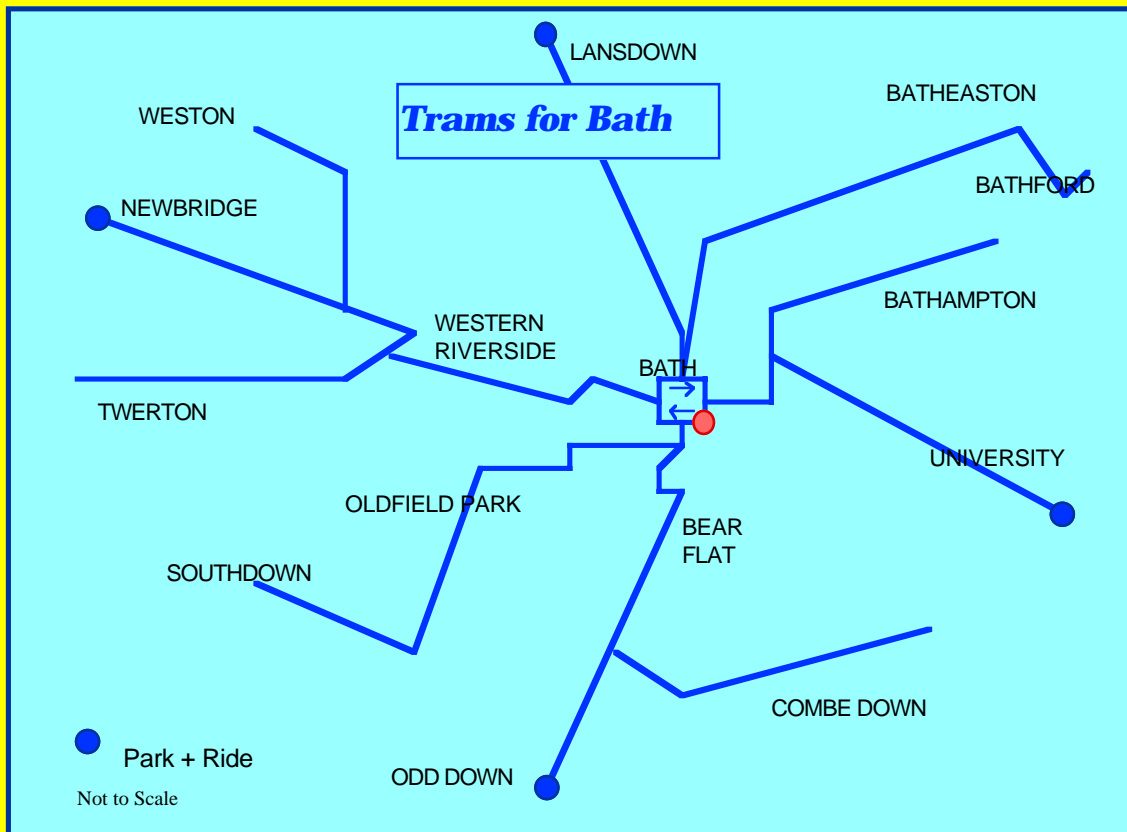
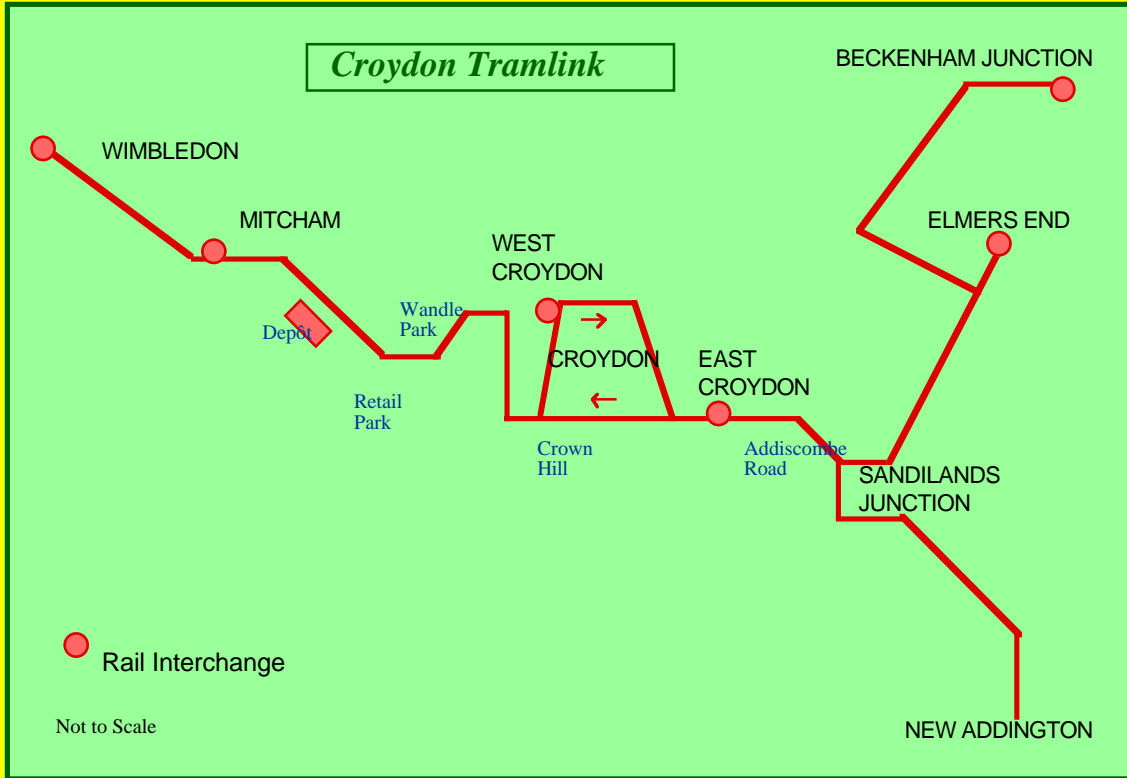


