

The New Norwich Union

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, be customer focused, and use 40 years of experience to ensure a positive outcome.



‘Partnership’ between client and supplier may be a well-worn marketing cliché, but, in truth, the stronger the partnership, the better, more painless and more cost-effective the potential project outcome.

Jeremy Wiggin, Travel Development Team Manager, Norfolk County Council: *“We are delighted with the way in which the project has turned out. From initial design concepts through to printed material installed at bus stops, we have benefited from the vast experience and knowledge of the FWT team and have had complete confidence that the approach we were adopting was going to bring a step-change in the quality of information presented.”*

This Case Study explains how Norfolk County Council was assisted by FWT to secure investment from the Government’s Better Bus Area and then implemented a successful project in Norwich City Centre. Delivering such projects requires professional experience, attention to detail and working in effective partnerships with the local authorities, bus operators and users. We explain the effective working relationship between client and supplier, a ‘before and after’ photo gallery of what was achieved, and eleven key benefits which form a sound basis for completing further work in Greater Norwich in the coming twelve months.

BUT LET’S START AT THE END

The blue text above says: “Such an approach saves everyone time and money: fewer specifications, fewer meetings...”. Working with Robert Pratt (Travel & Transport Services) of Norfolk County Council, was genuinely a joy. His local knowledge was immense; the benefit of his, and his boss Jeremy Wiggin’s drive and enthusiasm to at last be able to do things properly, was beyond measure. Without them this project would have cost a lot more to produce. After that original meeting when we demonstrated our proposed product range, and how to implement it, not one more took place. Just close communication by telephone and e-mail, in both directions was all that was needed – proof that ‘partnerships’ really can work.

Norfolk County Council received its BBA funding, as is explained in Part 1 of this Case Study, and Norwich, which is just the start, has benefited in so many ways:

- Signage and flags are consistent throughout the city centre, with a visual language that is easy to learn;
- disadvantaged groups have been drawn into the design process and helped in any way possible;
- operators have had their profile raised commercially by use of clear route diagrams showing which company provides each route – at every bus stop and information point;
- numerical identities have been eliminated from boarding points and so removing any confusion with bus route identities;
- the problem ‘I know where I am trying to get to but don’t know which bus goes there, or where to board it’ has been answered at every bus stop and stand by an alphabetically organized Destination Finder; this is tailored to show the nearest boarding point by use of a zonal system that users need not be particularly aware of as we have done the first stage of pre-sorting their search for them;
- the problem ‘I know which bus I need but don’t know where to board it’ has been addressed by providing a numerically pre-sorted Route Finder, with each route clearly depicted, overview of days of operation shown, and by which company it is run;
- passengers alighting have a detailed street map, with street index and grid, to help them find their way throughout the city centre and immediate environs;
- express coach users can consult a Norwich focused network diagram and even be aware of what is at the other end of the city centre at the Railway Station;
- railway users can now more easily know which journeys do or don’t require a change of train – and they can also plan their departure as far away as the Bus Station, where comprehensive timetables have been provided by the railway operator;
- passengers leaving their train at the Railway Station are now provided with immediate facts as to how to get to the high-profile destinations in Norwich;
- and finally, FWT has a very happy client.

BETTER BUS AREA

Norfolk County Council had long since wanted to significantly, and effectively, raise the profile of bus usage, but had not had the funds, or resources, to do deliver on this aspiration. Then, in December 2011 through its **Better Bus Area** (BBA) initiative, the Government offered local authorities the opportunity to bid for a maximum of £5 million for such initiatives.

If the Council could secure the Better Bus Area money and work with the right people, they knew they could make a serious contribution to improving passenger experience and encourage greater take-up. What to do first though was to produce a structured proposal to Government.

Norfolk met the criterion for the bid in having a population of at least one conurbation exceeding 100,000 people, as it had Norwich in its midst.

They had done much preparatory work before their bid was placed and were looking to deliver a broad cross-section of initiatives. The role FWT would fulfil was for two of these packages of work.

Norfolk was successful in securing all the BBA funding sought and set about appointing a team to deliver the different work packages. Swedish company Hogia (www.hogia.se) had been working with Norfolk County Council since 2008 and quite separately with FWT. FWT and Hogia enjoy an excellent and symbiotic working relationship and this was one of the reasons that both became an integral part of the team the County Council assembled to deliver BBA in Norwich.

THE FOUR DS – DISCOVER, DEFINE, DESIGN, DELIVER

We don't apologise for repeating sentiments expressed in other Case Studies, but no two cities/towns are the same and, though the desired wayfinding solutions and user outcomes are intended to be the same, the structure and implementation of the solutions seldom are. We have said it before, but 'one size fits all' doesn't work. Trotting out a network remedy that worked in one location (who says it did?), without understanding the geography and local transport network of a different one intended to be equipped, can result in a very cost-ineffective solution. The sort of thinking of 'let's copy the London model' will often only succeed in a lot of time and money being spent. Context is everything. What do London and Norwich have in common? That should be the starting point – the question, not the solution.

We also don't apologise for repeating here our principles and methods from earlier Case Studies – they apply to any and all jobs of this nature. In this respect, one size does fit all. We always apply the four Ds.

A preliminary site visit to Norwich revealed some interesting curiosities with the nature of the geography and bus route patterns. Many towns/cities, for historical reasons, have a busy central core with surrounding suburban sprawl and radial feeder corridors. Norwich fits this model, with its suburbs and corridors, but it is unusual in not having a reasonably circular hub, from a bus usage point of view. It does however have one thing in common with many other UK cities – the bus station and the railway station are an inconvenient distance apart. You would need to know your way around to get from one to the other without some form of help.

The Council's extensive preparatory work helped scope the meeting. The structure was in place – it was the detail that we were required to help fill in. It soon became clear that there was a lot of like-mindedness around the table. The Council and FWT

both had big parts to play and both would need to contribute significantly if the project was to have a successful and cost-effective outcome.

Norfolk both wanted to, and had to, offer a major upgrade in Norwich to comply with the BBA rules. Other packages of passenger information, in all its manifestations, included programmes at Norfolk & Norwich Hospital, The University of East Anglia, Norwich Airport, and some of the radial corridors. Though the railway station itself could not be included (it's not bus) the areas immediately outside the barriers and exit, being the start of bus territory, of course could – and was.

WITH FUNDING SECURED

We met with the Council at the earliest opportunity to agree outline programmes. Though the Hospital, University and Airport were important, we all knew that Norwich city centre had to come first. This would have the greatest degree of difficulty to be solved, in terms of route network complexity and highest quantity of departures per bus stop. It would have to set the standard.

Having said that 'one size fits all' doesn't work, and therefore Norwich would require different solutions, we still wanted the resulting designs throughout all projects to have the same 'look and feel'.

We had done the preliminary 'D' for Discover at an early stage; now we had to repeat it more fully to get the details. A full day was therefore spent visiting every bus stop; all were photographed and existing display infrastructure recorded. On later dates we visited the Hospital, University and Airport to ensure that what ever we came up with for Norwich could be made to work similarly elsewhere in each of their contexts.

