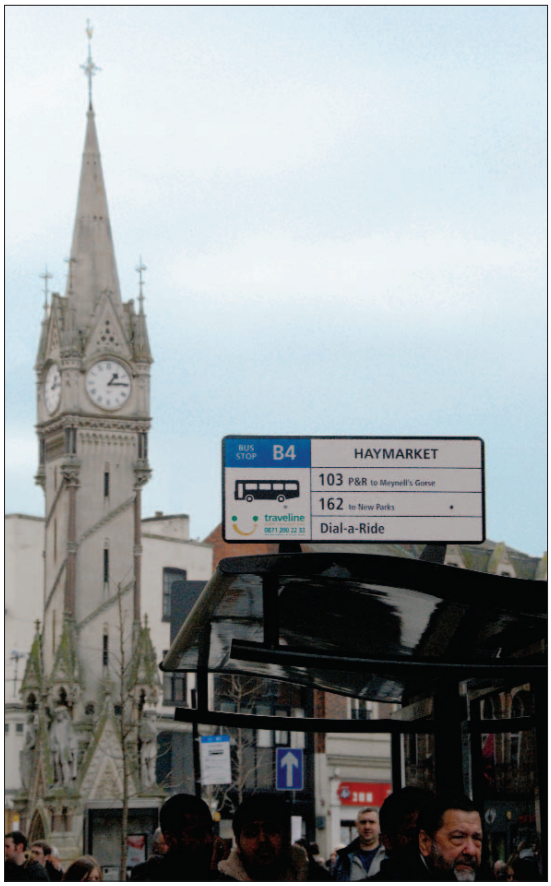
Leicester City Centre



Changing one-way flows can cause havoc. Motorists and public transport users alike often don't pay much attention to their local environment when travelling around it. They don't need to. However, when an area of a busy city centre is turned around, the subliminal model of their home territory doesn't work anymore. For a while they are actually worse off than a visitor unfamiliar with the area, because their pre-conceptions no longer fit reality. After a bit of a bumpy ride with information provision during Phase 1 of such a road network reversal, and allied to the construction of a new shopping centre, Leicester City Council asked for help with Phase 2. The result was very well received by all concerned and the successes of it led to the delivery of a major upgrade to passenger information that encompassed all city centre bus stops.

Joanna Aitken, Transport Strategy, Leicester City Council: *"FWT are always very receptive to resolving any issues that arise in a scheme that involves multiple partners".*

HAYMARKET DOES AN ABOUT TURN

In 2008, following the first phase of altering major traffic flows in the city centre, where a section of road was closed with consequential movement of bus stops, adverse criticism came the council's way because of insufficient clear information about the changeover. With the second phase due soon, FWT was asked to advise on this next, more extensive change.

As with any such project, the first thing to do is establish the starting point. What is in place now? Where is it all? What is it succeeding at? What will suffer as a result of the changes?

WHAT WE FOUND

There are about 80 city centre bus stops and two bus stations. We started by examining the one-way street (Haymarket) which was about to be reversed and also the new road alignments being built at the shopping centre. The roads linking all this affected about 15 bus stops and, owing to the flow reversal, those in Haymarket would be moved across the road. Nine stops in Haymarket would be replaced by only five on the other side of the road, with some overspill into nearby roads, as well as additional stops in the under construction Causeway Lane about a quarter-of-a-mile away.

It was immediately apparent that some operators were providing timetables and some were producing none. Most obviously though, there was no wayfinding to help people get to the right stop. Well meaning attempts at a Where to Board (WTB) scheme were doing nothing as the bus stop identities (alpha-numeric codes) were poorly displayed and not at all obvious what they were for, or why they were there – and there was no places served index or map. The real-time displays at selected stops were not working fully and, from the point of view of our task, was adding to the stop identity confusion.

Coming to it cold, seen on the roof of a shelter, what does a passenger seeking help make of this? If the association is made that the route numbers to the right relate to the operators in the middle, who operates 73? And when we tested a few people, most thought R2 was a bus route. From the operators' point of view, they were not succeeding in 'selling' their own routes. The mystery of 'R2' is compounded by there being no map with which to make any tenuous association.