Croydon Tramlink

A Guide to Comparing

with

Trams for Bath



SYSTEM LAYOUT

Central Circle

Bath and Croydon both use the principle of radial routes joining at a central circle. This allows easy interchange between routes without having to walk from one stop to another. In both cases the circle runs clockwise only.

Number of Routes

Croydon has relatively few radial routes and these tend to operate as fast corridors. Bath has a more diffuse transport requirement and benefits from the 'network' philosophy with more routes but less heavy loading.

Old Railway Lines

Croydon has taken advantage of a number of railway alignments, some already disused, which have been used by the new routes. Bath has only the Western Riverside alignment and a short section of the S&D Railway trackbed behind Bellotts Road suitable for the presently proposed city services. For future inter-urban expansion of the system the S&D alignment to Radstock and the Midland Railway to north-east Bristol will be of great importance.



Track Mileage

Croydon has about 28 Km of routes whereas Bath would need 40 Km. In both cases, some of each route is single-track and some is double-track, Croydon having 52 kilometres of actual track.. Bath would probably have a lower proportion of double-track than Croydon, reducing the actual amount of track required, but the details have yet to be determined. It is essential that the track costs per kilometre are kept to a minimum in Bath by the use of a lighter weight track and infrastructure than Croydon. This would be permissible with the less intense service which would be required in Bath.