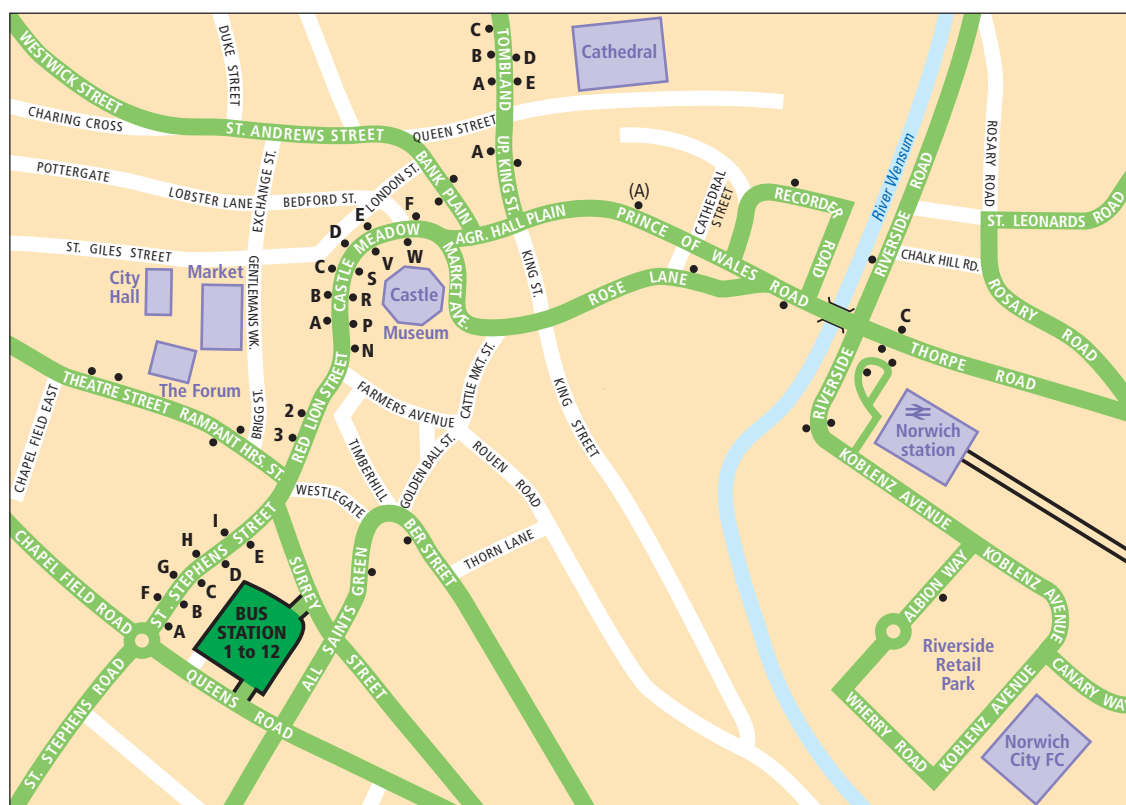
THE FIRST 'D' – DISCOVER

It is essential that photographs are taken in a fiercely logical sequence and the captured results dealt with soon afterwards while still fresh in the memory. Returning to survey material later, when memories are not crystal clear, usually causes the odd thought of 'I wonder where I took that one, and which way was I facing?'. (Inevitably, these photographs are referred to during the course of the project and this is why a tried and tested method of recording is so important.)

When photographing infrastructure such as bus stops, the temptation to criss-cross the road, saving leg work, is to be avoided. Looking at the images later, in the sequence they were taken, then leads to confusion if a logical pattern is not followed. Much experience over decades has taught us how to go about the task for maximum effect.

Referring back, Norwich is unusual in having a very busy spine, with clusters of bus stops separated by normal two bus stop distances. The photo-recording method we used, for each bus stop, was therefore:

- general contextual view, trying to incorporate a fixed point of reference, such as a street nameboard, or road sign, or prominent shopfront, to establish which direction is being faced;
- a close-up of both sides of the flag (to record routes allegedly serving – though this is often an unreliable source);
- a general view inside the shelter, where relevant, again trying to capture nearby physical reference features;
- a close-up of information poster contents – timetables etc.



This map shows the city centre and its strong central spine. The bus stops are shown with black dots and the letters show the identities displayed on some flags. (The timetable poster at the eastbound stop in Prince of Wales Road had no flag identity but did say 'Bus Stop A' on its timetable poster.) Things that were immediately apparent as undesirable were the use of numbers for some stops and letters for most; we also avoid using 'I' (St. Stephens Street) as it is not clear if this is a letter or a number – and there is a route number 1 that serves this street.

There were no meaningful maps with which to associate the letters other than in the Bus Station. Unfortunately the Bus Station WTB places served index only included destinations available from within the 12 numbered bays. Outside in St. Stephens Street are just as many potential destinations, but not reachable from the Bus Station. This meant that the Bus Station index only really told about half the story.

Having photographed one bus stop in this method sequence, we then move onto the next one. When dealing with clusters, capturing at least one more stop in the background aids piecing it all together later, and greatly reduces the need for lengthy survey times. Only when the whole cluster on one side of the road is done, do we cross and do the other, capturing the cluster on the first side in the background as reference.

When encountering a major bus road junction, a panoramic set of photographs is taken, again to help piece it all together later. Maintaining the principle of always doing each one the same way, the panorama is always done clockwise. Google imagery can be helpful for general context but won't capture the fine detail needed.

We expect some readers will question the need for all this effort when Traveline, local authority and operator databases already have all this information. Well the truth is that these sources exist for different purposes and don't usually provide sufficient, and/or reliable, facts to work from. It is 'an inconvenient truth' (to quote someone else) that good maps and bad maps, and good timetables and bad timetables, and good signs and bad signs, can often look similar. They can only be meaningfully assessed, in context, when actually used. The quality of the attractiveness of the designs is a quite separate issue. Both are important. Anyone who puts design before