FWT took responsibility for managing all stages of the city centre information changeover and not just the design of the individual components. Such an approach saves everyone time and money: fewer specifications, fewer meetings – just professional recognition that the design company should know how to do it right, because they have been doing it in many places for over 30 years, always with positive end-user endorsement.

When designing material that is intended to inform, it is crucial for the designer to put himself in the position of the user. It is actually quite hard to do and blot out what one knows and visualize what others do not. With that in mind, how would someone unfamiliar with the 'system' know what 'H1' means. As it happens it is the bus stop identity, but with no map to which one can refer for either confirmation or to engender an 'ah, that's what it is' moment, is 'H1' a bus route number?

How would anyone know what 'quicksilver shuttle' is, though its name implies it is a named bus service. For the same reason therefore, is 'star trak' a bus service? We later learned that 'quicksilver shuttle' is an encompassing brand for a small group of Park & Ride routes, within which, confusingly, each has a separate route number; 'star track' is the brand identity for the real-time system.

THE WAY FORWARD

With only a few weeks before the second changeover, we produced a 'news' notice panel advising bus passengers what was going to happen and when. This had a concise message and showed the locations of the replacement bus stops, accompanied by a 'now' and 'future' conversion table, listing all bus routes affected. This was posted at all city centre stops, affected or not, and so providing blanket coverage.

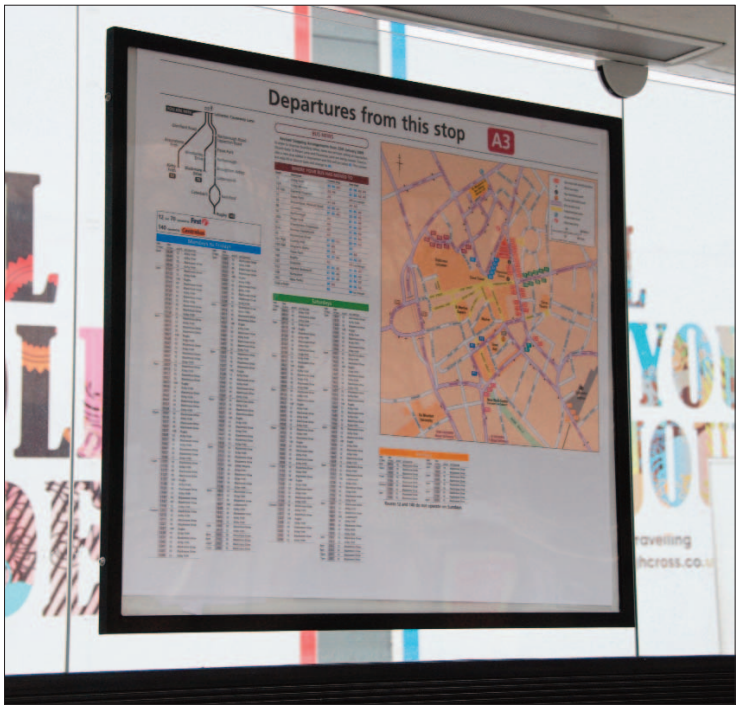
The new stops in Causeway Lane were all to receive new and spacious shelters. The stops in Haymarket moving across the road to face the other way would retain those they already had. Unfortunately the two types of shelter had very different specification poster cases. (This is a recurring problem in the UK and causes massive excessive spending on content design and on-going revisions. The UK desperately needs a design standard for this, as well as for the quality of their structural design.)

We next concentrated on content designs for the shelters, both moving and new. In order to remove any further identity confusion, all the stops in Haymarket, alpha-numerically depicted in the H1 to H9 range, were replaced with B1 to B5. An additional stop round the corner with no shelter was designated B6 as a local cluster. All the new stops in Causeway Lane were designated A1 to A9.

The rest of the city centre had clustered stops with alpha-numeric identities attempting mnemonic representations of their catchments. This is a very well-meaning and common practice in the industry, but more later of why this is not as helpful as it might seem.

A WHERE TO BOARD SCHEME IS NEEDED

It was clear to us that Leicester cried out for a proper Where to Board Your Bus (WTB) scheme, but devising a properly



Following the implementation of the Phase 2 move, seen here is a poster display at one of the new stops in Causeway Lane.