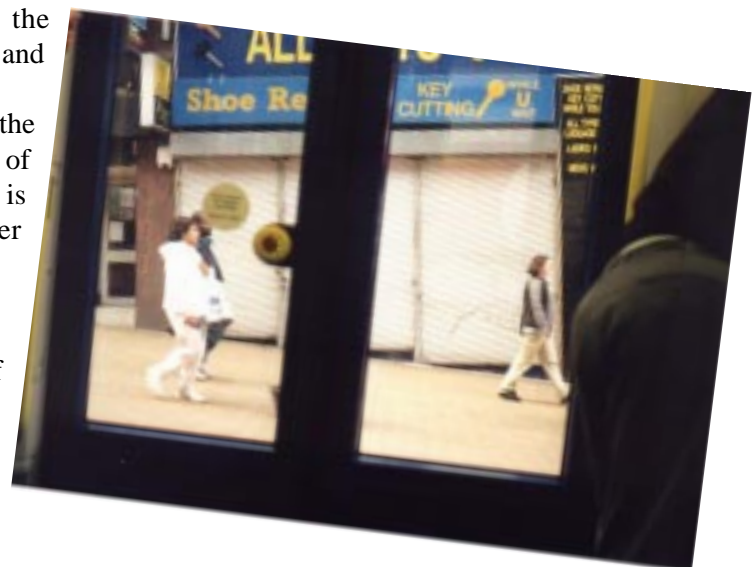
Track Gauge

Both Bath and Croydon have specified 'Standard Gauge' track (4' 8 1/2") There is little to gain from smaller gauges and Bath needs to consider future interchange compatibility with Bristol which is constrained to Standard Gauge because of a track-sharing arrangement with Railtrack.

Gradients

The steepest gradient on the Croydon system is Crown Hill which is almost the same as the steepest gradients in Bath – in Broad Street and at two places in Lansdown Road.

Croydon trams sometimes have to stop on the steep downhill gradient because there is a set of traffic lights at the bottom of the hill, this is performed with the tram completely under control and without skidding.



Crown Hill - View from inside the tram

Civil Engineering

The Croydon system needed a number of heavy civil engineering works during its construction, including two new railway overbridges (Wandle Park and Mitcham), strengthening existing bridges (East Croydon), construction of cuttings and embankments (New Addington) and re-grading existing cuttings on old railway lines (Sandilands). In contrast, Bath will need relatively little heavy civil engineering, two new river bridges (W. Riverside & Churchill Bridge) may be needed but these will be relatively cheap as they will only need to carry lightweight trams and not heavy road traffic.

THE VEHICLES

The trams were built by Bombardier in their Wien factory using a design already tried and tested - in fact the 24 Croydon trams were added onto a much larger order of 120 vehicles already being supplied to Köln. Croydon trams are 30.1 metres long, but such large vehicles would neither be necessary nor desirable in the streets of Bath. In accordance with current Continental practice, the trams are single-decked, in two articulated sections to give the necessary economic capacity. There is seating for 70 passengers, but because of their smooth ride, trams are permitted to carry many more passengers standing during the rush hour, nearly trebling their carrying capacity.



The Tram for New Addington waits at East Croydon Railway Station

Carrying Capacity

Croydon normally has 21 of the 24 trams in operation at any time and this gives the system an ultimate capacity of 75,000 passengers per day. The trams proposed for Bath would seat about 50 passengers but the 'inner cordon' traffic census figures for all modes of transport in Bath are approximately 90,000 per day, so the proposed 40 trams should be able to handle a large proportion of those journeys without overcrowding, especially as the busy period is spread over a longer time period and the movement of passengers in Bath is more diffuse.

Single or Double Decked?

Continental practice has favoured the single-decked tram and the British practice of using double-decked vehicles now seems unusual, because many British tramways were forced to close by factors unrelated to their success as public transport. The double-decked design has many advantages which would be particularly relevant to Bath, and the possibility of using such vehicles as a way of optimising the system design must not be dismissed. Some tram manufacturers can already offer the option of a double-decked vehicle, but others are less able to adapt their designs.