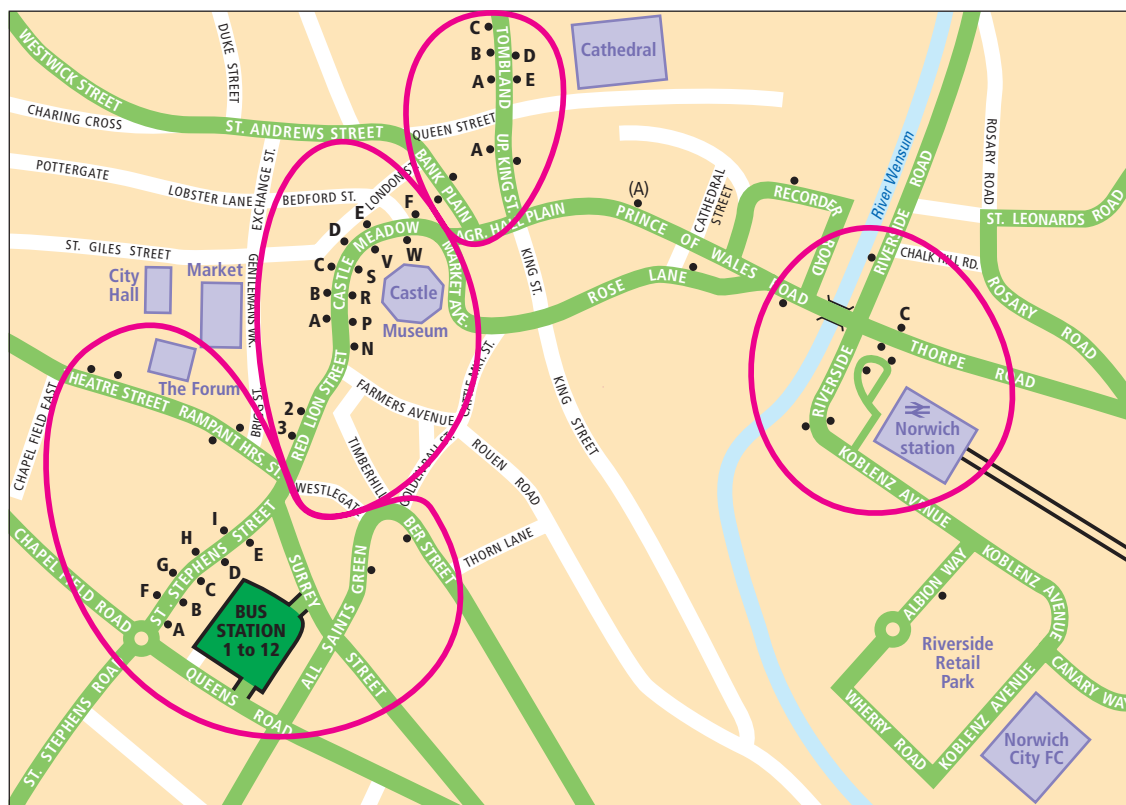
usability will be wasting your money. A full understanding of the product (the bus services) and user psychology, is mandatory.

OBSERVATIONS

Inevitably, along the way, observations drip feed in about shortcomings and possible remedies. Doing this sort of thing the lazy way, using Google alone from within the office, is hopeless. There is no substitute for experiencing a city first hand, after all, isn't that precisely what the users are doing? Context is everything.

Lettered bus stop 'Where to Board Your Bus' (WTB) schemes are commonplace in the UK. Most are modelled on London. Almost none of them work well; some achieve a little success but most fail completely. This is because those who implement them probably copy a model of what they have seen elsewhere, but without seeing them through users' eyes.

Norwich showed remnants of such a scheme on some flags and shelter end plates; actually we soon realised there were several, very localized ones. There was none that encompassed the whole city centre, and the way the existing ones were in place prohibited a full city centre scheme. On-going interference from different parties had also dilapidated what had survived to the point of them becoming 'invisible' to users and unusable



Above is the same map showing what seemed to be a logical way to divide the area into manageable chunks for users. Further examination showed that it wasn't.

anyway. We doubted any habitual or itinerant users even were aware of their existence.

A successful lettered bus stop WTB scheme must have at each bus stop:

- a well designed flag (or shelter end plate) with obvious letter identity;
- a well designed flag (or shelter plate) with obvious site location name
- a well designed WTB map with very obvious lettered stops and site location name clearly relating to the flags;
- a well designed alphabetical index of places served, appended with bus routes serving each entry and further appended with the nearest appropriate bus stop for boarding.

THE DE-REGULATION LEGACY

Details of stop identities – names, lettered stop schemes etc, are examined later in the quiet of the office. This reveals on scrutiny that flags and timetables often mis-match, commonly caused by different groups of people putting the material up and the infrastructure and contents having different, multiple, owners. De-regulation caused all this and the muddle continues unabated. We are not saying it was particularly good before then, but it has certainly not improved. It is the entire customer base that endures the red side of this invisible balance sheet.

THE SECOND 'D' – DEFINE

We found at least four bus stops called 'A' 'B' 'C' etc, each within a small cluster, though no cluster had all stops lettered and there were no maps at most stops; those that did have one,

showed an area too small to be helpful. Many bus destinations are available in Norwich, but as with other places, a short walk may be necessary where the very nearest stops don't offer a bus to those destinations.

There was no index to places served at any stops (except at the railway station). Without this look-up table, 90 per cent of the value of lettered bus stops is lost as user engagement cannot start. Why would they look up at the stop letter? What would it tell them? In addition, the letters were not unique and all were too small on the flags to be noticed among the other visual information. We again refer to our '8-second rule': if users don't feel they are making progress within that time, they usually give up. Potential take up is lost, potential income is lost.

To sum up, the letters that did exist were doing no harm, but also they were serving no useful purpose. It could be argued they were actually doing harm as visual 'noise'. This causes users to: puzzle over it and then dismiss it, or make wrong conclusions from it, or ignore it and then also ignore other information which may be useful. Good design, coupled with good logic and understanding of usability, keeps factual information under control and excludes low value, or no value, imagery.

EXAMINING THE ROUTE PATTERNS

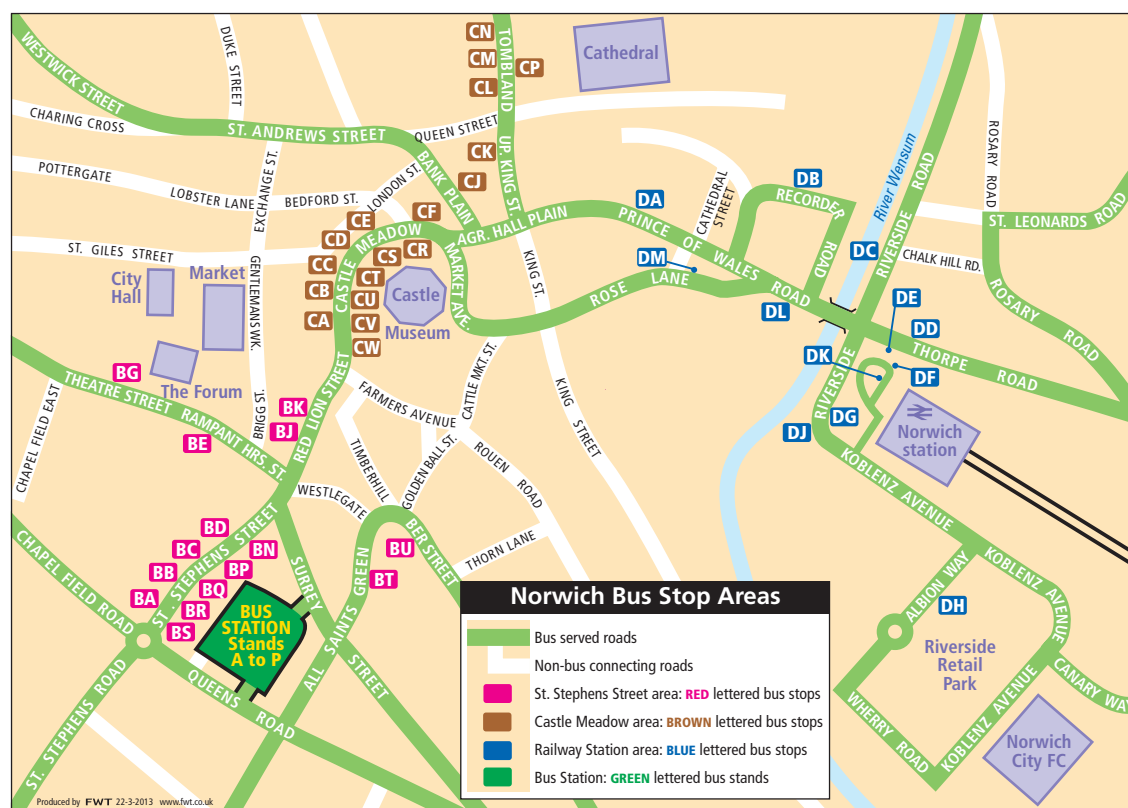
We now had a good grasp of the geography. In the core area, we identified there were over 50 bus stops in the street and a further 12 in the bus station. All needed drawing into an all-embracing WTB scheme and this is far too many to give each a unique single letter identity.