At the top left is a linear diagram showing main places served for each route from this stop. The operators' names are stated for each one and so making a better connection to their individual routes than a sticker on a bus stop flag. The need for the passenger to look at the flag at all is almost unnecessary as there is a very prominent headline message, crucially at eye level, stating the identity of the stop. The map provides the reassurance of being in the right place. The rest of the poster contains a stop-specific timetable divided for days of the week.

functioning one would take time to compile a places served index and replace every bus stop flag. This was not a practical option with only a couple of weeks to go.

Though far from ideal without an index, we included an existing WTB map at all affected stops that had sufficient space. This was of use for confirmation that the reader was at the right place, but added no value if one wanted to look up a destination and find out how to get to it. This would have to wait.

AFTER THE DUST HAD SETTLED

The new arrangements were quite complex and included changes to the traffic flows along several roads. This created a number of challenges, but having equipped the new stops with re-designed flags this made the timetables and map make more sense of one another. We also countered the argument of 12-hour versus 24-hour preferences, by catering for both, with little impact on space requirement. When asked, the public liked the expanded information. The move went very smoothly.

Encouraged by the all round reaction from Julian Heubeck and Joanna Aitken at the City Council, with whom we worked closely, we arranged a meeting to discuss the way forward. They told us that they had received no complaints this time and that the general mood was of praise from the operators. The local newspapers and radio had been less than complimentary following the Phase 1 change but had remained silent this time.

With things now more relaxed and no deadline pressures, we explained in more detail why the existing lettered bus stop scheme was not really helping much.

Some commentators say that at-stop information is un-necessary because people look on websites before setting out. More and more this may be so, but there is more to it than that. Even if users have a computer and look at websites, they still need reassurance at the bus stop that they are at the right one and that they have made the right decision. So, the alpha-numeric codes were of some use to people using Traveline as the flag displays provided the reassurance in the street, that the information gleaned from the website matched up – 'yes, I am at the right stop'.

That said, what about people not using Traveline? A lettered bus stop scheme has much more to offer as long as all its components are correct and in the right place. The system also needs blanket coverage in the street to provide its best value.

THE PRINCIPLES OF A LETTERED BUS STOP SCHEME

The real benefit of a well-designed WTB scheme though is to be found in the street and not at a computer screen. Some of the following observations are obvious but need stating as other important aspects of a scheme may become lost without them. The letters on the flags have two jobs. Firstly, they identify the bus stop relative to the map; secondly, they act as signposts when searching for a stop when walking along the street.

The likelihood of someone turning up at precisely the right stop by chance is remote. Arriving on foot at any stop with identifying letters on it allows the would-be passenger to establish exactly where they are. For this to work properly the map and places index should be posted at every stop. It's a sort of static navigation system – just like road signs provide to drivers.

Many schemes try to relate the bus stop letters to match the names of their locations (street or place name) with mnemonic letter codes. This is a very well-meaning idea on the surface but, when examined more critically, actually doesn't help the user a great deal. Furthermore, it will usually fail where two significant roads or places have similar names. (The system we found in Leicester broke down at stops in the 'E', 'P' and 'W' series and double letters were resorted to at 'SN' and 'RS', whereas all the others were single. This can muddle the situation for the user and makes it that bit harder for them to work their way through the information, though they will probably not realize it.)

The primary function of lettered stops is to identify them individually on the map, having been directed to one from the index. (Without the map, the letters on the stops have little or no impact on the user.) The logical sequence for the user is:

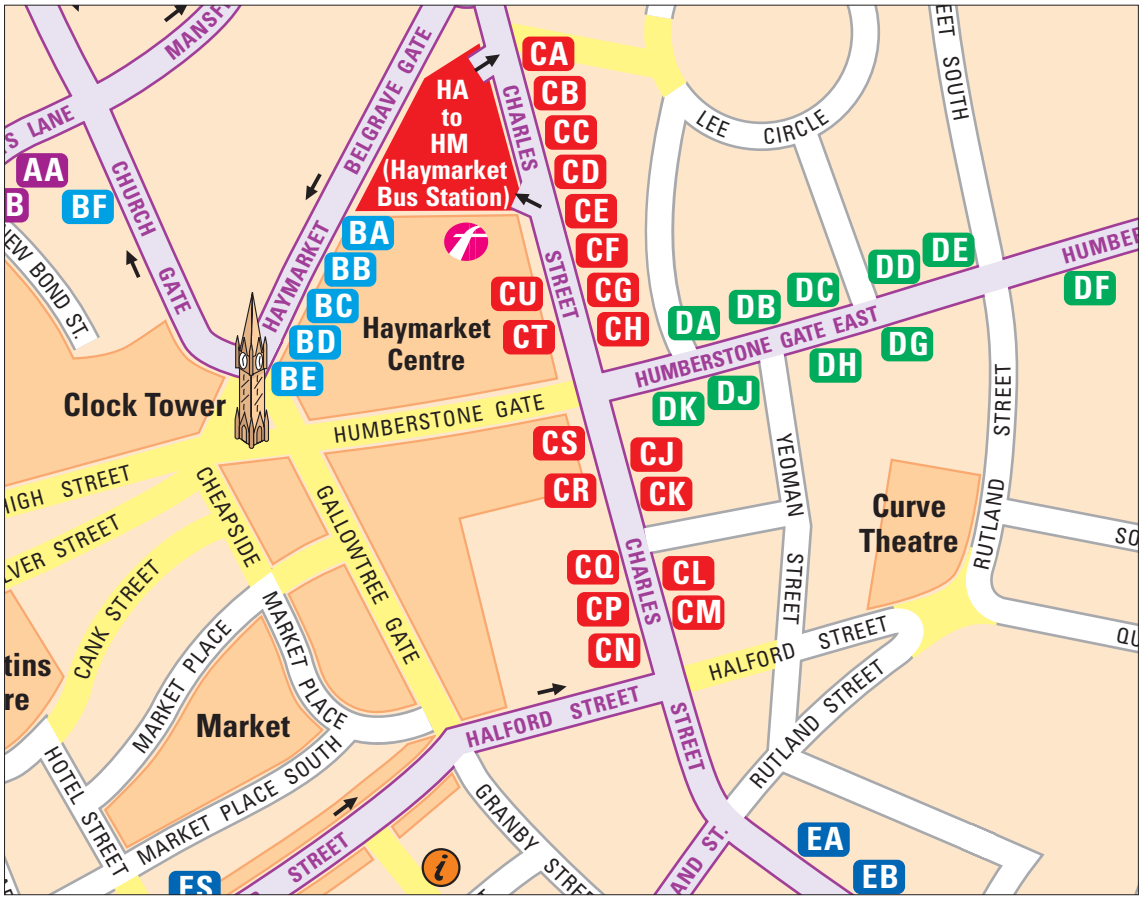
- look up the desired destination in the map index (which is alphabetical);
- find out which bus route number goes to the chosen destination;
- note the appended lettered stop(s) served by that bus route;
- find the bus stop letter on the map that nearest serves the chosen bus route;
- walk to that nearest stop.

This is obvious perhaps – but stating the obvious sometime makes people realize it wasn't. The logic of using any index is to find out a fact – in this case a bus stop letter. Searching the map to find the stop letter must be made as easy as possible.

The stops in Leicester were in alpha-numeric groups and each group had its own colour – for example C1, C2, C3 up to C34 were all red; E1 to E10 were green. Therefore the only thing that visually separated stops within each letter group in Leicester was its number – not the letter, that has already done its job from its colour group.

The easiest way to find a stop number within the letter group on the map, is by having the sequence of the numbers running round the map in a logical numerical sequence. Trying to letter sequence stops according to the way the buses physically run is a red herring. The point is that it is the bus stop that is being searched for and that is what needs to be made easy – not the direction in which the bus will travel once it has been boarded.

Another new shelter in Causeway Lane. The absence of a WTB places served index severely reduced the map's potential. However, we felt it was better to at least display a local map and provide some assistance than nothing at all.



Having derived from the index that one is searching for a red 'C' series stop, or a green 'D' series stop, it is easy to find the right one. Colour blindness is not an issue. Even if the reader cannot tell red from green, the letter groups provide adequate separation. For those who are more fortunate to not suffer from this, the search is even easier still.