Accessibility

Croydon trams, like all modern trams, are of low-floor design so as to meet the current legislation for accessibility; and all tram stops on the Croydon system have the same low platform height to give level access without impeding normal pedestrian movement or presenting a tripping danger when the tram is not at the stop. Manual and electric wheelchairs can be rolled straight into the tram, as can push-chairs and perambulators. The number of electric wheelchairs being used in central Croydon has increased noticeably since the trams began running because their range is now extended beyond that provided by batteries alone. Two wheelchair positions are provided in each tram and, because of the smooth ride, no restraint is thought necessary. The proposals for Bath will have to meet all the relevant legislation and ensure equally good accessibility for the increasing number of elderly and disabled people living in the area. In particular, the tramway will solve the current problem of access to the Royal United



Easy Level Access

Hospitals site at Combe Park for the majority of day patients, staff and visitors

Tram Stops

Because Bath trams should be somewhat smaller than those in Croydon and are not called on to handle such large surges of passengers, they will not need as many doorways. This, in turn means that the tram stops can be smaller and will integrate less obtrusively into small suburban streets. By using a single large doorway in the centre of each side of the tram, the raised platform for Bath trams need be no longer than an ordinary bus stop.



HOW IT FITS INTO THE TOWN CENTRE

Croydon, like Bath, had been without trams for many years. During that time, the town and peoples' expectations have both changed and a great deal of thought was necessary before putting back the rails and wires. It has come as a pleasant surprise to the people of Croydon just how quickly and easily the tramway has fitted in and it would be difficult to find even a handful of objectors now the system is operational.



George Street Croydon

Picture - Stephen Parascandalo

Narrow Streets

The pictures show how the tramway is integrated into Croydon's narrow streets. There is still room for pedestrians and cars – and even some designated parking space. Sharp corners are no problem, trams are surprisingly manoeuvrable and never deviate from their marked-out pathway.

Tram Rails

The rails cause no tripping hazard to pedestrians and, despite bad press reports from Sheffield, do not appear to increase the risk of cars skidding. Bicycles with narrow tyres can become trapped and overturned if they are ridden along the rails instead of across them – cycle lanes must be laid-out with this in mind.

Overhead Wires

The overhead wires are unnoticeable in most places and special care has been taken in the historic part of the old town to minimise poles by supporting the wires from buildings wherever possible.

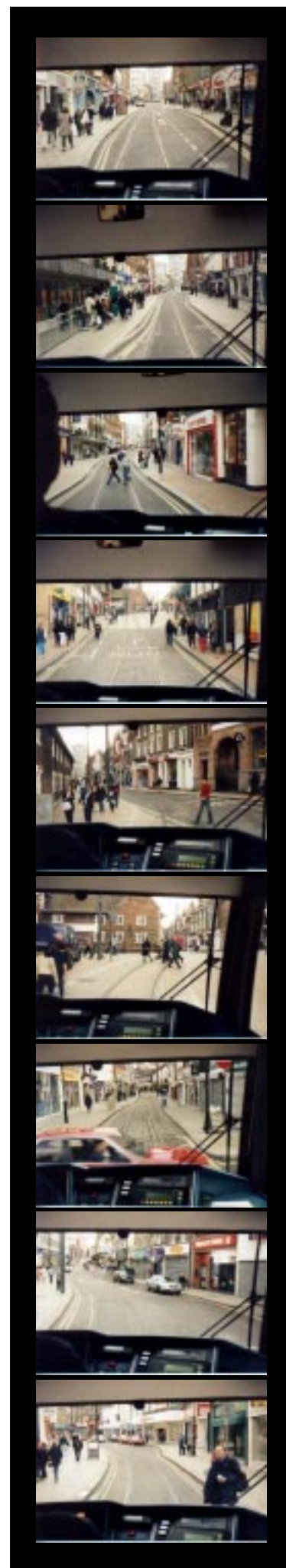


Church Street Croydon

Picture - Stephen Parascandalo

wires from buildings wherever possible. The central streets of Bath are even better provided with suitable buildings than Croydon. The poles in this area are of more elegant design than those on the rest of the system.