Different people have different mental capacity and different people are better at problem solving than others. These are not

the same thing. Somehow the overall area needed to be broken down into meaningful and functional chunks. The more you overwhelm users with too much information, the higher the risk of rejection. Furthermore, just chopping it up any old how would

reduce usability potential. It has been said that “if one piece of information is useful, it does not follow that ten pieces of information are ten times more useful”.

Our first thought was that Norwich could be divided into



With the route pattern better understood the division into meaningful areas came together. The four areas each received a unique colour and each had a unique letter grouping system. Even if users were insensitive to colour, they could still find the right stop identity from its unique letter pair.

With the invaluable local knowledge of the client, we were able to eliminate one or two stops as not needed. A few routes were allocated to different stops to remove some of the existing confusion caused by more than one operator using the same route number to serve different places (another legacy of de-regulation). We also allocated a few letter pairs to stops intended for the future, so as to incorporate them in the logical lettering sequence. One day there may be a BF BH BL BM CG CH and CQ. Quite deliberately, no stops incorporate I or O.



As noted earlier, in order to equip a city centre (or anywhere) we believe it is mandatory to walk it and experience it as a user does. This cannot be done using internet imagery as the context is missing.

Looking at the map above and knowing that only one bus route serves Recorder Road, and not very often at that, it would not be unreasonable to think this stop could be omitted from the system. However, having been there, and noted that it is in the midst of retirement homes, the bus link to the city becomes more important when it is considered that visitors to the residents may not know the area at all.

We included it as stop DB.

logical geographical areas, with the obvious breakdown of: Bus Station and St. Stephens Street, Castle Meadow, Tombland, Railway Station – four areas. This left a few stops between Tombland and the railway station with no home, so perhaps five were needed.

We encountered a similar situation in Leicester, which neatly divided into logical geographical groups (see also our Case Study for Leicester). We gave each group a distinct colour and within those a double-letter unique identity. Each letter group followed a logical sequence round the map as AA AB AC, BA BB BC, CA CB etc. Each colour group could have started 'AA' but then the double letters would not be unique. Making them unique has two advantages: ambiguity is eliminated in the look-

up index of places served; colour blind readers can still find their stop as the system is colour beneficial but not colour dependent.

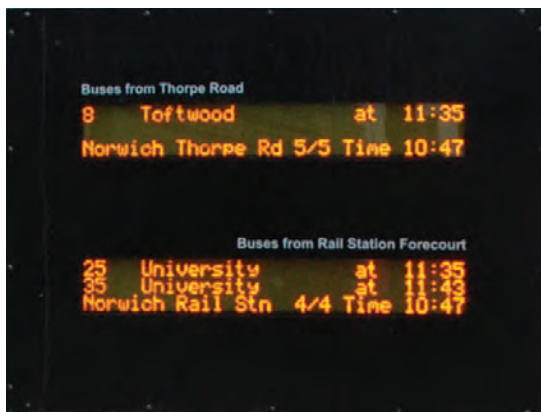
With that solution in mind, we set about trying to apply it to Norwich, but it became clear quite quickly that our first thoughts of the area breakdown was functionally not right.

One problem with a WTB scheme encompassing such a large area is that many destinations can offer several boarding points. That said, passengers usually want to know the nearest one, not how many. This is an example of providing too much information actually being a disadvantage.

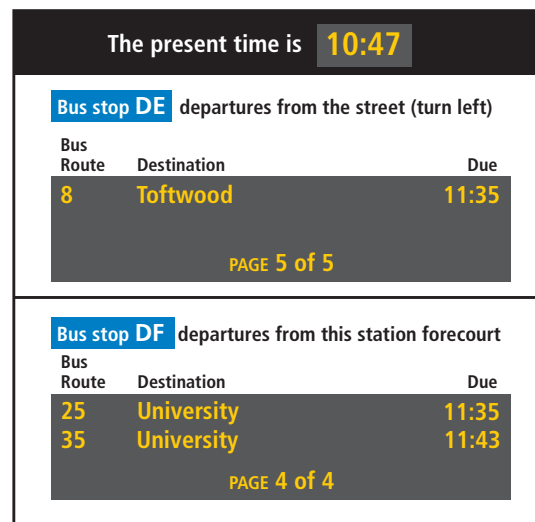
On examination of the bus route patterns, we realised that, broadly speaking, between them, all routes served the Bus Station and St. Stephens Street, about 80 per cent served Castle

REAL TIME OR STATIC? We often get asked about information types, real-time versus static – which is better? We covered this in detail in the Storeyboards. The answer is: neither one is better than the other – they each play different roles, both are important and both are part of the information chain. However, real-time also needs to be designed properly, for maximum benefit.

It should be designed for usability and not design-driven by the electronics. FWT cannot design electronic systems but we can design how they should perform.



The display at the main bus stop at the Railway Station provides times for its own stop and also outside in Thorpe Road. Both stops are for westbound buses, but served by different routes. The display has all the information required but is displaying it in many confusing ways (not easy to demonstrate as a static illustration here). Being at a bus stop, it is easy to suppose that the information is only for that stop; it was not particularly obvious that departures from two stops were being forecast. The nature of the rolling display is also easy to mis-read with the bottom line providing three discretely individual facts looking as though they were one sentence. At first glance (and most mistakes are made when in a hurry) it looks odd that the time '10:47' was the time of a forecast bus – how could this be later than the (what looks like) second bus at 11:43? Is it obvious that the reader is looking at page 4 of 4 and that 'Norwich Rail Stn' is not a potential destination?



