in 1987 and sold in January 2016.

Peter has lived and worked in Nambour for more than 50 years. He is a recognised community leader, having served the Nambour community for decades through the Chamber of Commerce, Scouts, Rotaract, Jaycees, Rotary, Nambour Futures, Nambour Festivals Inc. and Nambour Alliance.

During his time volunteering for Nambour's community organisations, Peter has spearheaded (or been a key contributor) to some significant projects including:

- The redevelopment and ongoing operation of the Rotary Food Stall (at the Sunshine Coast Showgrounds, Nambour;
- The construction of the Centenary of Federation Clock Tower and Fountain in Nambour's main street, for which Peter also donated his labour; and
- In the early 2000s during his time as President of the Nambour Rotary Club, Peter secured land for, and then helped to oversee the construction of, the Hear and Say Centre Sunshine Coast (Nambour). This is now a vital piece of infrastructure for the Sunshine Coast's deaf community.

Peter is a Director of Sundale, a not-for-profit aged care provider headquartered in Nambour that has 12 facilities, 525 staff and an annual turnover of more than $47 million. Peter was previously a voluntary Board Member of Nambour Alliance from 2008-2016.

Peter is a member of the Australian Institute of Company Directors (AICD).

Kristen Beckhaus
Director, Nambour Tramway Company
Kristen Beckhaus is a qualified solicitor and the Director at Beckhaus Legal.

Kristen was admitted to practice law in 2004 and has worked in both the public and private sectors. She commenced her legal career with the Office of the Director of Public Prosecutions in Beenleigh, Queensland as a law clerk and then a prosecutor.

In 2006 Kristen joined H Drakos & Company in Brisbane and had carriage of numerous different matters including civil and commercial litigation, criminal matters and estates.

Before practising law, Kristen worked in marketing roles in the IT sector in Australia and abroad.

Kristen's professional qualifications include:

- Admitted as a Solicitor of the Supreme Court of Queensland
- Admitted as a Solicitor of the Supreme Court of NSW

- Admitted as a Solicitor in the High Court of Australia
- College of Law Course
- Bachelor of Laws from the University of NSW
- Bachelor of Commerce from the University of NSW.

Outside of the office, Kristen enjoys running, swimming, going to the horse races and spending time with family and friends. She is a member of the Sunshine Coast Law Association, Queensland Gallery of Modern Art, Gympie Turf Club, Lazy Runner Club, Brisbane Royal Show and the Royal Agricultural Society of NSW.

Ron King
Director, Nambour Tramway Company
Ron King is an IT professional and business owner, who has established and run two successful businesses and managed and delivered large projects in Australia and Europe.

Ron is the owner of Wilenco Pty Ltd, a respected equipment supplier and service provider within the digital printing industry in Australia. He founded Wilenco in 1984, in anticipation of the IT developments that were poised to revolutionise the signage and graphics industries worldwide.

In the late 1980s Ron formed an association with several key industry suppliers to develop and promote Sign Shows in Australia. While Ron is no longer involved directly, this has developed and grown to become Visual Impact Sign & Digital Print Exhibitions, hosting several major trade exhibitions annually.

In 2002 Ron was asked by Remark International BV to assess their IT systems. After undertaking a three week assessment at their head office in Amsterdam, The Netherlands, Ron was contracted to complete a €2 million project to develop new software, install new IT hardware and manage their IT requirements globally. The project and ongoing support were managed successfully, with Ron's involvement with Remark continuing until 2009. The software and systems developed are still in use.

Prior to establishing Wilenco, Ron founded Sewplus in 1978, an importing and Distribution Company providing supplies to the craft and home sewing industry in Australia. Sewplus sourced products globally and distributed nationally to retailers, department stores and manufacturers. Ron sold Sewplus in 1995 to concentrate on Wilenco.

Ron relocated from Sydney to the Sunshine Coast in 2001. He has strong local, roots with both family and his business located in the region.

Rhonda Billett-Haire
Board Member, Nambour Tramway Company
Rhonda Billett-Haire is a Sunshine Coast Business Owner of Uptown Hair Studio and Ocean Nomad Australia. Rhonda has been self-employed for some 20 or more years and prides herself on being an active member of the local Sunshine Coast community. Rhonda is Trade qualified and has expertise in Marketing and Social Media engagement.

Rhonda is a savvy business leader, and has held roles on various boards such as Nambour Alliance, Sunshine Coast Business Awards and Nambour Tram Way. Her business professionalism was acknowledged with her business being inducted into the Sunshine Coast business Awards Hall of Fame after winning 3 awards for her commitment to business profitability and success in the region. Rhonda has also been awarded with the Young Business Leader of the Year Award back in 2005. Rhonda's leadership and ability to train others is evident with her business involved with the Queensland Training Awards, leading the youth into positive employment outcomes.

Rhonda is a very connected professional, always with an open ear in the great community for the prosperity and future of the Sunshine Coast.

Key Advisory Personnel

Phil Barker
Director, Rail Safety Consulting Australia
Phil Barker has worked in the rail industry for over 35 years and has wide-ranging experience in the assessment and implementation of railway operations safety management systems and operating practices. His areas of specialisation include occurrence investigation and Exceeded Limit of Authority (SPAD) management.

Previous roles held include:

- Chief Accident Investigator, Saudi Railways Commission;
- Director, Rail Safety Regulation, Queensland Department of Transport;
- General Manager Safety - Rail, Adani Mining;
- Rail Business Manager and Principal Consultant, Halcrow Ltd;
- Senior Rail Accident Investigator, Australian Transport Safety Bureau,
- Train Crewing Manager, Queensland Rail; and
- Safeworking Superintendent at Queensland Rail, a role which he held for 25 years.

This experience is supported by formal qualifications including a Master's Degree in Rail Operations Management (with Distinction) from Central Queensland University,

an Advanced Diploma in OH&S Management, a Diploma of Transport Safety Investigation, a Diploma of Government (Investigation), an ATSB Human Factors in Transport Investigations Certificate, and a Certificate IV Total Quality Management. Phillip also holds a current Licence to Perform High Risk Work in Stream Boiler and Reciprocating Steam Engine.

Phillip has published a number of rail operations safety related articles in various industry journals and has received the Queensland Rail CEO's Certificate of Commendation for innovation.

Phil is a Fellow of the Institution of Railway Operators, Fellow of the Chartered Professional Member Safety Institute Australia and a Registered Safety Practitioner, Australia. He is also a Certified Generalist OHS Practitioner, and an Associate Fellow of the Australian Institute of Management (AIM).

Trevor Smith Dip Arch (QUT) PHF
Greenway Architects

Rod Wilkins BSc (Hons)
Quantity Surveyor/Cost Planner/Estimator/Project Manager

Christine Perren CPA
SDE Accountants

Rilla Kerr
Administration

Friends of the Tram: Volunteer Skills Audit

TNT Co has 23 registered volunteers on its books with specific skills in the areas of:

Architect, Art, Catering, Electronics, Engineering, Graphic Design, Guide, Heritage,

Marketing, Mechanic, Murals, Music, PR, Rail Operations (light), Rail Safety,

Safety (Workplace), Woodwork.

TNT Co also has 40 registered volunteers on its books with “anything we can do to help” skills.

In conclusion

This 5 year journey has continued to attract local, national and international interest. It has the unwavering support of a group of volunteers who can see the long-term benefits of this, big picture project for Nambour and the whole region. They carry

with them the attitude of 'whatever it takes' to see all three stages of the project reach fruition.

Our position remains unchanged from our initial presentation to Council, that –

- The business model we support is based on the predominant use of volunteers for the day to day operation of the Tramway, our Visitor Information Centre and building and vehicle maintenance.
- Donations of material and labour should be a factor in the construction of the Terminus building.
- By allowing those who wish to be part the construction process, we bring the whole community along for the journey and build strong community ownership.
- That the property situated at 28 Mill Street was one that council suggested, and offered us as the best site, we agree.
- The use of 28 Mill Street relieves the need for land acquisitions beside the Mill Cottage on the corner of Mill Street and Mill Lane and the Eastern, Aldi end to house and maintain the vehicle.
- This property has, since the early 70's, been a community use as a day care facility, it was originally built by the community as the first child care facility on the Sunshine Coast.
- We believe a community lease on this land is a fair and reasonable request, given that the substantial financial and physical input by the community will sit on council owned land and remain a council asset.

We ask that your deliberations give the whole project the dignity it deserves, the position it seeks and the best possible long term future.

THE NAMBOUR TRAMWAY COMPANY LTD
SUMMARY OF SCENARIO

Scenario relates to the following:

Location of Terminus	28 Mill St Nambour
Built by TNTCo	Cost $799,982
Lease of land from council	Community Rate

THE NAMBOUR TRAMWAY COMPANY LTD
PROJECTED CASHFLOW STATEMENT
NAMBOUR HERITAGE TRAMWAY PROJECT

OPERATING FUND	NOTE	Yr1 $	Yr2 $	Yr3 $	Yr4 $	Yr5 $	Yr6 $	Yr7 $	Yr8 $	Yr9 $	Yr10 $	Yr11 $
Opening Balance of Operating Fund		*99,401*	*122,938*	*142,498*	*162,965*	*185,170*	*206,841*	*229,457*	*253,898*	*276,855*	*300,275*	*326,603*
Revenues												
Daily Ticketing		32,506	32,506	32,506	33,676	33,676	33,676	34,879	34,879	34,879	36,127	36,127
Annual passes		30,000	30,000	30,000	30,900	30,900	30,900	31,850	31,850	31,850	32,805	32,805
Merchandising/Shopper Dockets		5,500	8,000	8,500	8,500	8,500	10,000	10,000	10,000	10,000	10,000	10,000
Advertising/Sponsorship		28,500	28,500	28,500	29,400	29,400	29,400	30,280	30,280	30,280	31,200	31,200
Tramfest		25,000	25,000	25,000	25,900	25,900	25,900	26,825	26,825	26,825	27,785	27,785
Interest Income	5	2,982	3,688	4,275	4,889	5,555	6,205	6,884	7,617	8,306	9,008	9,798
Total Revenues	10	*124,488*	*127,694*	*128,781*	*133,265*	*133,931*	*136,081*	*140,717*	*141,451*	*142,139*	*146,925*	*147,715*
Operating Costs												
Labour		45,000	45,000	45,000	46,350	46,350	46,350	47,740	47,740	47,740	49,175	49,175
Utilities		4,000	4,000	4,000	4,120	4,120	4,120	4,244	4,244	4,244	4,370	4,370
Rail Accreditation		-	-	-	-	-	-	-	-	-	-	-
Security		2,700	2,700	2,700	2,781	2,781	2,781	2,865	2,865	2,865	2,950	2,950
Promotions		20,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	10,000	10,000	10,000
Maintenance		4,000	5,000	5,000	6,000	6,000	6,000	8,000	9,000	7,000	7,000	20,000
Insurance		4,000	4,120	4,235	4,362	4,492	4,627	4,765	4,908	5,055	5,206	5,362
Lease of Terminus Land	7	250	254	258	261	265	269	273	277	282	286	290
Workcover Insurance		2,000	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	2,610	2,688
Sundries		4,000	2,000	2,000	2,000	2,000	3,000	2,000	2,000	2,000	2,000	5,000
Total Operating Costs	9	*85,950*	*73,134*	*73,314*	*76,060*	*76,259*	*77,466*	*80,275*	*81,494*	*81,719*	*83,596*	*99,835*
Net Annual Surplus		*38,538*	*54,560*	*55,466*	*57,205*	*57,672*	*58,615*	*60,442*	*59,956*	*60,420*	*63,329*	*47,880*
Initial setup costs		15,000										
Less transfer to Sinking Fund		-	10,000	10,000	10,000	11,000	11,000	11,000	12,000	12,000	12,000	14,000
Less transfer to Future Fund		-	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Closing Balance of Operating Fund		*122,938*	*142,498*	*162,965*	*185,170*	*206,841*	*229,457*	*253,898*	*276,855*	*300,275*	*326,603*	*335,483*

THE NAMBOUR TRAMWAY GROUP LTD
PROJECTED CASHFLOW STATEMENT (SCENARIO 3)
NAMBOUR HERITAGE TRAMWAY PROJECT

SINKING FUND	NOTE	Yr1 $	Yr2 $	Yr3 $	Yr4 $	Yr5 $	Yr6 $	Yr7 $	Yr8 $	Yr9 $	Yr10 $	Yr11 $
Opening Balance of Sinking Fund		***-***	***-***	***10,000***	***20,300***	***30,909***	***42,836***	***55,121***	***67,775***	***81,808***	***96,262***	***111,150***
Transfer from Operating Fund		-	10,000	10,000	10,000	11,000	11,000	11,000	12,000	12,000	12,000	14,000
Council Funding		1,500,000										
Initial Funding	6	601,704	-	-	-	-	-	-	-	-	-	-
Interest Income	5	-	-	300	609	927	1,285	1,654	2,033	2,454	2,888	3,335
Total Inflows		***2,101,704***	***10,000***	***10,300***	***10,609***	***11,927***	***12,285***	***12,654***	***14,033***	***14,454***	***14,888***	***17,335***
Capital Costs	8	2,101,704	-	-	-	-	-	-	-	-	-	-
Tram Overhauls	3	-	-	-	-	-	-	-	-	-	-	98,285
Building Overhauls	3	-	-	-	-	-	-	-	-	-	-	33,598
Total Outflows		***2,101,704***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***131,883***
Closing Balance of Sinking Fund		***-***	***10,000***	***20,300***	***30,909***	***42,836***	***55,121***	***67,775***	***81,808***	***96,262***	***111,150***	***(3,398***

THE NAMBOUR TRAMWAY COMPANY LTD
PROJECTED CASHFLOW STATEMENT (SCENARIO 3)
NAMBOUR HERITAGE TRAMWAY PROJECT

FUTURE FUND	NOTE	Yr1 $	Yr2 $	Yr3 $	Yr4 $	Yr5 $	Yr6 $	Yr7 $	Yr8 $	Yr9 $	Yr10 $	Yr11 $
Opening Balance of Future Fund		-	-	***25,000***	***50,750***	***77,273***	***104,591***	***132,728***	***161,710***	***191,562***	***222,308***	***253,978***
Transfer from Operating Fund		-	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Interest Income	5	-	-	750	1,523	2,318	3,138	3,982	4,851	5,747	6,669	7,619
Total Inflows		-	***25,000***	***25,750***	***26,523***	***27,318***	***28,138***	***28,982***	***29,851***	***30,747***	***31,669***	***32,619***
Total Outflows	4	-	-	-	-	-	-	-	-	-	-	-
Closing Balance of Future Fund		-	***25,000***	***50,750***	***77,273***	***104,591***	***132,728***	***161,710***	***191,562***	***222,308***	***253,978***	***286,597***

THE NAMBOUR TRAMWAY COMPANY LTD
NAMBOUR HERITAGE TRAMWAY PROJECT

NOTE 1 - STRUCTURE

- The Nambour Heritage Tramway Company Ltd is structured as a company limited by guarantee.
- The Company is registered as a charity and deductible gift recipient.