Unfortunately, across the rest of the system, budget cuts combined with unexpected regulation by H.M. Railway Inspectorate obliged the planners to install heavier tramway poles than anywhere else in Europe. The result is more like a main-line railway than a tramway. Many of the citizens of Croydon were upset when they discovered this departure from the plans; and tramway promoters, who had been hoping to use Croydon as an example of good practice, agreed that this did no service to their cause. Bath must be vigilant from the outset to ensure that this is not allowed to happen again.



Right: Journey Through Central Croydon One Sunday Morning – Viewed from the Back Cab of a Tram

HOW IT FITS INTO THE SUBURBS



Parkway – New Addington

the objections raised to the restriction of through-traffic have been more than countered by the provision of a genuine alternative to the car for many of the journeys displaced.

WHO CATCHES THE TRAM?

The short answer is “everybody”.

Commuting by public transport is more strongly established in the London area than it is in Bath. This is primarily because London is perceived to have a more ‘useable’ public transport system and because the roads are even more congested than Bath. Nevertheless, car traffic is still on the increase in London and there is a large suppressed demand, just as there is in central Bath. The tram is the only public transport reversing this trend.

Not A Bus

For people who perceive the tram as a sort of bus, it comes as a shock to find out what happens when one is installed. The huge increase in public transport use which results. The sudden decrease in car use – percentage reductions that traffic planners can only dream about happen almost overnight. In Croydon, the Whitgift Shopping Centre reported a 23% increase in trade and a 12% decrease in weekend car parking within the first 10 weeks of tramway operation. The tram stop at Ampere Way, which was not expected to attract many passengers because it served a group of supermarkets, has become one of the busiest on the system.

The surprises go on and on – but they are all pleasant surprises.

There is an immense variety of route within the Croydon system. Disused railways, dual-carriageways, open park land, residential roads, golf courses, housing estates, allotments, industrial land, new developments and even car-based retail development. Almost every condition likely to be met in Bath has already been encountered in Croydon and the parallels can most easily be drawn when visiting the system.

Addiscombe Road is a superb example of the way a tramway can be integrated into an ordinary street in a residential suburb. Once, this had been a leafy, high-class residential road; but increasing traffic had turned it into a noisy polluted racetrack. Despite vociferous objections from certain residents that the tramway would ruin the neighbourhood, it has actually given them back the quiet road they once knew. Residents still have car access to their houses, but



A Pram in a Tram



Left: Crowds Board a Tram at Beckenham Junction



Right: Even With 80 Passengers On Board, The Tram Doesn't Seem Crowded

The Service

The service planned for Croydon was to have been 6 trams per hour on the routes to Wimbledon, Beckenham Junction, and Elmers End; and 9 trams per hour on the route to New Addington. This has been proving to be slightly optimistic while the system settles down, but the operators, First Group, are achieving a 100% service for most of the time. An unexpectedly high incidence of vandalism has put more trams out of service than was originally allowed-for. The use of conductors on the trams has worked very well in Sheffield and is proposed for Bath, particularly because of the greater level of confidence it gives to the elderly.



Incidents, not attributable to the trams themselves can caused services to be re-timed and the Passenger Information Displays on every tram stop keep passengers informed when this happens. A central control room ensures that an inconvenient incident does not rapidly propagate chaos throughout the system.

Tickets and Interchange

Trams do not waste time waiting while the driver sells tickets, all tickets must be pre-purchased and available for inspection by Revenue Protection Officers on the tram. London already has a Travel Zone system and efforts have been made to integrate disparate ticket machinery so that Croydon Tramlink fits into the greater scheme. Six main line railway stations are served by Tramlink and the local bus services have been realigned to take advantage of the increased passenger numbers to be obtained from integration. An unfortunate side-effect of the tramway in New Addington has been an increase in on-street daytime parking in residential areas, as commuters use the area as an impromptu Park + Ride for Croydon or even Central London. There are already calls for this route to be extended.