In our proposed user-interface re-design, the identity of the two stops is clear now; the present time is moved visibly to its own space and not now to be confused with departure times; the white background allows the eye to focus on the departures, using a more vibrant yellow on black; each column of information has a heading, making clear what each item is; the '4/4' is replaced by a statement in words, removing possible misunderstanding as to what it is. There are other subtle improvements too and we recommended not using dot matrix technology, which has all sorts of visual limitations. Modern high definition screens can display proper typefaces, though there are very few that can do this sort of job well. Again, careful consideration must be given to usability.



The Storeyboard needed to illustrate all basic principles of what we believed necessary and also show which products would go where.

This is the westbound bus stop outside the Railway Station in Thorpe Road – it needed unique treatment in that there was no space for a shelter or a flag.



Meadow and Tombland, about 60 per cent served the Railway Station and intermediate area to Tombland. Furthermore, almost all buses at the Bus Station didn't serve St. Stephens Street and vice versa. We therefore tried the colour breakdown of four groups: Bus Station, St. Stephens Street, Castle Meadow and Tombland, Railway Station with intermediate. This seemed to work much better. It was now a case of defining the boundaries.

Everyone in our in-house Editorial department has long experienced histories in bus and rail operation. They understand crew and vehicle rostering – and how to schedule a timetable that might be able to save a vehicle. With this sort of subject knowledge, they can understand registrations quickly and get to the heart of a network.

Defining the zone boundaries was actually quite easy. Sufficiently confident we now knew the way forward, it was time to devise some samples and see if our client was happy with the approach.

THE THIRD 'D' – DESIGN

Having consulted the client, it was quickly agreed that the best way to communicate our proposals was to create a series of storyboards. This was done and demonstrated several user scenarios and how each product provided the answers they needed – which bus do I need, where can I board it, when will it run? The storyboards encompassed the whole journey need.

No passenger journey starts or ends at a bus stop, they are merely the entry and exit points to the transport facility. The full range of static posters was illustrated and included how each interacted with people – and electronic systems.

Very soon after we presented the storyboards, we spent a few hours at the railway station exit and walked around the city centre with the client to clarify which products would go where. We answered questions about how big signs would need to be, what they should be made of, how they should be fixed and how they could be maintained.

Bus stop flags are a constant problem in how to keep them up-to-date and, very importantly, how outside interference

The structural and functional design short-comings of poster cases everywhere is too big a subject to cover here. This is just one example of two common faults: internally there is a gap (about 25mm in this one) between backboard and front glass. There is nothing to force the poster hard against the glass. There is also no viable means of securing the poster in place at the top. Many users try to overcome this by using sticky tape, which is amateurish, should be unnecessary if the case was designed properly, and just leads to increased mess inside and compounding nuisance, difficulty and time wasting.

Most importantly, the user will find reading the poster more difficult.



should be kept at bay. The client agreed that the best way forward was to speak to the operators and get agreement that the Council would in future provide and maintain all flags.

POSTER CASES (AN ASIDE)

But flag ownership (maintenance) fails to get anywhere near the problems that infest every project – the wretched situation in the UK with the provision of poster cases. Every project such as this is severely hampered by existing cases often being too small (actually they were OK in Norwich), and/or of a mixture of sizes for all manner of historical procurement and supplier reasons, and /or poorly constructed, and commonly not in the control of the authority.

Most existing shelters in Norwich had one Double Royal case, provided by the shelter supplier under contract. We needed two in each. This set our client off on a lengthy and tedious process of getting agreement for a second one and who would pay for it, as the contract only provided for one. The client agreed to pay for the additional cases, but who would be responsible for their physical maintenance?

Quite naturally, all shelter suppliers provide them on the basis of creating prime advertising sites for themselves. They do indeed provide poster cases and those in Norwich were actually as good as is available – not great, but as good as is available.

If only a company would design better ones. We would like to see them properly force the contents onto the inside of the front glass (polycarbonate) and make it much easier to put the contents inside, without fighting the wind and gravity. We would also like to see a secure locking mechanism that is easy to use

(some achieve this but not many). We would like to see a method of holding the posters in place that is effortless and didn't rely on Blue Peter style clips or wholly inadequate plastic bits and pieces nowhere near up to the job and unintended sticky tape.

The problem is that manufacturers probably never use these cases and nor do procurement departments that wash their hands of them once the order has been placed. The legacy of the grief of day-to-day usage is transferred to the people who have to change the contents on a frequent basis.

We would welcome the opportunity to work with a poster case manufacturer to create something that is cost-effective to make and convenient to use. Such a manufacturer could clean up if only someone, other than users and FWT, were sensitive to all this and knew how much time is squandered and frustration incurred, each time the contents of each one has to be refreshed. The real downside however is that, commonly, the contents cannot be read properly, thus defeating the whole point of them being there.


WITH AGREEMENT IN PLACE

With the storeboards agreed we designed prototypes for each product, based on real data. We were invited to demonstrate the full range to all the bus operators – 13 of them. Questions were invited and answered. Some required debate but all were addressed to the operators' satisfaction.

This was followed up by a visit to 'Opening Doors', a wonderful group facility for people with a variety of learning difficulties. With the client, we participated in a demonstration and explanation to the group and again invited and answered questions. It was requested that all the new posters be put up at selected bus stops a few weeks before full implementation so they could go round and try it for themselves. This was a sensible request but unfortunately an impractical one.

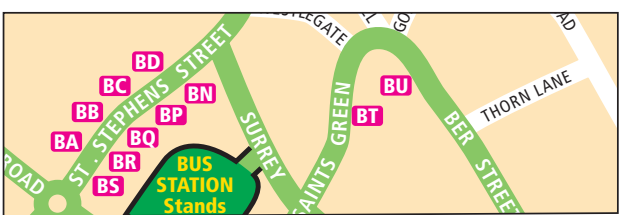
In this extract from the 'Learning Guide', a passenger is taken through finding the right bus stop. The various components for wayfinding and boarding are illustrated as a real user would see them.

I now know I need to get the number 9 bus from bus stop 'BR'. How do I find my way there?

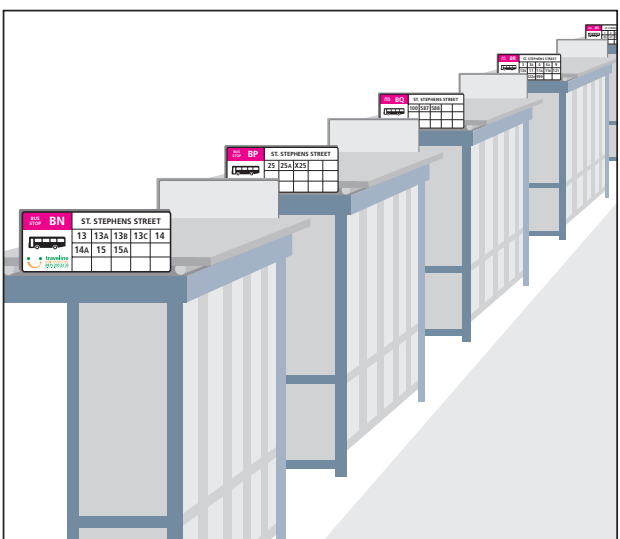


Mr Grey

Journey plan so far
Destination – Hethersett.
Bus route number 9.
Bus stop 'BR'.