NOTE 2 - GST AND PAYG WITHHOLDING

- We have assumed for simplicity that any commitments will be paid monthly when incurred.

NOTE 3 - SINKING FUND EXPENDITURE

Assumptions

- Operated by The Nambour Tramway Company Ltd
- Operating hours factored around a workforce of 0.5 FTE worker
- Two persons operating tram at all times
- Kiosk at Western Terminus manned by volunteers
- Low maintenance vehicle
- Low infrastructure maintenance (track, buildings, depots)
- Vehicle has an overhaul every 10 years including a full replacement of the batteries
- Revenue amounts and increases have been adopted as provided by The Nambour Tramway Company Ltd

Item	Unit	Quantity	Rate	Annual Cost	Comment
Current quote for periodic overhauls (included in capital costs)					
Tram	Overhaul every 10 years			73,133	£36,750 (future exch 1.99 assumed)
Buildings - repaint etc.	Every 10 years			25,000	
Future Cost of Periodic Overhauls (indexed at 3% CPI)					
Tram				98,285	
Buildings - repaint etc.				33,598	

NOTE 4 - FUTURE FUND EXPENDITURE

Future Fund is to be used for:

- The on street beautification of Howard Street
- Track extensions to the Nambour Show Grounds

NOTE 5 - INVESTMENT EARNINGS

Assumed rate of interest on investment earnings 3%

NOTE 6 - FUNDING SOURCES

Initial Funding Sources:

- Corporate sponsorship
- Community funding
- Grant applications
- Council and non-council contributions
- Philanthropic donations

For the purpose of this cashflow statement the monetary value of these different funding sources has not been dissected.
Various funding scenarios have been modelled by The Nambour Tramway Company Ltd. This modelling has not been included as part of this cashflow statement.

NOTE 7 - LEASE OF TERMINUS LAND

Market Value of Land	N/A
Lease Rate	Community
Lease Cost per Year	$250 annual increase by CPI

THE NAMBOUR TRAMWAY COMPANY LTD

NOTE 8 - CAPITAL EXPENDITURE

NAMBOUR HERITAGE TRAMWAY PROJECT

Features	
Route length	1 km
Terminus stations	Single side platform (15 metres long), awning weather cover, lighting, signage Mill Lane terminus include manned ticket office/memorabilia shop, with staff amenities
Intermediate stops	Assume off road pavement only. Need signage and pavement markings only
Depot	Includes workshop, office, crew amenities
Track standard	Use pw rail and turnouts (20 or 31kg/m rail on new concrete ties)
Turnouts	Assume 31 kg/m rail (1 in 7 or 8) and 2nd hand manual operated points are available
Vehicle	Single vehicle (610 mm gauge). Double ended driving stations, battery powered
Max speed	11 kph

				Base Scheme		
Item	**Unit**	**Quantity**	**Rate**	**Amount**		**Comment**
Property acquisition						
28 Mill Street (terminus site) Lease costs	Item			5,000		Lease costs
			Sub Total	**5,000**		
Heritage Tram						
Supply	Item			488,720		Severn Lamb budget quote full tram £298,000 @ exchange rate 1.64
Installation, Commissioning and Training	Item			22,632		Severn Lamb budget quote £13,800 @ exchange rate 1.64
Transport	Item			15,580		Severn Lamb budget quote - Herefordshire to Nambour £9,500 @ exchange rate 1.64
Procurement support for tram acquisition			4%	20,172		
Contingency on tram acquisition			5%	26,224		Includes scope/price contingency and ERV
			Sub Total	**573,328**		
Track						
New embedded track (in roadway, terminus platforms and in depot building)	metres	145	1000	145,000		Assumes 2nd hand rail on concrete slab with bitumen infill in station areas
Minor rehab/clean existing	Item			5,000		
Demolish existing redundant track & reinstate road	Item			15,000		
			Sub Total	**165,000**		
Extra for loco operation						
Turnouts	No.	5	30000	-		Assume 2nd hand turnouts on new timber ties>new quote ~$70k to supply only. Included in cost of western terminus.
Extra track	Item	240	500	120,000		Embedded thru station platform areas
			Sub Total	**120,000**		
Stations - Heritage themed						
Terminus station - Mill Lane end	Item			718,397		Includes kiosk and staff toilet. Constructed with in-kind labour and materials.
Depot end	Item	1		23,700		DDA Compliant stop (to be designed)
Intermediate stop	Item	1		23,700		DDA Compliant stop (to be designed)
Site services	Item			10,000		Power, water, sewage
Fencing - security (2.1m chain wire)	metres	170	50	8,500		Compound 70 x 40 m
Security system	Item	1		5,600		Alarm and CCTV
Solar power battery charging	Item	1		8,000		
Building fit-out tools, jacks	Item	1		10,000		
			Sub Totals	**807,897**		
Civil Works - Mill Lane						
Service modifications	Item	1		5,000		
Drainage modifications	Item	1		-		
Road/kerbing modifications	Item	1		4,000		
Relocation of car parking and one laning of Mill Lane beyond round-a-bout.	Item	1		176,800		Based on SCC prelim plans and estimate
			Sub Totals	**185,800**		
Miscellaneous						
Route signage	Item			10,000		
Flashing light warning lights	Item			30,000		Located where tramway crosses one lane of traffic in Howard St and Mill St
Traffic Signals activation	Item			80,000		To cover both Currie St and Ann St intersections
			Sub Totals	**120,000**		
			SUB-TOTAL	**1,977,025**		
Design				-		Included in costings or Provided on a volunteer basis
Project management/supervision				-		Included in costings or Provided on a volunteer basis
Safety Accreditation	Item			6,000		Safety Management System
Rail Accreditation Application Fee				5,000		Payable to TMR Rail Safety Regulator (2014 fee $1085)
Contingency		5.75%		113,679		Some contingencies already included in costings
			TOTAL	**2,101,704**		

Western Terminus Estimate
commercial vs utilisation of in-kind contributions

Trade	Full Cost $	**Revised Cost with Volunteer Contributions $
Preliminaries	85,000	65,000
Substructure	115,885	110,885
Frame	139,315	177,208
Roof	62,321	incl in Frame
External Walls	90,464	incl in Frame
Windows and External Doors	27,665	incl in Frame
Internal Walls	13,156	13,156
Internal Doors	4,411	4,411
Wall Finishes	20,902	20,901
Floor Finishes	26,511	19,510
Ceiling Finishes	12,172	12,172
Fixtures and Fittings	14,465	14,465
Painting	15,307	15,307
Hydraulics	74,690	74,690
Electrical and Dry Fire Services	84,000	75,000
Mechanical Services	17,435	15,435
External Works	100,843	85,843
Contingency	186,000	96,000
Total Cost excl GST	1,088,742	799,982
Adjusted from 353m2 to 317m2 on a m2 rate for estimating purposes	977,709	718,397

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THE NAMBOUR TRAMWAY COMPANY LTD

NOTE 9 - OPERATIONAL EXPENDITURE

NAMBOUR HERITAGE TRAMWAY PROJECT

Assumptions

- Operated by The Nambour Tramway Company Ltd
- Two persons operating tram at all times
- Kiosk at Western Terminus manned by volunteers
- Low maintenance vehicle
- Low infrastructure maintenance (track, buildings, depots)
- Vehicle has an overhaul every 10 years including a full replacement of the batteries
- Revenue amounts and increases have been adopted as provided by The Nambour Tramway Company Ltd

Item	Unit	Quantity	Rate	Annual Cost	Comment
Operating			**Budget Estimate**		
Labour					includes on-costs
Manager	FTE	1	45000	45,000	
Staff	FTE	0	0	-	All staff volunteers
Utilities	Item			4,000	Power, water supply/sewerage, telecoms
Rail Accreditation	Item			-	Nil for revenue <$250k. $6.5k for revenue>$250k
Security				2,700	2 nightly drive-by patrols incl lock up check $225.61 p/mth
Promotions				10,000	Facebook, twitter ($25k first year)
			Operating Cost	**61,700**	
Maintenance					
Tram				2,000	£36,750 (future exch 1.99 assumed)
Depots/Stations				1,000	Repairs, graffiti removal
Infrastructure				1,000	Minor only expected
		Annual Maintenance Costs		**4,000**	
Current quote for periodic overhauls (included in capital costs)					
Tram	Overhaul every 10 years			73,133	£36,750 (future exch 1.99 assumed)
Buildings - repaint etc.	Every 10 years			25,000	
Future Cost of Periodic Overhauls (indexed at 3% CPI)					
Tram				98,285	
Buildings - repaint etc.				33,598	

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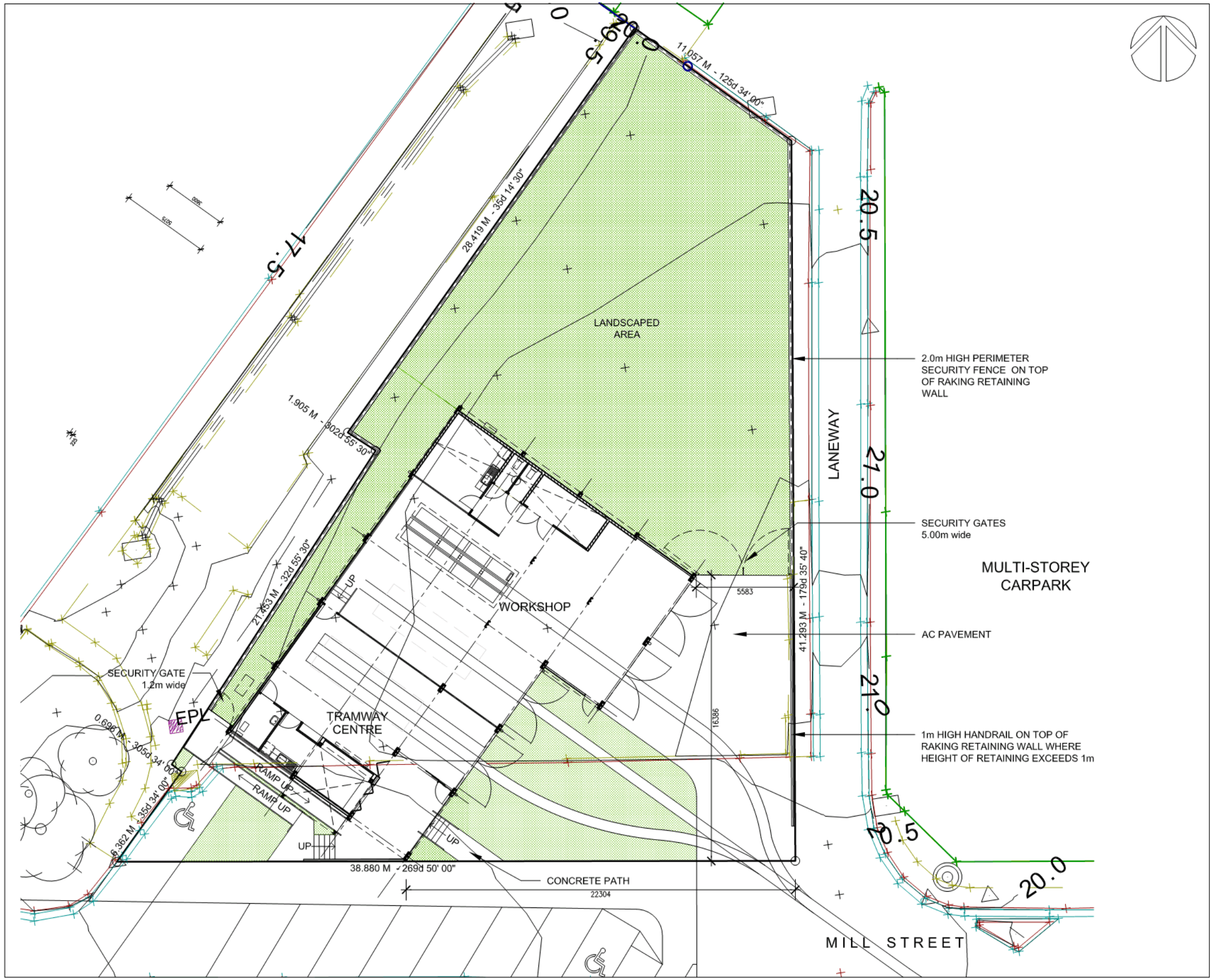
THE NAMBOUR TRAMWAY COMPANY LTD

NOTE 10 - INCOME PROJECTION

NAMBOUR HERITAGE TRAMWAY PROJECT

preadsheet for tram movements, passenger numbers and fare revenue, working on a capacity of 28
he below chart is designed to stimulate a realistic estimate of usage and income to provide the committee with workable figures for budgeting and grant submissions.
** I see a potential for relieving the traffic congestion around Nambour State High by utilising the tram and pedestrian links between Howard Street and the School.
** Other sources of revenue could be monthly and yearly tickets, as well as off peak tickets. The funds would be received in advance and refreshed each month or year.