ONLY THE BEGINNING

The system which has just opened is only the beginning of a network of tram lines which are being planned to serve London. If the demand for extensions was not taken seriously a few years ago, it certainly is now. The practical demonstration of what trams can achieve is bringing great pressure on the authorities to repeat this success across the capital, already there are several well-advanced campaigns to extend the system. The most interesting plan is the result of a study on the north-south link from the Croydon area through Streatham to central London. The study shows that there is a suppressed demand on this alignment which far exceeds the capabilities of the existing intensive bus service – even a tramway would be hard-put to cope with it. If this demand could be tapped we should see trams running in central London for the first time since the 1950s.

There have been those who, even before the last routes were closed, said the London trams would eventually have to be brought back; but the study which began the serious consideration of a tramway revival in Croydon was undertaken in 1987. It recommended 3 lines, concluded that they would probably be viable and provided the impetus which led to further study and the system as we now see it – a gestation time of 13 years

The Trams for Bath conference was held in April 1998 and all Local Councillors were invited. The recent Hyder study has concluded, similarly that some of the Bath proposals could be viable and merit further study.

Can the process be speeded up? What will Bath be like in 2013 if we don't have trams?



"Old Meets New" - by John Meredith
CROYDON'S TRAM

WHERE TO FIND TRAM INFORMATION ON THE WEB

Trams for Bath

Contains the full proposals for a modern electric tramway network in Bath. Maps, calculations and detailed descriptions are all included for readers who seek an in-depth analysis of the problems or a more general guide to tramway planning.

<http://www.bathtram.demon.co.uk>

Trams for Bath Links Page

Part of the TfB website which has links to all the sites listed below and many more tram websites besides. Also includes links to pollution monitoring data, county archives, local and national government papers.

<http://www.bathtram.demon.co.uk/Website1/tP02.htm>

Bristol Trams Update

Up-to-date information on progress in Bristol will be found on Brian Lomas's trams webpage.

<http://www.tramdev.clara.net>

The Unofficial Croydon Website

The full story of the building and operation of Croydon Tramlink – warts and all. The website is straightforward, well laid-out and liberally illustrated with photographs to show every stage of the construction process and every aspect of the completed system. It includes an ongoing diary of the entire operation from day one, which faithfully records the dozens of minor incidents, often later conveniently forgotten, which should be compulsory reading for anyone involved in tramway promotion.

<http://website.lineone.net/~dodosjp/index.html>

Croydon Tramlink Website

The official guide to Tramlink. Decorative and animated, it is a useful general knowledge reference source for the system.

<http://www.tramlink.net>

Croydon Webcam

An automatic camera looking down on East Croydon Station. When operational, it provides a fascinating view of a busy tramway interchange in action. If you think a 20 minute bus service is good, have a look at this.

<http://www.trap-door.co.uk/webcam.html>

The Light Rail Transit Association

There is something on this site for everyone from the complete beginner to the enthusiastic expert. Whatever level of knowledge you have about trams, you will always learn more from this site. Updated regularly, it is the definitive website on trams in the U.K. and a gateway to tram websites throughout the world.

<http://www.lрта.org>

Nottingham Tramway Website

This is the next tramway to be built in the U.K. Construction started earlier this year and is well under way. A superb example of a local authority ensuring a major project runs smoothly by keeping everyone informed about what is going to happen, why and for how long. Even the designated routes of contractors' vehicles are given in advance.

<http://utc.nottsc.gov.uk/ttptnet2.htm>

The National Tramway Museum

Not just for those who yearn for the 'Good Old Days' but an absolute must for anyone seeking to understand the basic principles behind the operation of any tramway. A good day out if you like visiting working museums but also a storehouse of hard-won knowledge and experience if you go into greater depth. Genuine researchers are permitted access to the library, but this must be arranged in advance.

<http://www.tramway.co.uk>

*Published by **Trams for Bath***

88, Mount Road, Southdown, Bath BA2 1LH

Whilst every effort has been made to ensure that the information in this guide is accurate, Trams for Bath cannot be held responsible for errors or omissions.