Section of Where to Board Your Bus, map.



Lettered bus stops in St. Stephens Street.

You can follow the street names and also look out for other bus stops in the pink area on the way. Around the corner in St. Stephens Street is a row of stops 'BD' 'BC' 'BB' and 'BA'. On the opposite side are stops 'BN' 'BP' 'BQ' 'BR' and 'BS'.

IMPORTANT COMMENT
You don't need to remember all the information. You can always double check by looking at the posters located at any of the other stops along the way. Every bus stop has the same Destination Finder poster.

Displaying all this material in the street, when most of it would not yet be in place, would cause widespread confusion to everyone else.

LEARNING GUIDE

The answer was to produce a learning guide. This was created to demonstrate the two most common user questions: which bus do I catch and where do I catch it? Full size real posters were also made available to the group in advance of implementation to try out in controlled circumstances – in conjunction with the Guide.

This Guide went down so well with the client that we both came to the same conclusion in seconds; it could be made available on Norfolk's website for anyone to download and print at home.

THE FOURTH 'D' – DELIVER

With agreements in place, we could start the rollout. But there was another important facet to agree first – what would be the most suitable implementation date? We were anxious not to get all the material produced for it to go out-of-date before anyone saw it.

The date chosen took into account known service changes and so gave us six weeks to produce about 140 posters, about 50 of which were unique, and about 100 signs, all of which were unique of course.

Working from first principles and unashamedly based on very similar products in many other cities we had equipped, we knew by now how each would need to be adapted to suit Norwich. As stated earlier, a product that works in one city will not necessarily work in others – but it can be made to work with the right know-how. However, the right know-how requires understanding of passenger needs and also a bit of user psychology. So we designed:

- Prominent shelter roof plates and bus stop flags;
- Destination Finders (Where to Board) – for those who know where they are trying to get to but do not know which buses go there or where to board that bus;
- Route Finders – for those who know which bus they need but not where the nearest boarding point is;
- Vicinity Map with street index – for those who have alighted from the bus and need help on their way to their actual destination;
- Stop-Specific timetables – for everyone who wanted to know when their bus was running.



A shelter roof end-board (flag) at stop D in Tombland. This would later be combined with stop E and be re-named CP under the new system.

When we presented to all the operators, there was almost complete harmony to proceed. One challenge however came from First Group who were keen that we incorporate their route colour identities on the flags. We were equally keen not to. Two golden rules in graphic (and written) communication are: don't use one symbol to have two different meanings' don't depict two different things with one symbol. This translates into: eliminate ambiguity.

The new wayfinding (Where to Board Your Bus) system was not colour dependent, as explained above, but it did need it for the vast majority of users to massively benefit from it. The new shelter roof plates (flags) needed to have the colour letter identity very prominently displayed. These would act as directional signs, not only as people walked to find their desired stop, but also to act as a sort of 'you are here' sign when arriving. We didn't want to give a confused colour message by colour also meaning 'bus route' – in this case, only some bus routes, those of First.

We later had a separate presentation meeting with senior officers at First and, once we explained our reasoning, had a very good discussion as to how to accommodate their request. As can be seen from the above photograph, the colour identity of route 16 ('The Pink Line') is actually not very easy to read. Our proposed re-design for these plates was accepted as sensible, without being in any way detrimental to what First were attempting to do.





To the left is the existing flag, on top of the shelter, at the un-lettered westbound stop in Prince of Wales Road. This provides an example of how service changes can cause the numerical sequence to go wrong. Furthermore, none of the numbers is easy to read and the location name has all but disappeared.

The ad hoc nature of flag maintenance, uncontrolled and with more than one party doing its own thing, also ends up providing not quite the whole story – there are seven route numbers displayed. The new shelter plate, at what became DL (below), with all numbers in sequence, shows that a much better service is actually on offer.

Under the new system, a useful shelter upgrade programme was organized by Norfolk County Council and an additional poster case fitted within each.

All flags and shelter end-boards were replaced by roof-mounted plates. In agreement with the client, all but essential information was eliminated from these. We wanted these 'flags' to be clear as to what they were stating and the contents confined to: site identity, location name, legal mandatory bus icon and 'Bus Stop', bus routes serving. First Group's coloured route number names were incorporated, essentially though, not in colour. All stops in the city centre, and all Stands in the Bus Station, now have identical looking shelter roof plates. The visual language can be learnt very quickly because of a consistent approach throughout.

| | | | | | | |
|---|---------------------------------|--------------------------------|---------------------------------|----------------------------------|---------------------------------|----------------------------------|
| BUS STOP DL  | PRINCE OF WALES ROAD | | | | | |
| | 1 | 2 | 14 <small>GREEN LINE</small> | 14A <small>GREEN LINE</small> | 15 <small>GREEN LINE</small> | 15A <small>GREEN LINE</small> |
| | 23 <small>RED LINE</small> | 23A <small>RED LINE</small> | 23B <small>RED LINE</small> | 24 <small>RED LINE</small> | 24A <small>RED LINE</small> | 25 <small>BLUE LINE</small> |
| | 25A <small>BLUE LINE</small> | 32 | 36 | 121 | 122A | 123 |
| | 124 | A47 | X47 | | | |

| | | | | | | |
|---|----------------------------|----|---|---|----|-----|
| BUS STAND A  | NORWICH BUS STATION | | | | | |
| | 4 | 4A | 8 | 9 | 40 | A47 |
| | X47 | | | | | |

And when we see these descriptions mimicked by our competitors, we know where they got the ideas from – but knowledge without understanding does not also mimic success.

WHAT ELSE WAS NEEDED?

The above are core products, but these can be made more beneficial when allied to other helpful ones. So we added:

- Railway Network diagram – to show where users could go by train from Norwich, directly, or with one change;
- Coach Network diagram – to show where users could go by direct express coach;

The client's local knowledge came to the fore with the sort of requests they constantly received from users at the Railway Station. So we also designed:

- a poster for the Railway Station information point giving concise instructions on how to get to the Airport, Hospital, University, the Research Park;
- a poster for the Railway Station information point giving concise instructions on how to get to the city centre and Bus Station;
- a poster for the three Bus Station information points giving concise instructions on how to get to the Railway Station.



Almost ready for despatch. About 140 posters are waiting to be pre-sorted for each bus stop and information point.

SIGNAGE

Maps, timetables and directional instructions are all well and good, but cannot function without complimentary and co-ordinated signage. We raised this very early on in our discussions with the Council and, again, there was complete harmony.

The existing bus stops mostly had shelters of a reasonable quality. As with poster cases, the thing that let the wayfinding aspect of the shelters down was the signage affixed to them.

Most shelters had some form of end board with expanded information acting as a bus stop flag. As is very common, these were a mish-mash of styles, having been added piecemeal by different people over the years. There was very little commonality in appearance and contents and this adds to the cognitive load on the user. Passengers are further burdened with trying to wade through the information displayed.