Day	Station	Arrival	Departure	Full Fare	Concession	Child	TOTAL	
Monday to Friday	28 Mill St		8.10am	5	2	3		
	Town Cnr	8.15am	8.20am					
	Aldi	8.25am	8.40am	4	2	2		
	Town Cnr	8.45am	8.50am					
	28 Mill St	9.00am	9.30am	3	1	1		
	Town Cnr	9.35am	9.40am					
	Aldi	9.45am	10.15am	4	2	2		
	Town Cnr	10.20am	10.25am					
	28 Mill St	10.30am	11.00am	5	2	3		
	Town Cnr	11.05am	11.10am					
	Aldi	11.15am	11.45am	5	2	3		
	Town Cnr	11.50am	11.55am					
	28 Mill St	12 noon	12.30pm	2	1	1		
	Town Cnr	12.35pm	12.40pm					
	Aldi	12.45pm	1.45pm	2	1	1		
	Town Cnr	1.50pm	1.55pm					
	28 Mill St	2.00pm	2.30pm	4	2	2		
	Town Cnr	2.35pm	2.40pm					
	Aldi	2.45pm	2.50pm	5	2	2		
	Town Cnr	2.55pm	3.00pm					
	28 Mill St	3.05pm	3.10pm	7	4	4		
	Town Cnr	3.15pm	3.20pm					
	Aldi	3.25pm	4.30pm	2	1	1		
	Town Cnr	4.35pm	4.40pm					
	28 Mill St	4.45pm						
Per Day				49	25	26		
Per week				246	123	129		
Saturday	28 Mill St		9.00am	4	2	2		
	Town Cnr	9.05am	9.10am					
	Aldi	9.15am	10.00am	4	2	2		
	Town Cnr	10.05am	10.00am					
	28 Mill St	10.05am	11.00am	8	4	4		
	Town Cnr	11.05am	11.10am					
	Aldi	11.15am	11.20am	8	4	4		
	Town Cnr	11.25am	11.30am					
	28 Mill St	11.35am	12.30pm	3	2	2		
	Town Cnr	12.35pm	12.40pm					
	Aldi	12.45pm	2.00pm	2	1	1		
	Town Cnr	2.05pm	2.10pm					
	28 Mill St	2.15pm						
Total over a 6 day period				**274**	**137**	**143**	*554.4*	
One-way fare cost				$ 2.00	$ 1.00	$ 1.00		
Weekly takings based on a one-way fare				$ 548.40	$ 138.40	$ 143.80		
Total annual fare income				$ 28,516.80	$ 7,196.80	$ 7,477.60	$ 43,191.20	
Discount Applied to Allow for people using annual passes							$ 10,685.50	24.74%
							$ 32,505.70	
Annual Passes - $150 x 200							$ 30,000.00	
Shopper Docket revenue							$ 5,500.00	
Sponsorship/advertising revenue							$ 28,500.00	
TOTAL ANNUAL REVENUE							**$ 96,505.70**	



RPD
LOT 2
RP 224422
PARISH - MAROOCHY
COUNTY - CANNING
AREA - 1137 m2

BUILDING AREA (Excluding external ramps and stairs)	327 m2
SITE COVER	28.76%

PRINTED
20–01–2017

A 20–5–17 BUILDING REDUCED IN AREA

AMENDMENTS

DRAWING

SITE PLAN

PROJECT

NEW BUILDING
TRAMWAY CENTRE
+ WORKSHOP
MILL ST, NAMBOUR

FOR

NAMBOUR TRAMWAY CO

GREENWAY

GREENWAY (S.C.) PTY. LTD.
A.C.N. 067 535 068
38 BURNETT STREET, MOOLOOLABA 4557
PHONE 07 54446211 FAX 07 54443909

CONTRACTORS ARE TO VERIFY ALL DIMENSIONS ON THE JOB BEFORE COMMENCING ANY WORK OR MAKING SHOP DRAWINGS

DRAWN	DATE
TW SMITH	DECEMBER 2016
SCALE	CHECKED
1 : 200 @ A3	

JOB	SHEET	REV
M13.003	WD.01	A

SEVERN LAMB

TRACKED TROLLEY

NAMBOUR TRAMWAY CO. LTD. PROPOSAL
25TH APRIL 2016 – A1

The Transport Engineering Specialists

Dear Sir/Madam

It is with much pleasure that I present to you our Tracked Trolley brochure.

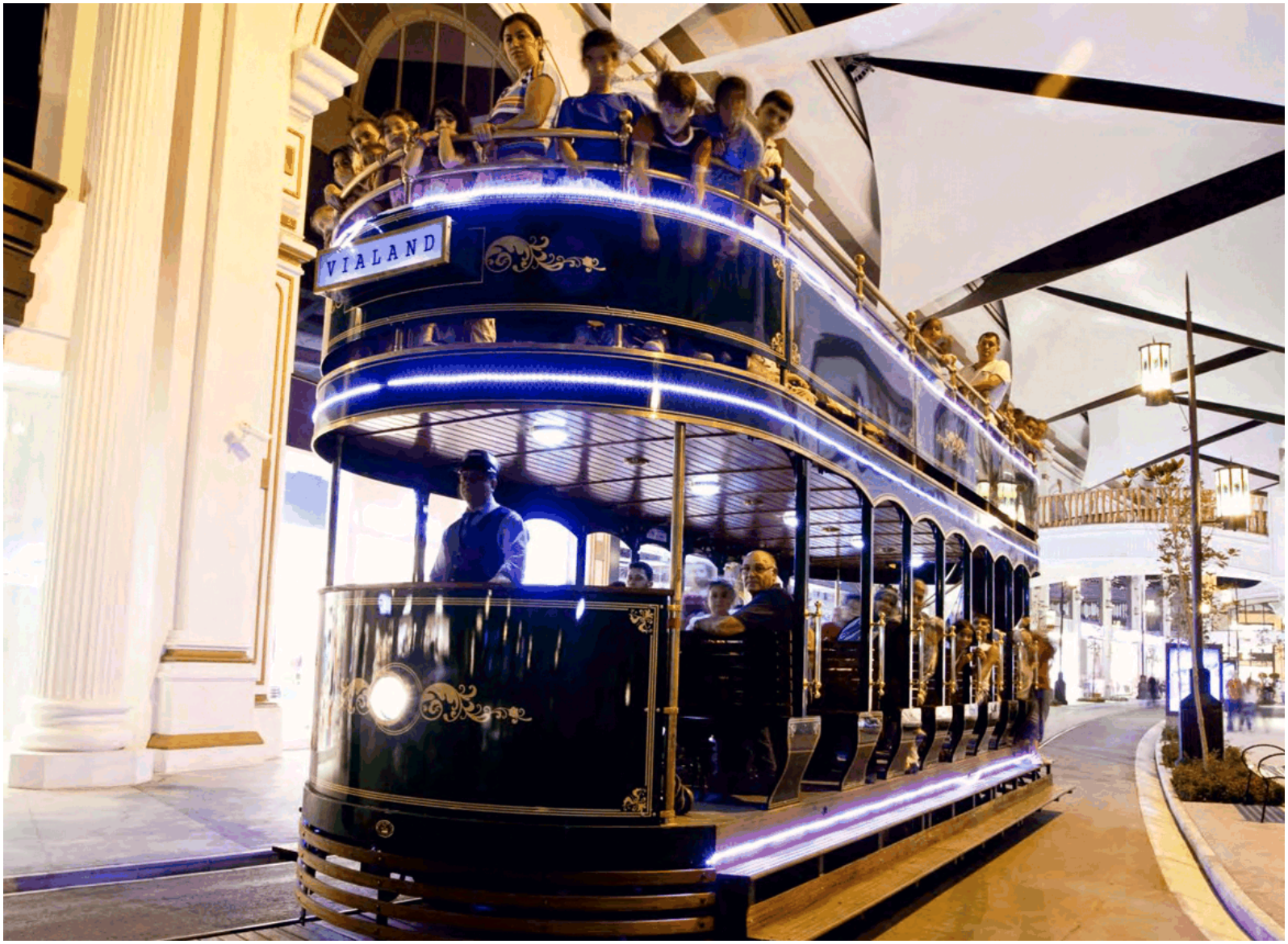
Established in 1947, we are the world leaders in the design and manufacture of tracked people moving solutions.

We invite and welcome you into our ever growing family of cherished Severn Lamb clients.

I look forward to hearing back from you in due course.

Kindest regards,

Patrick Severn Lamb
Managing Director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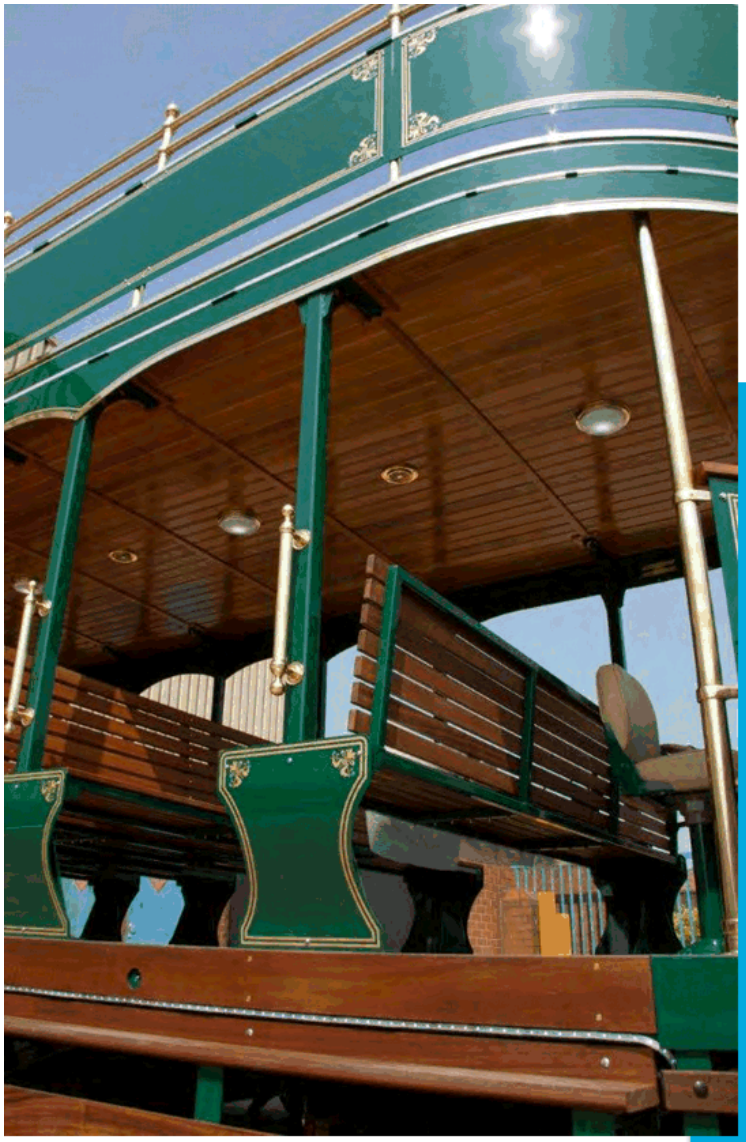


Evaluation
Of Needs

Location:	Nambour, QLD, Australia
Vehicle:	Single deck trolley (2x single deck trolleys)
Gauge:	2ft or 610mm
Drive Position:	Drive from both ends (operator cab in both trolleys)
Drive system:	Battery electric
Configuration:	Open with toast rack seating, loading both sides
Certification:	EN13814
Minimum turning radius:	20m
Maximum gradient:	To be confirmed, proposal based on level, 0%
Operation:	Outdoor, all year round,
Temperatures:	Min & Max to be advised by client
Cruise speed:	15kph

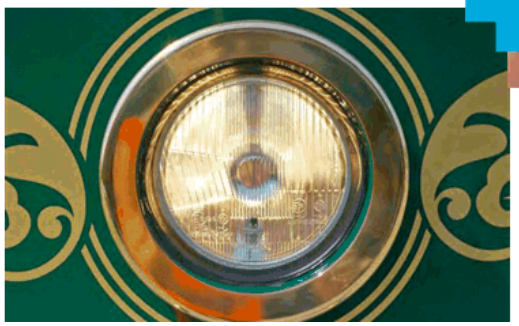
Tracked Trolley

Wonderfully authentic and hand-crated with care, our tracked trolley is the crowning glory for any attraction. Available in single and double deck variants, The electrical-powered trolley has a high optimal capacity of 70 passengers.