We usually try to arrange bus stop identities clockwise within colour groups. The reader doesn't need to know this, but we have helped them without them needing to realize it, because we are conditioned to clockwise searches, as opposed to anti-clockwise, from a very early age. Observing a '2' next to a '1' tends to make the reader expect '3' to be nearby. In looking for (say) '9' the search is made easier from having subliminally learned the visual sequence. The same works for letter groups. All of this would be made notably harder if the colour grouped letters were not portrayed in the same colours in the index – this must not be overlooked. The job of the colour groups is to act as a filter. If the reader has found they need a green stop from the index, once they see the group of green stops on the map, the search for the right alpha/number is confined to that area of the map.

The next important message is that we strongly recommended not using numbers within stop identifiers at all. Most bus routes use numbers (these are actually codes, for where the bus goes and by which course along the streets) and some route identities mix letters and numbers. In order to separately identify bus stops from bus routes, a different coding system should be used. This reduces the cognitive load on the user and reduces muddling the user's thought processes by eliminating mixed messages. 'Am I looking for route 12 at stand 11 or for route 11 at stand 12?' So, numbers for bus routes and letters for bus stops.

IMPLEMENTATION OF A FUNCTIONAL WTB SCHEME

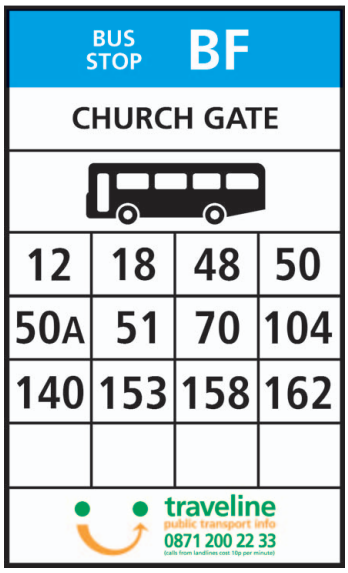
Having explained our principles to the Council they said, would we come back and explain this at the next monthly meeting they had with the bus operators, which we agreed to and did. After some initial scepticism, all around the table soon realized the potential benefits and acknowledged their co-operation.

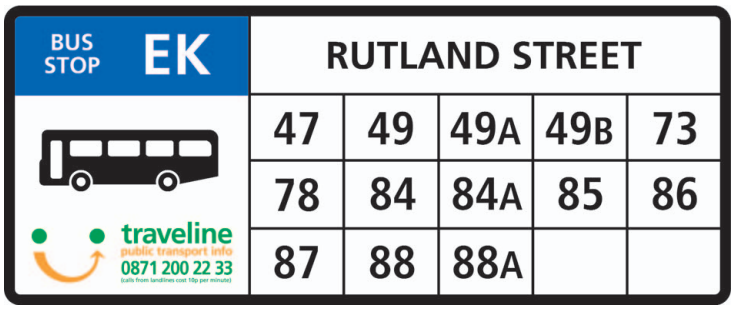
With funding available from a congestion reduction grant, the Council gave us the go-ahead to work out a fully functional system for the whole city centre.

We carried out a full survey of all bus stops to establish infrastructure requirements. Most stops had poster cases (unfortunately of three different sizes across the range) but some would need them adding where there were none. Furthermore, some stops were not lettered at all and needed drawing in. We also firmly believed that the 'alighting only' stops should be equipped with the WTB index and map, though they of course did not need timetables. Passengers alighting may still require another bus and the WTB panel would help them find the required stop for the next stage of their journey easily.

We worked out a better breakdown of colour grouping for the stops and removed all numbers from bus stop identities as well – they would now have double letters throughout.