Lack of consistency in presentation and content makes life harder than necessary and can get to a point where the information is ignored, either because it is messy, illogical, or because it is poorly maintained, with route numbers getting out of sequence through ad hoc updates.

In the examples below of poor flags and signage, we don't wish to single out Norwich, it is like this all over the UK and **Better Bus Area** is a useful tool designed to improve matters and increase patronage.

THE ROLLOUT

The implementation could have been embarked upon much sooner was it not for the common obstacle referred to earlier in the form of street infrastructure. The client pushed as hard as possible to get the additional poster cases erected, but the usual proclivity for multiple fingers to be inserted and fiddle in the same pie, as always, slowed things down.

Between Norfolk and FWT, in January 2013 we concluded that targeting Sunday 14th April was viable. All poster cases should be in place by then and we had a fall-back if some were not.

There was sufficient time for FWT to produce the artwork and the appointed contractor to make all the Bus Station and Railway Station signs, and all shelter roof plates. This weekend was also chosen as a known service revision date.

A USEFUL OPPORTUNITY

With the second poster cases in place a few weeks before they would be needed, we suggested making use of them. Public transport seldom has a good news story, but Better Bus Fund was going to provide the residents of, and visitors to, Norwich with one.

With the existing poster case still being used for the existing style timetables, the new additional one was used for the 'Awareness' poster we produced. These were placed at most shelters two weeks in advance, to tell everyone that something much better was coming.

IMPLEMENTATION

We also created 16 different generic posters and some 55 unique stop-specific ones. This could be achieved through our automated timetable creation software and the project could not have been achieved in the time available without it. This resulted in about 140 individual posters being printed and supplied to County Hall the previous Wednesday, all pre-sorted and labelled as to where each was to be posted.

With admirable alacrity and boundless enthusiasm, Robert Pratt from the Council, by now a very good friend as well as client, organized everything at his end. He had overseen the delivery and erection of all the signage and shelter plates. Several weeks previously we had discussed the logistics of erecting, and covering over, all new signage. Had they been on view before the implementation date, they would have been very clearly advertising some routes that were not operating at that time.

On the Sunday, all the covers were removed. The posters were in place in the new cases and the protective opaque film removed, revealing them quickly.

Monday 15th was the day that most people would be exposed to their new and high profile information system and, as offered in advance, we went to Norwich to walk round and check everything was in order, and to note any minor adjustments, inevitable in a project of this magnitude, that might be needed.

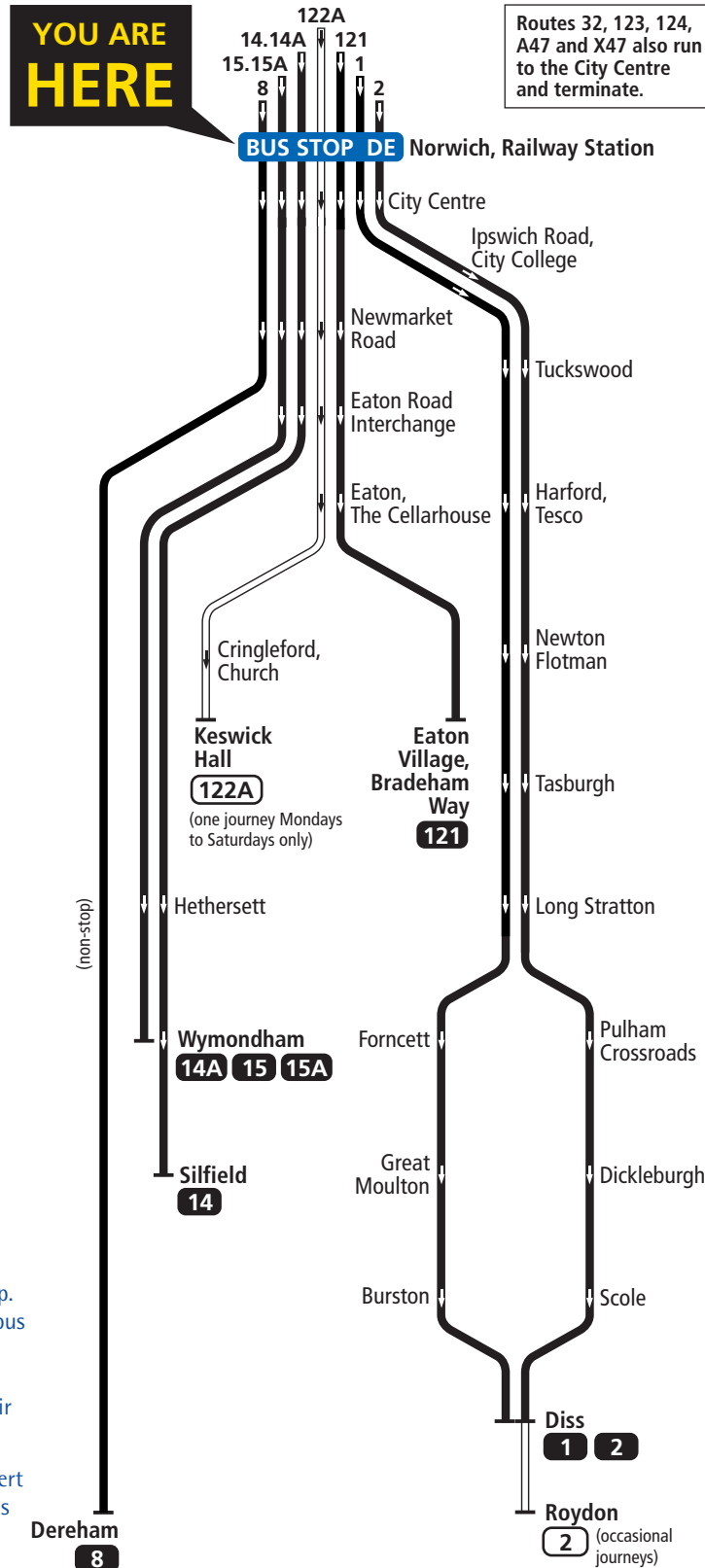
It was very gratifying during our walk of the whole area, that very little needed adjusting. A couple of shelter plates were not ideally mounted, but nothing of any detriment to users.

Robert was delighted how the visual impact of the signage has improved the functionality of the Bus Station and, the three information points seemed to be being well used. The following pages include a few photographs to illustrate various principles to which we work.

One of the linear diagrams showing routes from that bus stop. Passengers are re-assured that they are at the right lettered bus stop, by a clear You Are Here pointer, which is further appended to the location name. The latter is repeated on the shelter roof plate (flag). Operators also benefit by having their identity attached closely to the route numbers they run.