- Capacity up to 70
- Single & Double Deck Variants
- Battery Electric
- Standard Gauge, 3ft Gauge & 2ft Gauge
- Minimum Radius of 20m

Features & Options

- Traditional Wood Finish
- High Quality Bodywork
- Authentic Brass Work
- Interior & Courtesy Lighting
- Decorative LED Lighting
- Backlit Destination Board
- Audio Package with PA System
- Driver Alert Buttons
- Choice of Colours & Graphics
- Battery Charger
- Hardwood Bench Seating
- Dual End Control *(Option)*
- Wheelchair Access *(Option)*



"We will transform your dreams into reality"

Models

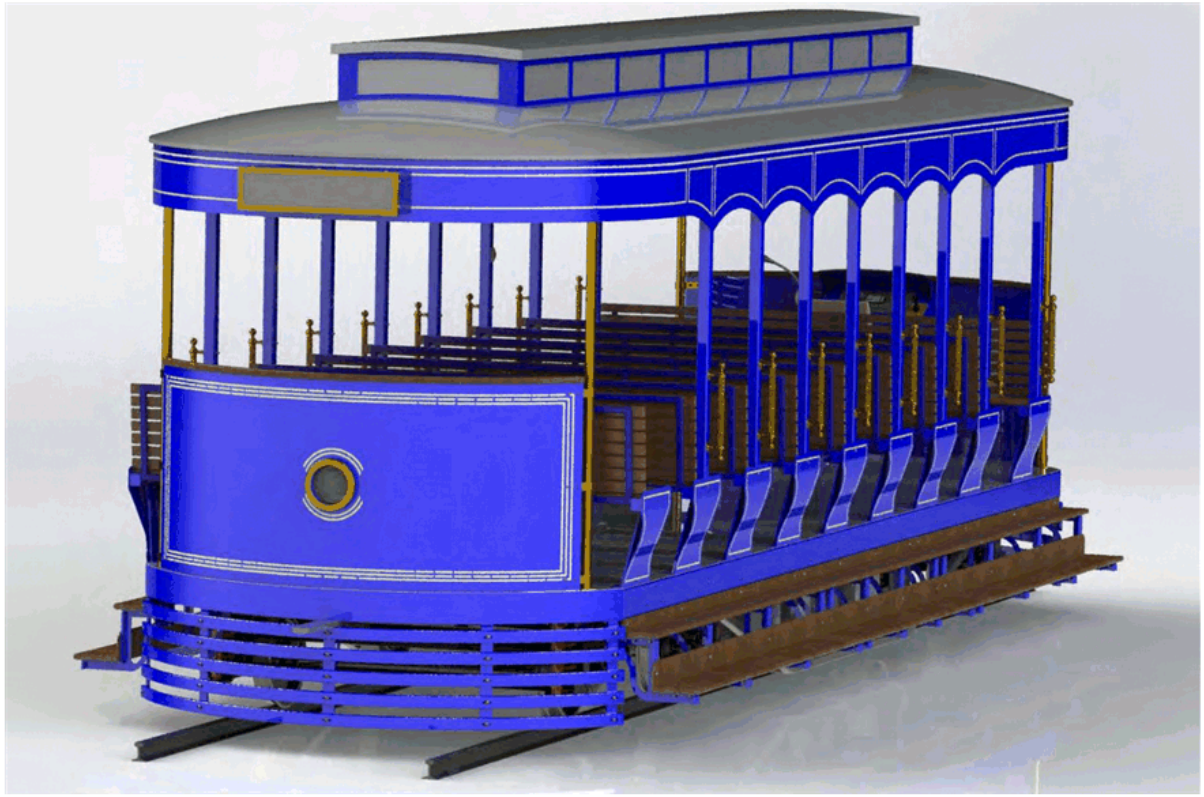
Summary Technical Specification

	Single Deck					Double Deck	
	Open			Semi Open	Enclosed	Open	Semi Open
Gauge	4' 8 1/2" 1,435mm	3ft 915mm	2ft 610mm	4' 8 1/2" 1,435mm	4' 8 1/2" 1,435mm	4' 8 1/2" 1,435mm	4' 8 1/2" 1,435mm
Drive System	Battery Electric						
Minimum Turning Radius	20m						
Maximum Gradient	0% (up to 3% available on request)						
Operating Speed	10kph (6mph)						
Traction System	2 x Powered Bogies						
Duty Cycle	60-70km (on flat and level ground)						
Charge Time	10-12hrs (8-10hrs avalable on request)						
Bi Directional Drive Option	Yes	Yes	Yes	On Request	On Request	On Request	On Request
Capacity (Single Direction)	45	36	36	26	34	66	52
Capacity (Bi Directional)	40	32	32	n/a	n/a	n/a	n/a

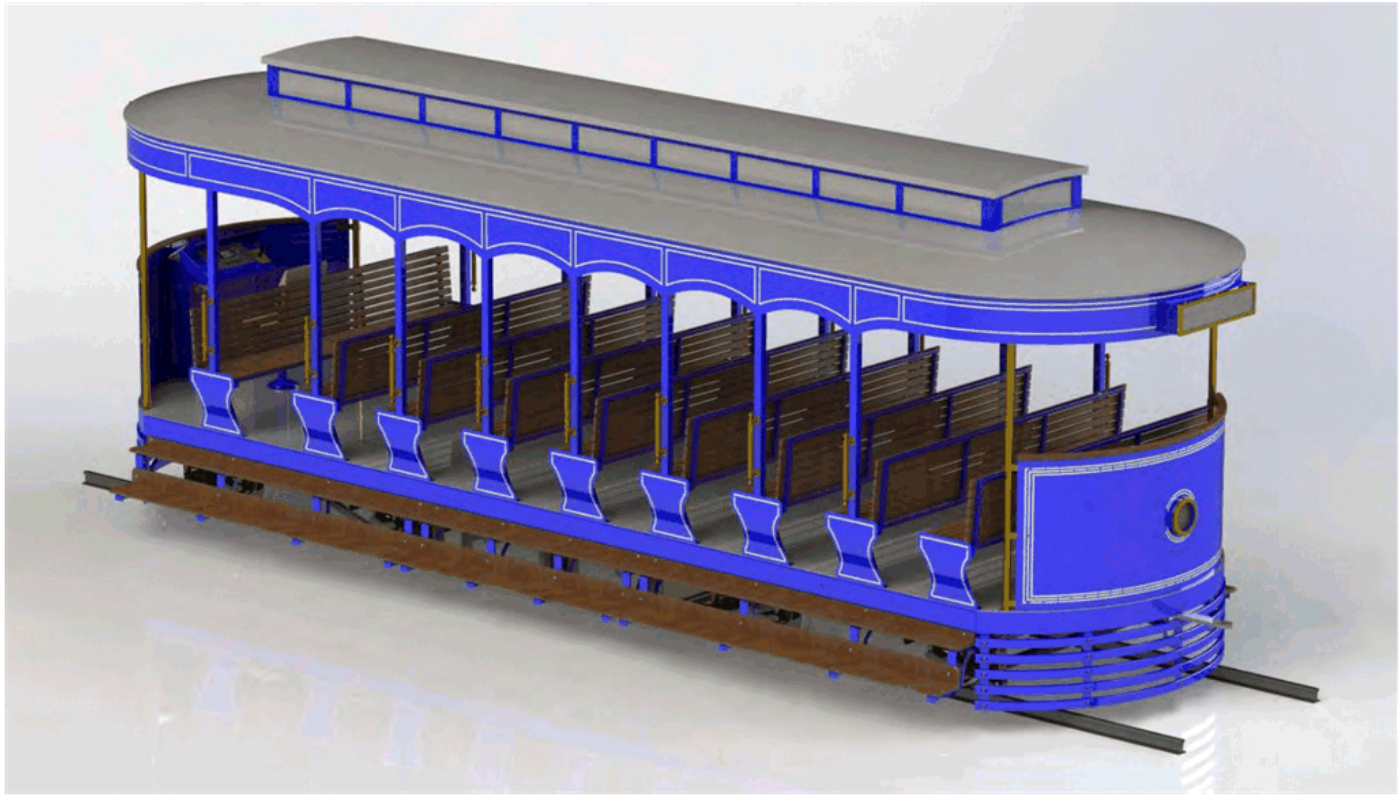
All technical information is subject to change and is for guidance

Double Deck
Open Trolley

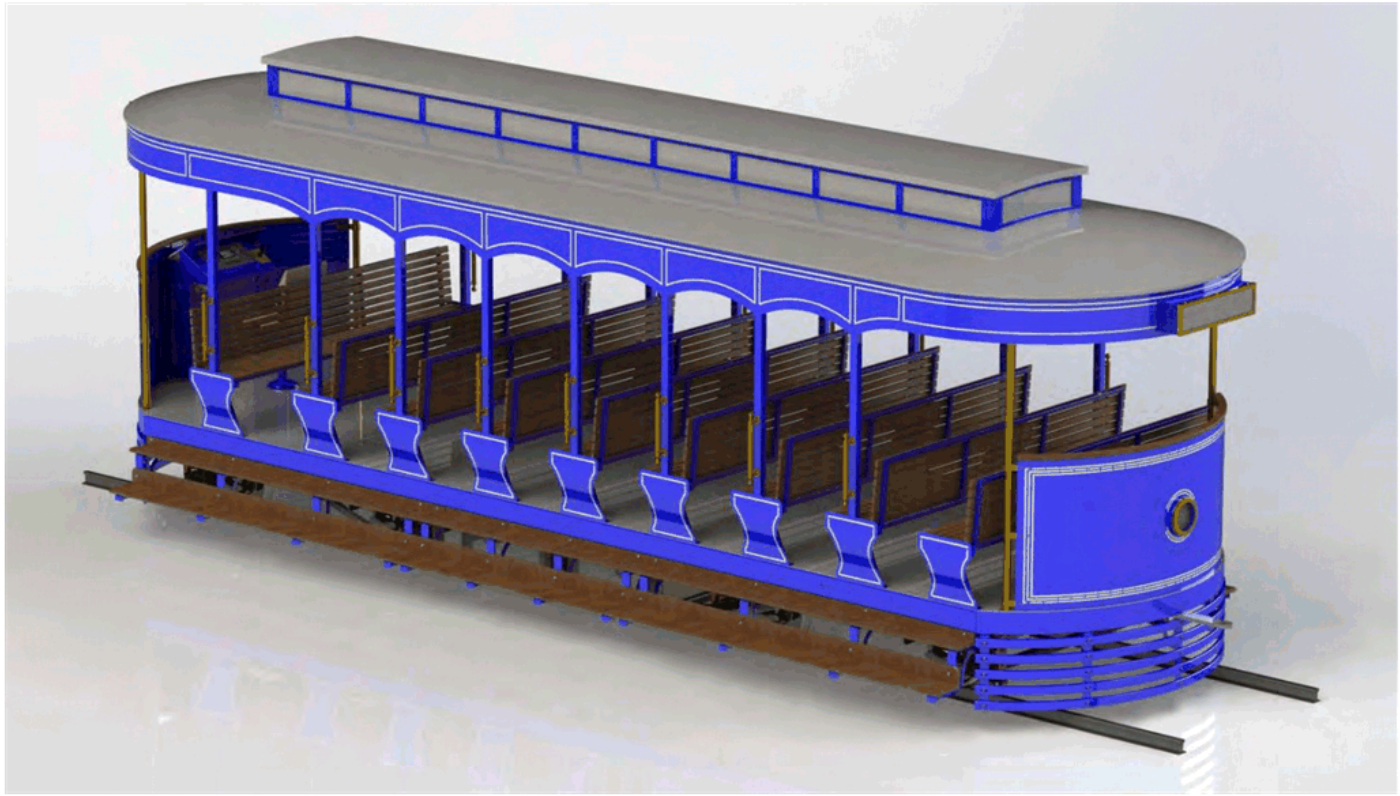
Single Deck
Open Trolley



Single Deck
Open Trolley



Single Deck
Open Trolley



Single Deck

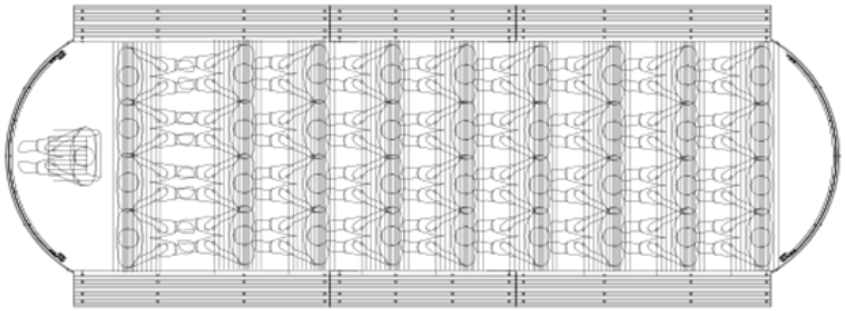
Open Trolley (in production)