A WTB scheme is a kit of parts that must work harmoniously. The places served index was created as an ally to the map. A range of designs was created for new bus stop flags to focus





We simplified the lettering system and made it clear that 'EK' is a bus stop. Route numbers are codes relating to the course the buses each take; bus stop letters are codes for the location and the two received different nomenclature to remove ambiguity and confusion. Numbers were therefore eliminated from all stop identities. Whether a shelter roof plate (EK, previously R2) or a pole-mounted flag (BF, previously B6) the visual language is the same.

on their primary functions. The designs were modular to cope with shelter roof plates and stand alone pole-mounted flags; it was important they all looked the same. The flag design was capable of handling between twelve and 20 routes serving and could also display relevant messages such as 'All buses from here terminate within two stops'. All operator logos were omitted and incorporated in the poster displays – being at eye level they provided a better 'sell' for the bus companies.

THE SHELTER ROOF PLATES AND BUS STOP FLAGS

Producing a proper set of design guidelines is time-consuming and expensive in order to cater for every eventuality that occurs now, and might occur in the future. They also only work in the hands of users who have been properly trained to understand and interpret them. It is surprising how many variants of requirement can occur in a city centre: conventional bus routes (including prefixed and suffixed), Park & Ride, Dial-a-Ride; limited stop, alighting only, as well as variants of display space availability and quantity of routes serving.

Therefore, to reduce costs and significantly increase consistency, we took responsibility for the design of all the infrastructure for manufacture. This latter point is very important. The best systems have all components visually unambiguous and seamless.

We avoid using corporate typefaces that are inappropriate for the job, as no single typeface can work in all situations well. We chose a typeface with a full family of compatible variants. Though all from a harmoniously designed family, the stop location is not the same as the route numbers, which are larger and condensed. Suffix letters for route numbers are not full height as this causes just a little deliberate visual disruption. By creating a grid, individual route numbers are easier to read separately, especially when in a hurry – which is when most mistakes occur. A good design should anticipate the kind of errors that people are most likely to make.

Many lettered stops do not make it at all obvious that the letters are the identity of the actual bus stop (see also the 'Derby Bus Station' case study). We rectified this beyond doubt by making the stop letters sufficiently prominent to catch the eye first.

The design has 'Park & Ride' a bit smaller than the route numbers to allow the associated route number to catch the eye first though still associate as a pair. 'Dial-a-Ride' is similarly treated. If it was as big as the route numbers it would be too dominant and spoil the balance. Supporting messages such as 'Alighting only' have a different size to maintain the best visual balance. We even had a solution for stops with too little space and information overload problems. Even with reduced facts forced on us through lack of space, the vital information remained in place, and clear.

Every bus stop effectively became a self-contained information point. All shelters received a Where to Board map and index – providing the 'where to next and how?' answer; a stop-specific linear diagram in the middle has all the operators logos appended to each of their routes more successfully than on a flag, and at eye level – providing the 'where to from here?' answer; a stop-specific timetable is included to the right – providing the 'when?' answer.

MANAGEMENT OF THE ROLL-OUT PROGRAMME

During our survey we photographed every bus stop and recorded the infrastructure (street furniture) in situ. Liaising with the client it was agreed to include about six existing stops that had not been lettered previously and the new lettering scheme was agreed. We then produced a spreadsheet showing the conversion from alpha-numeric to double letter alpha, accompanied by maps of before and after. The spreadsheet gave full details of what infrastructure needed purchasing and fixing and a complete breakdown of which products (posters and panels) went where.

With an implementation date agreed an extensive production programme was run to ensure the delivery date was met. About 100 posters and panels would need printing (mostly unique) and posting and a sensible lead time would be needed. Mindful of the 56-day rule for bus registrations, and also that legitimate 'late' registrations could come in with as little as a week to go, we didn't want to start too early and then have to be revising material before it was finished.

All stops were equipped with their new posters on 29th May 2011 and FWT helped install all material to ensure nothing was missing and everything was in the right place.

We thoroughly enjoy our working relationship with the City and County Councils and also attend their meetings with the operators to ensure everyone's voice is listened to. Since going live city centre-wide, we have increased our involvement with the Council's data source files and find it very satisfying that all parties see the benefits, with bus stop information, as well as, of course, the flags and shelter roof plates, being kept up-to-date.

Above: Where no shelters exist, two pole-mounted cases were fitted and the Where to Board adapted to suit. The linear diagram and timetable went in the other case. This stop is alighting only but still has a Where to Board to help passengers on the next phase of their journey.

Below: a run of flags at Haymarket Bus Station.