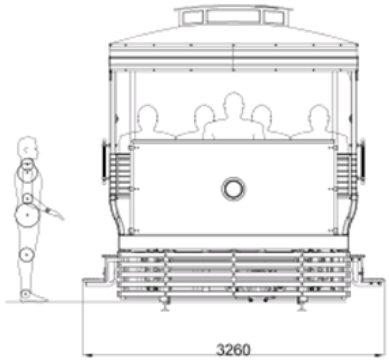
Single Deck

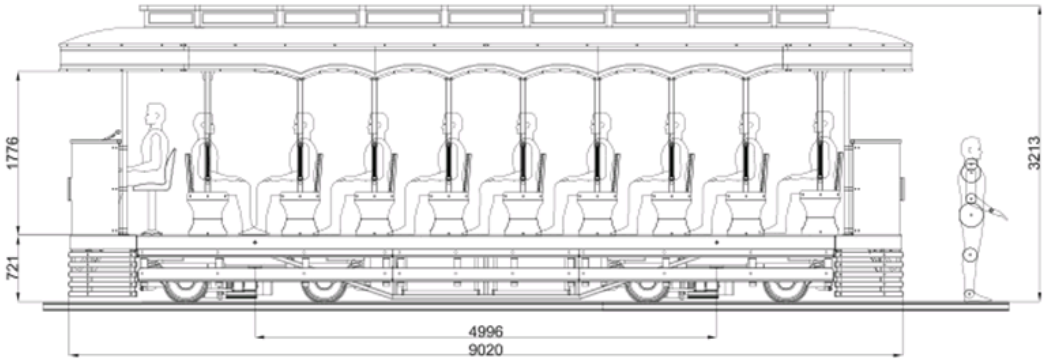
Open Trolley (in production)

DO NOT SCALE - IF IN DOUBT - ASK!

Single Deck
Open Trolley (4' 8 ½" or 1,435mm)





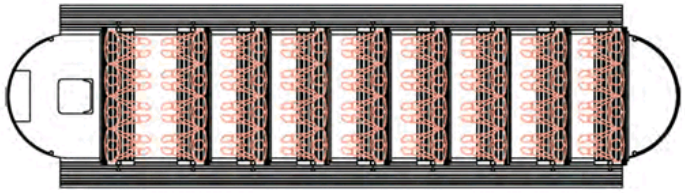


NEXT ASSEMBLY:	FINAL ASSEMBLY:	MATERIAL:	TOLERANCES: UNLESS OTHERWISE STATED OPEN DIMS: ± 1.0mm ONE DEC. PLACE: ± 0.5mm TWO DEC PLACES: ± 0.1mm ANGULAR: ± 30'	SEVERN LAMB	DRAWING SCALE: NTS BORDER A3 X 1:1 LOCATION CODE: . DRAWN: DATE: APPROVED: DATE: PROJECTION: X	TITLE: Single Deck Open Trolley
PROJECT TITLE:		TREATMENT:	DIMENSIONS IN MILLIMETRES (mm) SURFACE TEXTURE VALUES IN (um) MACHINE WHERE MARKED: REMOVE ALL SHARP EDGES AND BURRS			WEIGHT (kg): DRAWING No: PART No: REV: SHEET: 1 OF 1
		FINISH:				

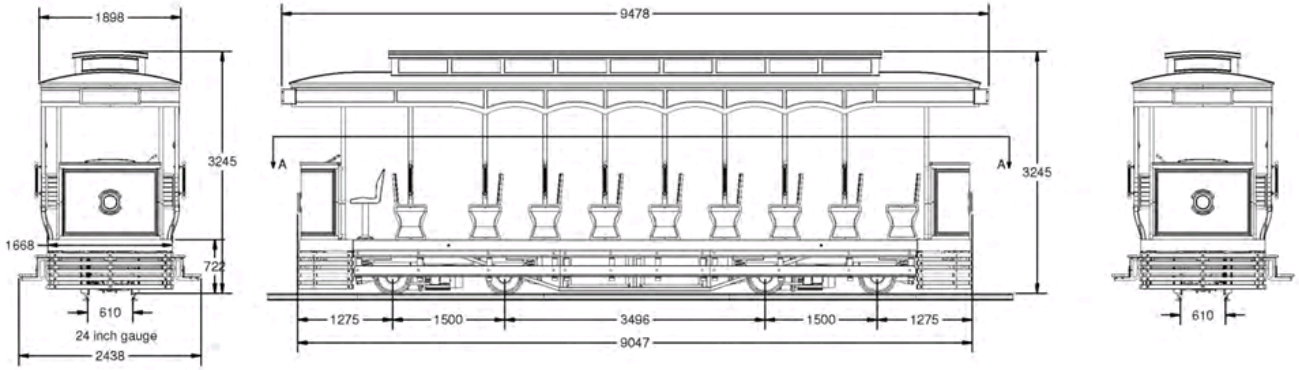
PHONE: 01789 400140 - FAX: 01789 400240
TYTHING ROAD, ALCESTER,
WARWICKSHIRE. B49 6ET. ENGLAND
(E-MAIL technical@severn-lamb.com)

DO NOT SCALE - IF IN DOUBT - ASK!

Single Deck
Open Trolley (2' or 610mm) – Single Direction



SECTION AA

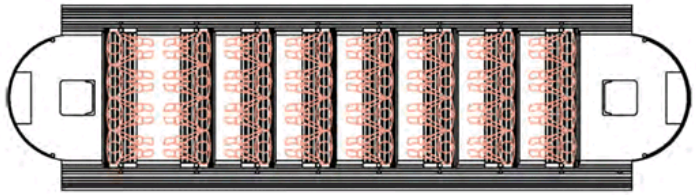


Total capacity = 36 passengers

NEXT ASSEMBLY:	FINAL ASSEMBLY:	MATERIAL:	TOLERANCES: UNLESS OTHERWISE STATED OPEN DIMS: ± 1.0mm ONE DEC. PLACE: ± 0.5mm TWO DEC PLACES: ± 0.1mm ANGULAR: ± 30'	SEVERN LAMB PHONE: 01789 400140 - FAX: 01789 400240 TYTHING ROAD, ALCESTER, WARWICKSHIRE. B49 6ET. ENGLAND (E-MAIL technical@severn-lamb.com)	DRAWING SCALE: NTS	TITLE: Single Deck Open Trolley		
PROJECT TITLE:		TREATMENT:	DIMENSIONS IN MILLIMETRES (mm) SURFACE TEXTURE VALUES IN (um) MACHINE WHERE MARKED: REMOVE ALL SHARP EDGES AND BURRS		BORDER A3 X 1:1			
		FINISH:			LOCATION CODE: .			
					DRAWN: DATE:			
					APPROVED: DATE:			
					PROJECTION:	WEIGHT (kg):	DRAWING No:	PART No: REV: SHEET: 1 OF 1

DO NOT SCALE - IF IN DOUBT - ASK!

Single Deck
Open Trolley (2' or 610mm) – Bi Directional



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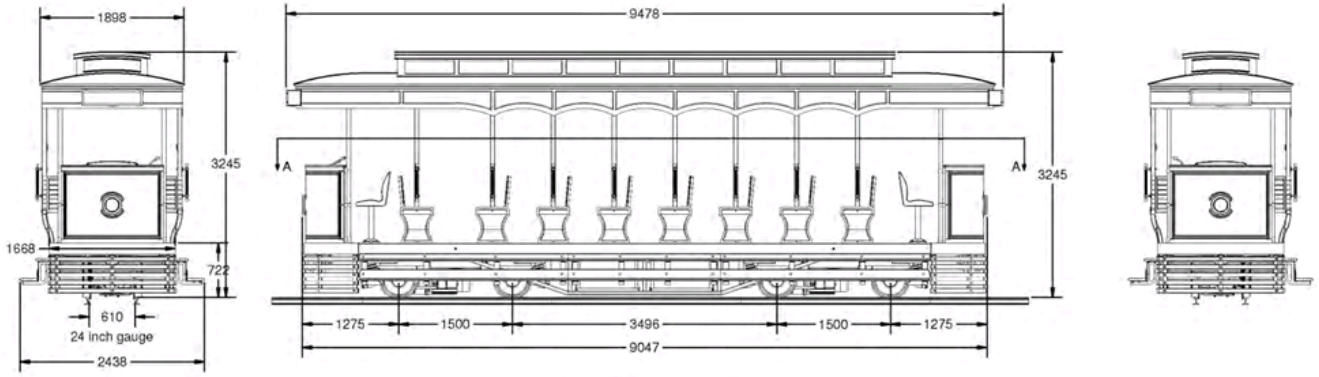
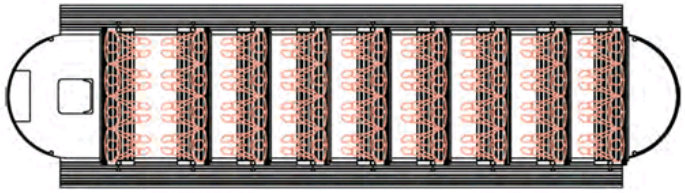


Total capacity = 32 passengers

NEXT ASSEMBLY:	FINAL ASSEMBLY:	MATERIAL:	TOLERANCES: UNLESS OTHERWISE STATED OPEN DIMS: ± 1.0mm ONE DEC. PLACE: ± 0.5mm TWO DEC PLACES: ± 0.1mm ANGULAR: ± 30'	SEVERN LAMB	DRAWING SCALE: NTS BORDER A3 X 1:1 LOCATION CODE: .	TITLE: Single Deck Open Trolley	
PROJECT TITLE:		TREATMENT:	DIMENSIONS IN MILLIMETRES (mm) SURFACE TEXTURE VALUES IN (um) MACHINE WHERE MARKED: REMOVE ALL SHARP EDGES AND BURRS	PHONE: 01789 400140 - FAX: 01789 400240 TYTHING ROAD, ALCESTER, WARWICKSHIRE. B49 6ET. ENGLAND (E-MAIL technical@severn-lamb.com)	DRAWN: DATE: APPROVED: DATE: PROJECTION:	WEIGHT (kg):	DRAWING No: PART No: REV: SHEET: 1 OF 1
		FINISH:		THIS IS THE PROPERTY OF SEVERN-LAMB AND MAY NOT BE COPIED OR USED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF SEVERN-LAMB			

DO NOT SCALE - IF IN DOUBT - ASK!

Single Deck
Open Trolley (3' or 914mm) – Single Direction



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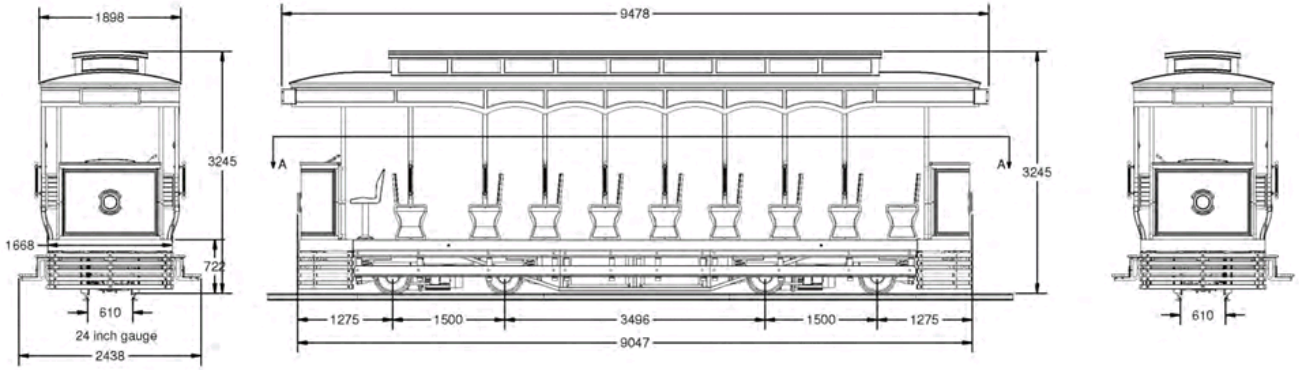
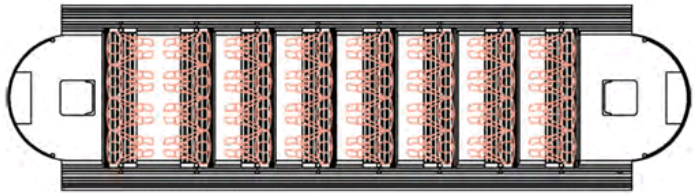


Total capacity = 36 passengers

NEXT ASSEMBLY:	FINAL ASSEMBLY:	MATERIAL:	TOLERANCES: UNLESS OTHERWISE STATED OPEN DIMS: ± 1.0mm ONE DEC. PLACE: ± 0.5mm TWO DEC PLACES: ± 0.1mm ANGULAR: ± 30'	SEVERN LAMB	DRAWING SCALE: NTS	TITLE: Single Deck Open Trolley		
PROJECT TITLE:		TREATMENT:	DIMENSIONS IN MILLIMETRES (mm) SURFACE TEXTURE VALUES IN (um) MACHINE WHERE MARKED: REMOVE ALL SHARP EDGES AND BURRS	PHONE: 01789 400140 - FAX: 01789 400240 TYTHING ROAD, ALCESTER, WARWICKSHIRE. B49 6ET. ENGLAND (E-MAIL technical@severn-lamb.com)	BORDER A3 X 1:1			
		FINISH:		THIS IS THE PROPERTY OF SEVERN-LAMB AND MAY NOT BE COPIED OR USED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF SEVERN-LAMB	LOCATION CODE: .			
					DRAWN: DATE:			
					APPROVED: DATE:			
					PROJECTION: X	WEIGHT (kg): DRAWING No: PART No: REV: SHEET: 1 OF 1		

DO NOT SCALE - IF IN DOUBT - ASK!

Single Deck
Open Trolley (3' or 914mm) – Bi Directional



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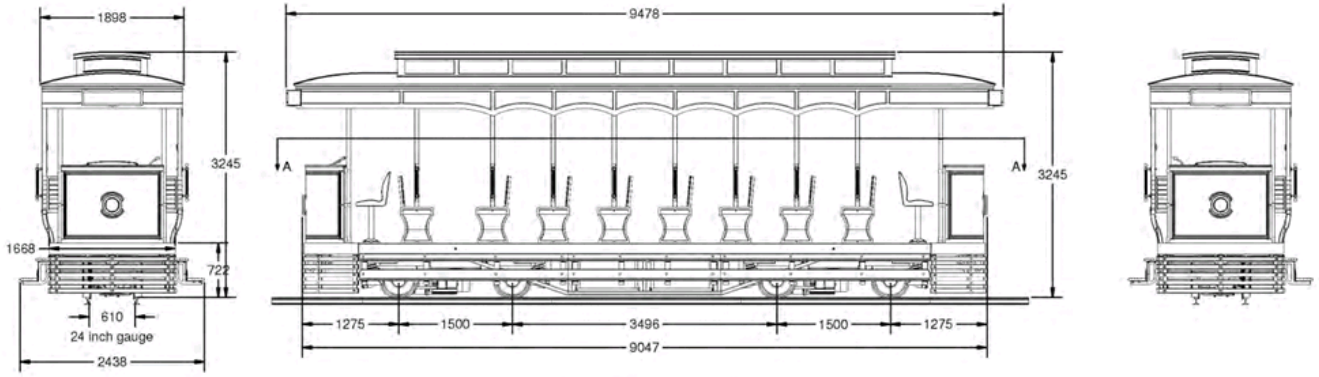
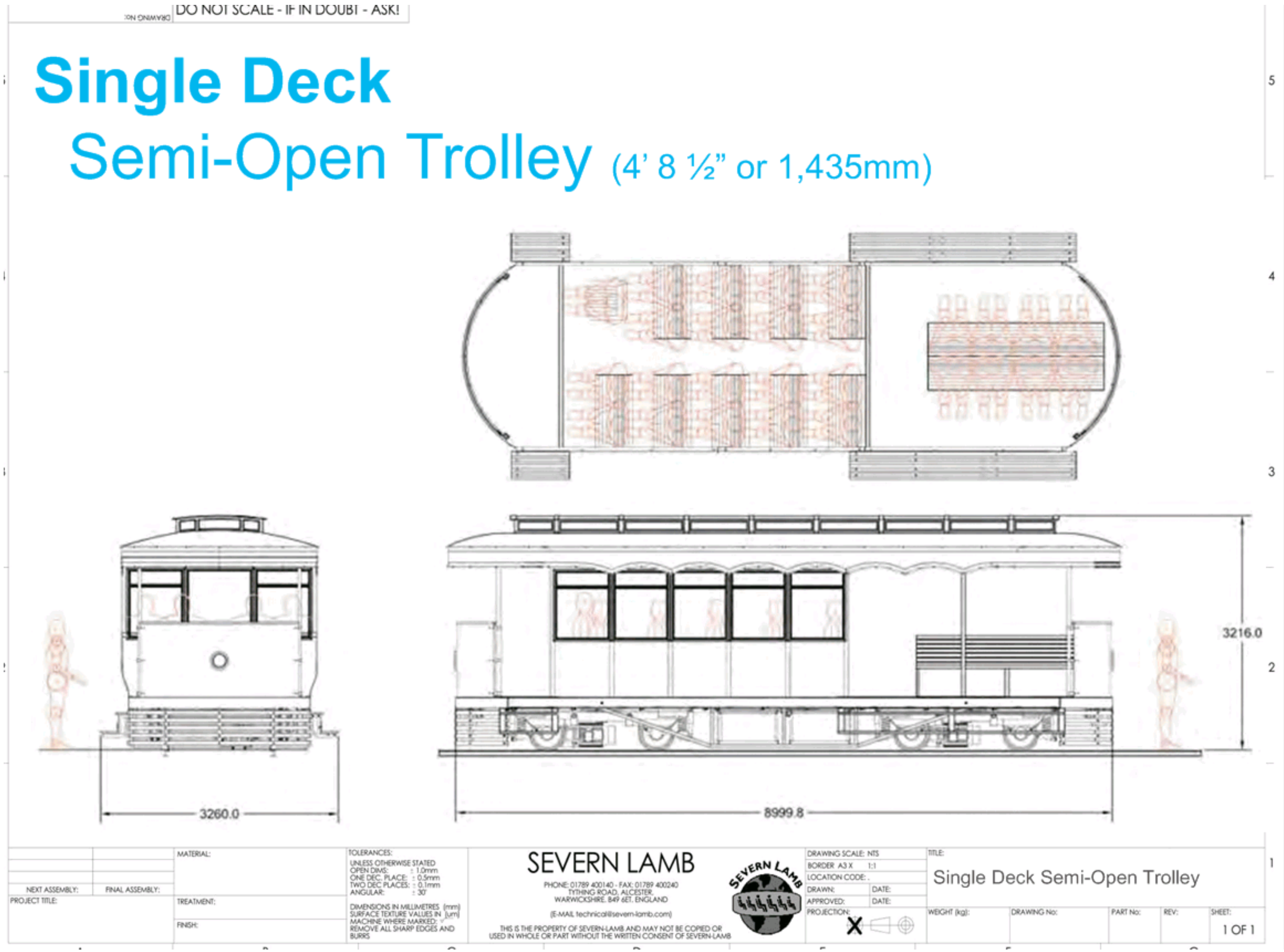


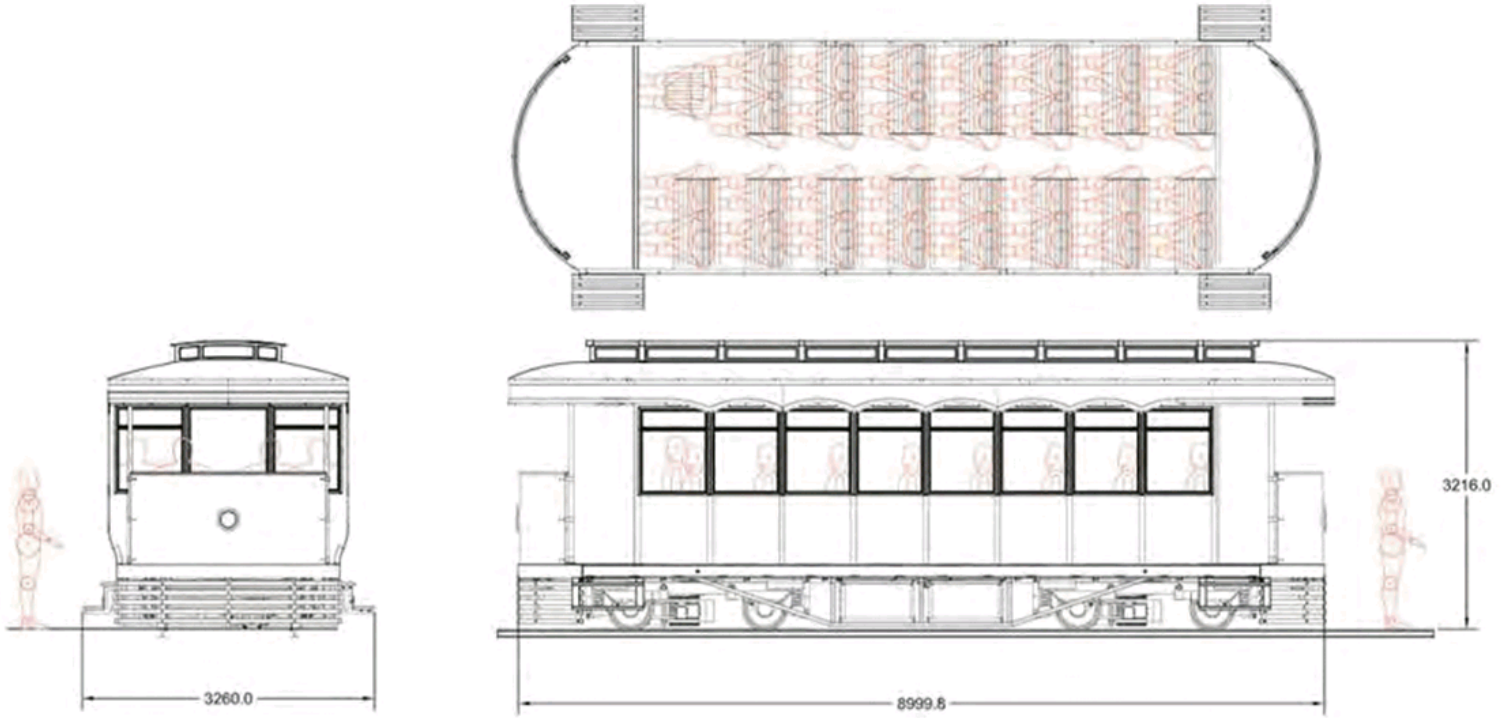
Total capacity = 32 passengers

NEXT ASSEMBLY:	FINAL ASSEMBLY:	MATERIAL:	TOLERANCES: UNLESS OTHERWISE STATED OPEN DIMS: ± 1.0mm ONE DEC. PLACE: ± 0.5mm TWO DEC PLACES: ± 0.1mm ANGULAR: ± 30'	SEVERN LAMB	DRAWING SCALE: NTS	TITLE:		
PROJECT TITLE:		TREATMENT:	DIMENSIONS IN MILLIMETRES (mm) SURFACE TEXTURE VALUES IN (um) MACHINE WHERE MARKED: REMOVE ALL SHARP EDGES AND BURRS	PHONE: 01789 400140 - FAX: 01789 400240 TYTHING ROAD, ALCESTER, WARWICKSHIRE. B49 6ET. ENGLAND (E-MAIL technical@severn-lamb.com)	BORDER A3 X 1:1	Single Deck Open Trolley		
		FINISH:		THIS IS THE PROPERTY OF SEVERN-LAMB AND MAY NOT BE COPIED OR USED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF SEVERN-LAMB	LOCATION CODE: . DRAWN: DATE: APPROVED: DATE: PROJECTION: X	WEIGHT (kg):	DRAWING No:	PART No: REV: SHEET: 1 OF 1


DO NOT SCALE - IF IN DOUBT - ASK!
Single Deck
Semi-Open Trolley (4' 8 ½" or 1,435mm)
3216.0
3260.0
8999.8
SEVERN LAMB
Single Deck Semi-Open Trolley
1 OF 1

DO NOT SCALE - IF IN DOUBT - ASK!

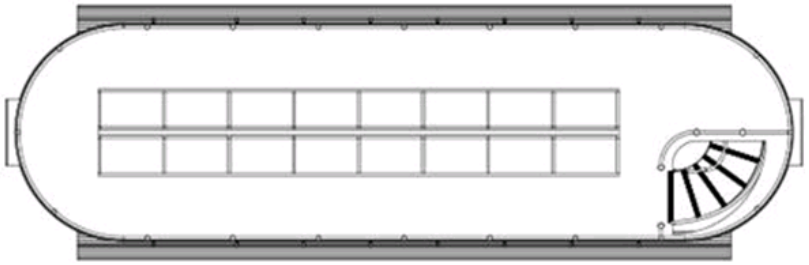
Single Deck
Enclosed Trolley (4' 8 ½" or 1,435mm)

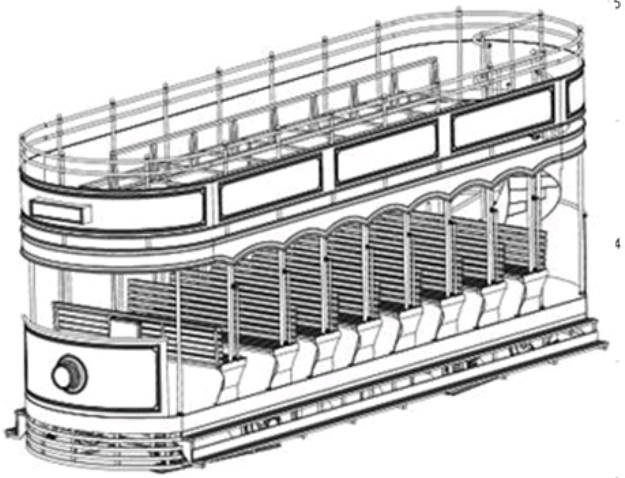


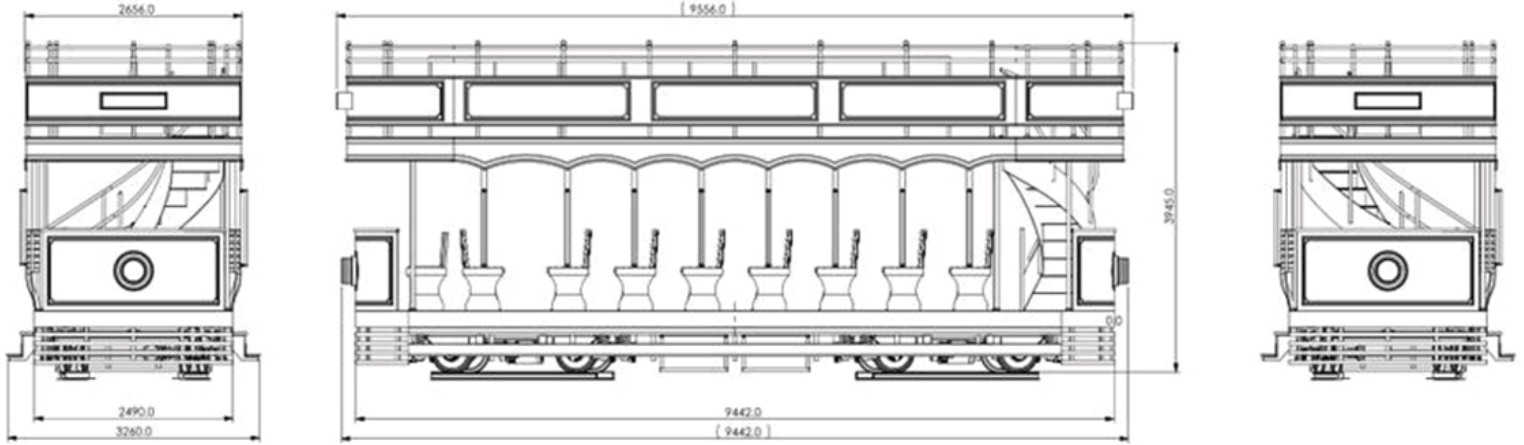
NEXT ASSEMBLY:	FINAL ASSEMBLY:	MATERIAL:	TOLERANCES: UNLESS OTHERWISE STATED OPEN DIMS: ± 1.0mm ONE DEC. PLACE: ± 0.5mm TWO DEC PLACES: ± 0.1mm ANGULAR: ± 30'	SEVERN LAMB	DRAWING SCALE: NTS	TITLE: Single Deck Enclosed Trolley		
PROJECT TITLE:		TREATMENT:	DIMENSIONS IN MILLIMETRES (mm) SURFACE TEXTURE VALUES IN (um) MACHINE WHERE MARKED: REMOVE ALL SHARP EDGES AND BURRS	PHONE: 01789 400140 - FAX: 01789 400240 TYTHING ROAD, ALCESTER, WARWICKSHIRE. B49 6ET. ENGLAND (E-MAIL technical@severn-lamb.com)	BORDER A3 X 1:1	WEIGHT (kg):	DRAWING No:	PART No:
		FINISH:		THIS IS THE PROPERTY OF SEVERN-LAMB AND MAY NOT BE COPIED OR USED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF SEVERN-LAMB	LOCATION CODE: .	REV:	SHEET: 1 OF 1	
					DRAWN: DATE:			
					APPROVED: DATE:			
					PROJECTION: X			

DO NOT SCALE - IF IN DOUBT - ASK!

Double Deck
Open Trolley (4' 8 ½" or 1,435mm)





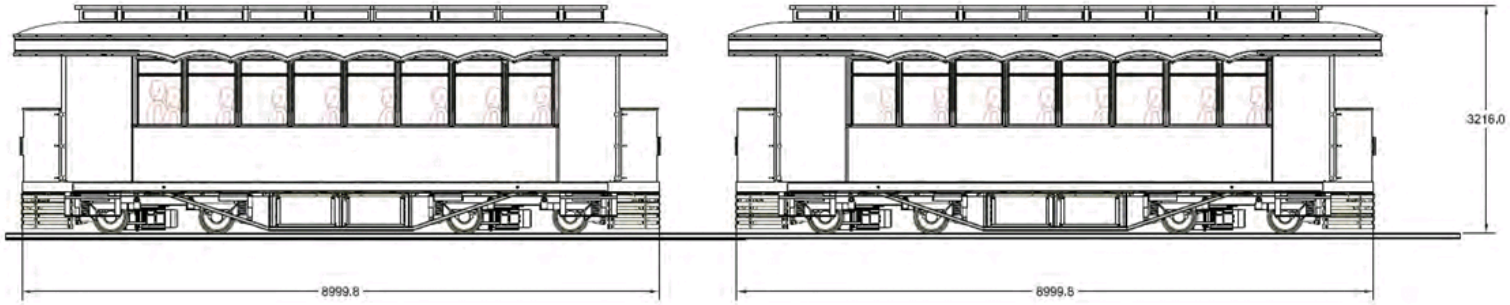


NEXT ASSEMBLY: / FINAL ASSEMBLY:	MATERIAL:	TOLERANCES: UNLESS OTHERWISE STATED ONE DEC. PLACE: ± 1.0mm TWO DEC PLACES: ± 0.5mm ANGULAR: ± 0.1mm ± 30'	SEVERN LAMB PHONE: 01789 400140 - FAX: 01789 400240 TYTHING ROAD, ALCESTER, WARWICKSHIRE. B49 6ET. ENGLAND (E-MAIL technical@severn-lamb.com)	DRAWING SCALE: NTS BORDER A3 X 1:1 LOCATION CODE: . DRAWN: DATE: APPROVED: DATE: PROJECTION:	TITLE: Double Deck Open Trolley
PROJECT TITLE:	TREATMENT:	DIMENSIONS IN MILLIMETRES (mm) SURFACE TEXTURE VALUES IN (um) MACHINE WHERE MARKED: REMOVE ALL SHARP EDGES AND BURRS	THIS IS THE PROPERTY OF SEVERN-LAMB AND MAY NOT BE COPIED OR USED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF SEVERN-LAMB		WEIGHT (kg): / DRAWING No: / PART No: / REV: / SHEET: 1 OF 1
	FINISH:				

DO NOT SCALE - IF IN DOUBT - ASK!

Single Deck

Double Trolley Enclosed



NEXT ASSEMBLY:	FINAL ASSEMBLY:	MATERIAL:	TOLERANCES: UNLESS OTHERWISE STATED OPEN DIMS: ± 1.0mm ONE DEC. PLACE: ± 0.5mm TWO DEC PLACES: ± 0.1mm ANGULAR: ± 30'	SEVERN LAMB	DRAWING SCALE: NTS	TITLE:	
PROJECT TITLE:		TREATMENT:	DIMENSIONS IN MILLIMETRES (mm) SURFACE TEXTURE VALUES IN (um) MACHINE WHERE MARKED: REMOVE ALL SHARP EDGES AND BURRS	PHONE: 01789 400140 - FAX: 01789 400240 TYTHING ROAD, ALCESTER, WARWICKSHIRE. B49 6ET. ENGLAND (E-MAIL technical@severn-lamb.com)	BORDER A3 X 1:1	Single Deck Double Trolley GA	
		FINISH:		THIS IS THE PROPERTY OF SEVERN-LAMB AND MAY NOT BE COPIED OR USED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF SEVERN-LAMB	LOCATION CODE: .		
					DRAWN: DATE:		
					APPROVED: DATE:		
					PROJECTION: X	WEIGHT (kg): DRAWING No: PART No: REV: SHEET: 1 OF 1	

Custom Specification

Among our standard range of tracked trolleys, we are also proud to provide an individual customisation service to allow each of our trolleys to be as original as possible.

Just some of the customisable features are:

- Increasing/decreasing capacity
- Bespoke design and styling
- Increasing the duty cycle – increased range
- Addition of more period features and details
- Operation on different track gauges
- Seating configuration

"Passionately & dedicatedly built by our team of engineers"

Custom Specification
Examples

Custom Specification

Examples

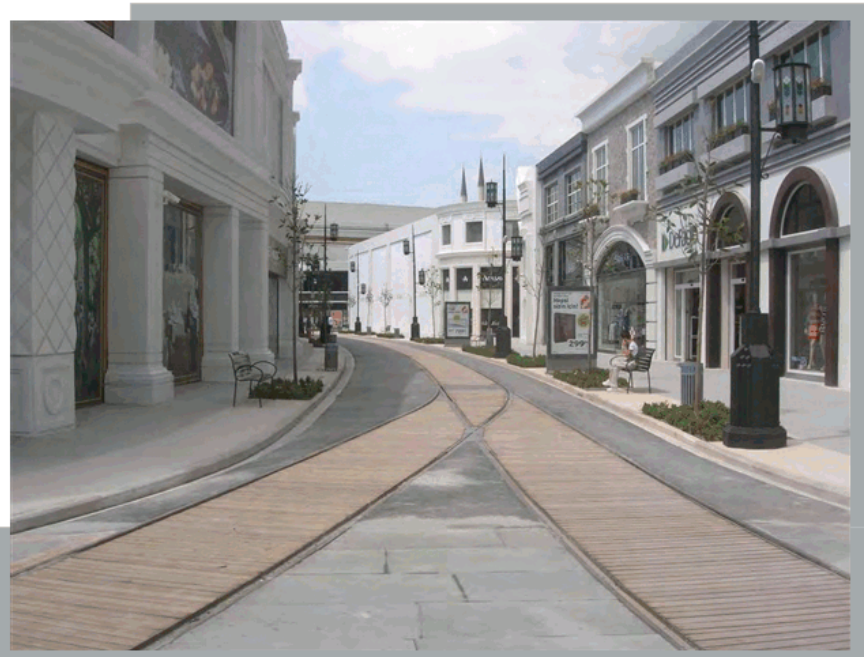
Custom Specification

Examples

Full Turnkey Solution

We can offer to every client a full turnkey package including but not limited to:

- Project Consultation
- Site Visits
- Trolley(s)
- Track Infrastructure Civils and/or Supervision
- Bespoke Tailoring Packages
- Shipping
- Rail & Fasteners
- Sleepers
- Switches/Turnouts
- Signals
- Queuing Gates
- Signage
- Installation & Training



"End to end Turnkey Solutions"

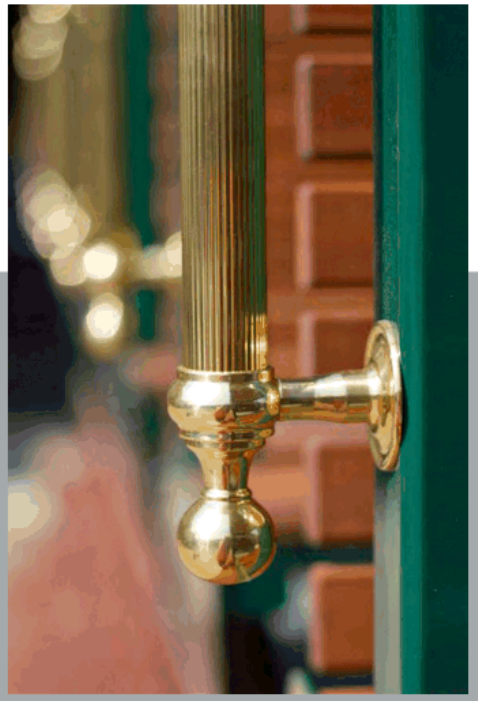
Full Turnkey Solution

Scope of Work	Scope Responsibility			
	Severn Lamb		Buyer	Either
	Standard	Optional		
Advice & Guidance				
Rolling Stock (Capacity Analysis, Headway etc…)	✓			
Track & Infrastructure (Best Practice, Design & Installation)	✓			
Site Surveys	✓			
Rolling Stock				
Design & Manufacture	✓			
Supporting Certification Documents (HSG175, EN13814, ASTM, CSEI)		✓		
Factory Acceptance Test	✓			
Infrastructure				
Ground Work & Civils (Preparing Track Bed)			✓	
Supply of Ballast			✓	
Supply of Sleepers & Fasteners				✓
Supply of Rail & Fishplates				✓
Signals				✓
Queuing Gates/Barriers				✓
Shipping/Delivery				
Packing & Loading	✓			
Sea/Air Freight				✓
Import Duty & Local Taxes			✓	
Installation				
Unloading from Containers/Transport			✓	
Installation of Track				✓
…(1) SL Supervision		✓		
…(2) SL Full Installation Crew		✓		
Installation, Commissioning & Training (Rolling Stock)	✓			
On-Site Acceptance			✓	
Aftersales Technical & Operational Support & Spares	✓			

Nambour Trolley Proposal

Summary Specification

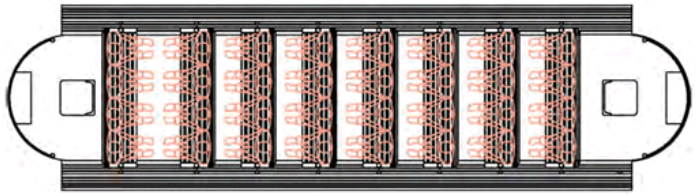
Capacity	32
Drive System	Battery Electric
Gauge	2' or 610mm
Minimum Turning Radius	20m (65 ft)
Maximum Gradient	0% - 3%
Height	3,200mm
Width	2,450mm
Length	9,000mm
Operating Speed	15kph (9mph)
Power System	2 Powered Bogies
Duty Cycle	60-70km
Charge Time	10-12 Hours



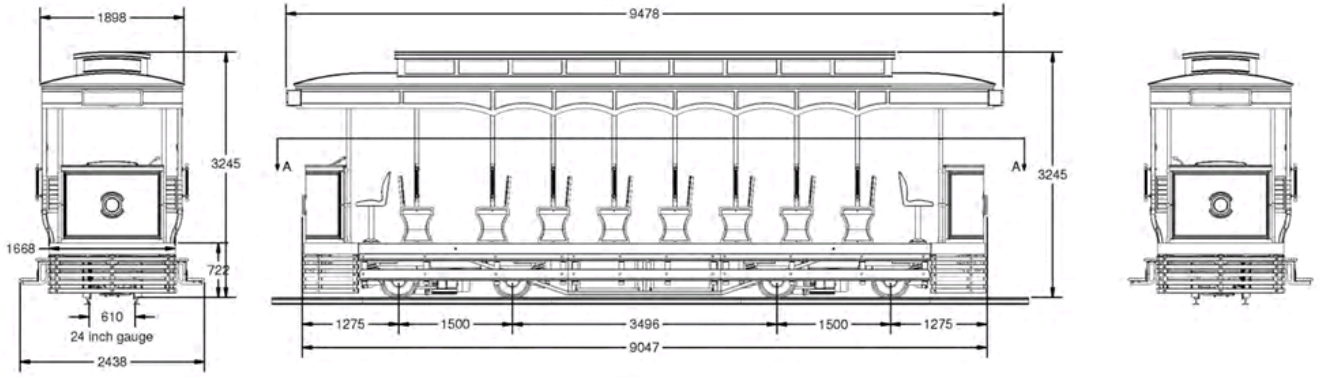
All technical information is subject to change and is for guidance purposes only. All data can be changed to suit alignment and requirements subject to engineering practicalities.

DO NOT SCALE - IF IN DOUBT - ASK!

Single Deck
Open Trolley (2' or 610mm) – Bi Directional



SECTION AA



Total capacity = 32 passengers

NEXT ASSEMBLY:	FINAL ASSEMBLY:	MATERIAL:	TOLERANCES: UNLESS OTHERWISE STATED OPEN DIMS: ± 1.0mm ONE DEC. PLACE: ± 0.5mm TWO DEC PLACES: ± 0.1mm ANGULAR: ± 30'	SEVERN LAMB	DRAWING SCALE: NTS	TITLE:	
PROJECT TITLE:		TREATMENT:	DIMENSIONS IN MILLIMETRES (mm) SURFACE TEXTURE VALUES IN (um) MACHINE WHERE MARKED: REMOVE ALL SHARP EDGES AND BURRS	PHONE: 01789 400140 - FAX: 01789 400240 TYTHING ROAD, ALCESTER, WARWICKSHIRE. B49 6ET. ENGLAND (E-MAIL technical@severn-lamb.com)	BORDER A3 X 1:1	Single Deck Open Trolley	
		FINISH:		THIS IS THE PROPERTY OF SEVERN-LAMB AND MAY NOT BE COPIED OR USED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF SEVERN-LAMB	LOCATION CODE: .		
					DRAWN: DATE:		
					APPROVED: DATE:		
					PROJECTION:	WEIGHT (kg): DRAWING No: PART No: REV: SHEET: 1 OF 1	

Trolley

Technical Specification

- The main frames are of welded structural steel construction throughout. The body and roof are also welded steel constructions.
- The power is supplied by two DC traction motors located on the bogies. Power is transmitted to four wheels on two axles.
- Wheels are 457MM diameter machined hardened and tempered steel on Ø100mm steel axles, running in TVN Plummer block self-aligning bearing housings.
- Trolley suspension is provided by suitably rated springs and shock absorbers.
- Electric starting is provided by heavy-duty traction batteries.
- The driver control position at the front of the trolley includes single lever speed/direction control and full fascia instrumentation.
- Access to the battery compartment is via the removal of the central running boards and central floor panels via fixings, exposing all electrical items for ease of servicing.

All technical information is subject to change and is for guidance purposes only. All data can be changed to suit alignment and requirements subject to engineering practicalities.

Trolley
Technical Specification

- Electrical power is stored within the battery packs, housed within the underside of the trolley chassis. Power is then derived from four power packs, mounted inside the electrical enclosures on the underside of the trolley. There are two main fuses also inside each enclosure, from there the power is taken to below the dashboard to the fuse block.

- The trolley electrical system comprises of:
  - Radio / CD / PA
  - Operational switches
  - Throttle control
  - Fuses
  - Lights
  - Amplifier

- These electrical components can be accessed within the driver's console.

- The trolley electrical system comprises of a harness that runs through the roof which supplies the trolley lights, speakers & driver alert buttons. The harness is then brought down to under floor level via the uprights that contain the driver alert buttons to complete the circuit.

- Wiring for the trolley electrical circuits are taken up the 'Passenger Alert' uprights via harnesses. These harnesses have connections which are all accessible above the second speaker from the front of the trolley.

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Trolley

Technical Specification

- Each bogie features a driven and a non-driven (braked) axle. The primary drive on each drive axle is an DC motor supported on a pivoting framework. The drive is transferred through an inline gearbox (ratio 17:1) to a driven chain sprocket. This in turn drives a triplex chain through to the driven sprocket mounted on the axle. The chain drive ratio is 1:1, and chain tensioning is achieved by maintenance adjustment of the pivoting framework geometry.

- The pivoting framework is mounted on the axle using bearing blocks, and the torque reaction is accommodated by a torque arm linkage back to the bogie framework. The torque arm linkage features resilient mounts for vibration isolation.

- Each bogie features independent suspension on each wheel. This comprises a heavy duty coil spring and an automotive (truck) shock absorber. These are bolted to the bogie framework and the axle swing arms. The swing arms are pivoted on the bogie framework and these pivot points also feature resilient bushes for vibration isolation.

- The braking of the tracked trolley is provided by two independent systems:
  - Braking from the electrical drive system (service braking).
  - Braking from compressed air brakes (emergency and parking braking).

- Mounted on each bogie is a drive axle powered by a DC traction motor which provide electrical braking (i.e. the motor does the braking) in three modes:
  1. Regenerative braking
  2. Plug braking
  3. Neutral braking

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Trolley

Technical Specification

- 80v Control system comprising 2 off mosfet speed controllers with relevant contactors and fuse assemblies all inter-wired and mounted on a common baseplate.
- The controller will provide automatic speed limiting via an external sensor/encoder picking up the rpm of the motor.
- A hand held programmer is included for remote setting up of the controllers.
- DC – DC Converter Power supply to provide 600 watts of power at 12 or 24v output. Output voltage must be stated at time of order. The converter is suitable for running all auxiliary loads up to 600 watts.
- 80v Battery pack suitable to give the required power for the given duty cycle. The battery comes complete with Autofill and electric filling trolley with all inter-connecting links and packing material. The battery is made up of 2v cells, each connected in series to give the overall capacity required. The preliminary individual cell size is 198mm x 192mm x 545mm overall height. These cells can be positioned in any reasonable configuration to suit your requirements.

All technical information is subject to change and is for guidance purposes only. All data can be changed to suit alignment and requirements subject to engineering practicalities.

Trolley

Technical Specification

- 2 off 80v motor with standard output flange and shaft.
- 2 off Hand control unit complete with dead man push button with plug in harness.
- 2 off Full Feature Dashboard Display Unit to provide the operator vital information such as Battery state, hours elapsed and speed. The display also doubles up as a powerful diagnostics tool.
- Interlocking is provided to provide, amongst other things prevent illegal operation of the tram by means of disabling the opposite cab from which the operator is driving.

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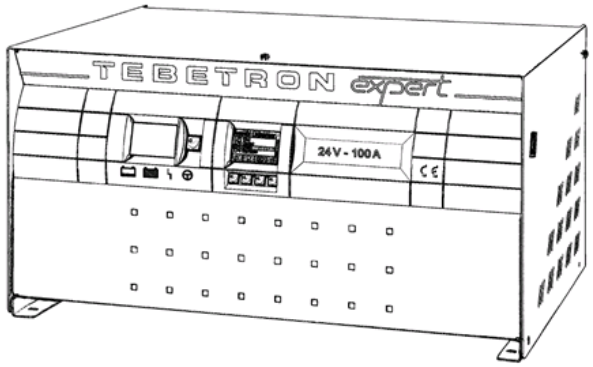
Trolley

Technical Specification

- 80v Battery Charger to recharge the above batteries from 80% discharged to fully charged within a 12 hour time period. The battery charger input voltage and configuration must be stated at time of order. Prices are based on 415v 3 phase input and could change, depending on input configuration.
- Each battery/trolley is supplied with a 3 phase battery charger.
- The charger input Voltage 415v 3 phase. The input current per phase is approx. 42amps.
- The charge time from 20% discharged to 100% charged is between 10-12hr
- The dimensions of the charger are approximately (w)100cm x (d)40cm x (h)90cm



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Trolley
Technical Specification

- Benefits of Bogies v Fixed Wheelbase
  - Reduced wheel wear with bogie system
  - Greater longitudinal vehicle stability
  - Reduced pitching
  - More control over the turning circle
  - Tighter turning radii
  - Reduced wheel noise
  - Reduced power requirements

All technical information is subject to change and is for guidance purposes only. All data can be changed to suit alignment and requirements subject to engineering practicalities.

Price Guide

	Unit Price	Qty	Total Price
Single Deck Trolley • Open • Battery electric • Operator both ends	£249,950	1	£249,950
Installation, Commissioning, Training (based on 2 engineers for 5 days including flights excluding accommodation & local ground transportation)	£13,800	1	£13,800
Shipping CIF Brisbane, Australia	£9,500	1	£9,500
TOTAL PRICE GBP			**£273,250**

Prices are subject to final specification and are on an ex-works Alcester, UK basis. All technical information is subject to change without notice. Severn Lamb will require a detailed site survey to ascertain gradient and radii. Prices excludes shipping, all certification, import duties, all local taxes, installation and commissioning. Prices are subject to our standard terms and conditions. Valid for 30 days.

"Tailored and **customised** to suit your exact **needs**"

Proposal

Terms, Conditions & Exclusions

T&Cs:

- Prices are subject to final specification and are on an ex-works Alcester, UK basis
- All technical information is subject to change without notice
- Severn Lamb will require a detailed site survey to ascertain accurate gradient and radii
- Prices are subject to our standard terms and conditions. Valid for 30 days

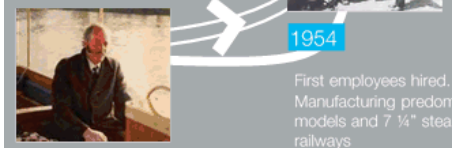
Exclusions:

- Local transportation
- Local labour
- Track supply or installation
- Shipping & delivery
- All hotels, travel & other expenses
- Import duties and all local taxes
- Support to meet certification other than EN 13814
- 3rd party certification, compliance and documentation
- Spares
- Any ground works & civils
- Track bed formation
- Plant, tools & maintenance sheds/equipment
- On site material handling for unloading from containers/trucks
- Unloading the equipment from containers/trucks
- Banking fees associated with APG/LC/Bonds etc.
- Translation – all documents to be in English


Severn Lamb
our approach
STAGE 1
Evaluation of Needs and Consultation
STAGE 2
Contract Agreement
STAGE 3
Design
STAGE 4
Production
STAGE 5
Factory Approval
STAGE 6
Shipping and Delivery
STAGE 7
Site Acceptance, Commissioning and Training
STAGE 8
Completion and Product Support

Severn Lamb through the years

1947
Severn Lamb is founded by Peter Severn Lamb. Operated initially from workshops behind a family owned hotel in Stratford-upon-Avon



1954
First employees hired. Manufacturing predominantly models and 7 ¼" steam railways

1958
Due to rapid success, the company moves into a new factory in Stratford-upon-Avon, UK

1971
First 10 ¼" Rio Grande rail train manufactured by Severn Lamb. Delivered to Drayton Manor Theme Park, UK

1976
Peter's son, Michael Severn Lamb is appointed Managing Director

1984
IAAPA membership initiated. Remains continuous to this day

IAAPA MEMBER

1993
Severn Lamb delivers steam locomotives to Disneyland Paris

1995
Queen's Award for Export Achievement is bestowed to the company having exported 96% production in 1994

1998
Delivers SL Monorail system to Malaysia

2004
Undertaking another Disney project, Severn Lamb delivers 3 Jupiter rail trains to Hong Kong Disneyland

2004
Custom built parade floats delivered for the Athens Summer Olympics opening ceremony

ATHENS 2004

2006
Patrick Severn Lamb is installed as the new Managing Director of the company making him the third generation of his family to run the business

2008
Largest single order for trains is awarded – 5 Lincoln rail trains. The client is Ecoland in South Korea

2010
Severn Lamb design and build first ULR VTS

2013
First standard gauge product is produced; a double deck period trolley destined for Vialand Theme Park in Turkey

2014 and Beyond...


Proud to be made in Britain
since 1947
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