The route lines are deliberately not in colour, so as not to divert attention from the strong coloured boarding area coding. This also allows the operators' logos to stand out better.

| | | | | | |
|-----|------|-------------|--------------------|-------------|--------------|
| 1 | 2 | operated by | Simonds | | |
| 8 | | operated by | konectbus | | |
| 14 | 14A | 15 | 15A | operated by | First |
| 121 | 122A | operated by | Anglian Bus | | |



PART 2 – THE PHOTOGRAPHIC TOUR



Taken before the project rollout, this is the main shelter in the Railway Station forecourt. The real-time display can be seen, as shown in close-up on page 6. In the background to the right are a couple of poster cases giving local Where to Board information, but this only encompassed the immediate area and not the whole city centre.

April 2013, the day after full implementation and the new information point can be seen on the back wall. Signs on the shelter direct people to it, or to the bus stop inside. The information point will be getting a shelter roof affixed to the wall in due course. There is also an intention to re-locate the cycle racks and open the area out.



The information point has two banks of four posters and this is the right-hand set. The two shown here to the right address the request for bespoke high profile information to get people to four very popular destinations and, separately, to the Bus Station. A 'vicinity' map, with street index, is posted alongside for those who prefer to walk to the city centre and the left-hand one is the WTB which helps them get to anywhere in the whole of Norwich by bus.



The Clear Channel shelters prevalent in the city centre address the oft bemoaned 'too much street clutter' through their predominantly glass construction. The downside of this is they can be quite hard to spot from even the mid distance. This is not helped by the flag being on the lamp-post, several metres away to the left.

Seen from the other direction and before the BBA upgrade, this shows the roof construction and (unused) flag provided by the shelter supplier.



Post implementation and shelters are now fitted with prominent roof plates at both ends (see page 10) easily visible against the visual noise of a busy street, but contrariwise, not intrusively so.

The flag on the lamp-post has by now been taken away too.



The colour coding of another of the four areas (see page 5) can be seen here in Castle Meadow, with stops CA and CB in view. Crucially, the words 'Bus Stop' are in the same colour space as the letter identities, making it clear that CA is a bus stop. In so many cities and towns, these letters are affixed with there being no clue as to what they mean or are for. They are therefore mostly ignored.



Here in St. Stephens Street another basic principle is demonstrated – the close bond of the 36 bus route identity on the bus being displayed the same on the shelter roof plate (flag).

Another fundamental principle of flags: they should provide a standard visual method of display. Only five stops in Norwich could not have the large shelter roof plates and these received pole-mounted flags. The design principle is exactly the same as for the shelter plates with the layout being as similar as possible, even though the format is necessarily quite different.

This stop, in Rampant Horse Street, is awaiting a new Clear Channel shelter. Annoyingly, this one had to be equipped with a temporary flag, which will be replaced by a proper roof plate when the new shelter arrives.





Better Bus Area in action, demonstrating graphically what can be achieved in making a notable improvement to the whole user travel experience.

Left: one of the primary drives of BBA was to elevate passenger information. Seen here is a Double Royal poster case (40x25 inches – or 1016x635mm) in an all too familiar state of neglect in the UK. The contents do not fit the case at all and no attempt has been made to do anything about it. When working with FWT you will hear us labour the importance of poster case sizes being established correctly, so the contents can be designed to fit and not collapse as this one has. The unnecessarily small text of a pocket timetable should not be at a bus stop either.

Below: the right-hand case has its stop-specific timetable, complete with linear diagram of routes from this bus stop and at the top who operates them – also note the unambiguous message in the poster header leaving no doubt as to where the user is, crucial in relating to the Where to Board map, index and flag.

Robert Pratt from the Council is seen with his admirable enthusiasm to get things right. His contribution to the project is not underestimated by FWT. The left-hand case now has its new Where to Board poster, one of the three variants (in this picture, for the brown stops) designed to advise passengers of their nearest bus stop.



It is often not straightforward but there is always a way.

The standard shelter roof plate was optimized to cope with eighteen routes (see page 10 for Bus Station A and photographs of other street stops in this Case Study). There were a couple of rogues which burst this and it would not have been right to compromise all the others for these.

Right: the two stops in Prince of Wales Road needed a slightly modified design, though the overall size of the plate was retained. Importantly, these two still had the same logic and look and feel as all the others. Bus Stop DA, seen here, has a capacity for 24 routes.

Below: the standard timetable design, with optimized typesizes and spacing coped with over 500 departures. The design was arrived at after assessing all stops. Again, a few needed to be non-standard and the two in Prince of Wales Road needed over 800. At this point other things come into play. With that sort of quantity of departures it would be easy to overwhelm users by providing too much information. With many of the routes providing a high frequency service we opted for a line diagram for each, with an overview of first and last bus times and daytime frequencies. This was an approach quickly agreed between the Council and FWT.



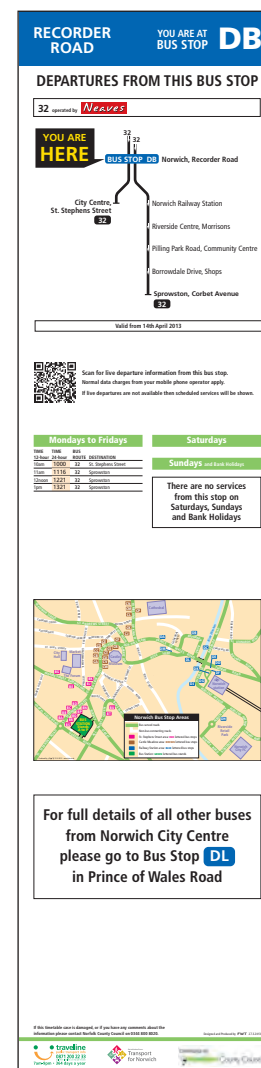
And here are two more examples of exceptions needing to be catered for in order to provide maximum user benefit.



Stop CJ in Bank Plain is an inbound stop to the city centre and most routes terminate at the next bus stop, round the corner in Castle Meadow. From there they head straight on, on their outbound journeys (except one of them). To provide a standard timetable with over 200 departures listed would not be helpful and in most cases misleading.

This is an example of where relying on automated output systems is to be avoided. All the stop-specific timetables we generated in Norwich were done using our automated output and layout software, but we pride ourselves in having editorial control that not only checks the output for quality and correctness, but also allows some common sense to be injected. Again, we raised this issue with the Council and agreement was reached in one short e-mail exchange.

The stop is mostly used as an alighting point, so we devised a poster providing a simple and helpful set of messages. The standard WTB 'Destination Finder' is also in place in the adjacent poster case. Alighting passengers are still offered onward travel guidance.



In Recorder Road (see page 5) it was obvious that this one did need a standard timetable, but as there were so few departures, and the stop served buses heading in opposite directions from the same place, we again intervened. As the location only permitted one pole-mounted display case, we had to omit the places served index, but still provided the Where to Board map for reassurance. A message was therefore added as to where further information was available nearby.

We started this photographic tour of the comparison of before and after at the Railway Station. Here we are at the other end of Norwich's spine at the Bus Station.

In these photographs the entrance from Queen Street is shown, before and after. The upper one was taken before the project was delivered; the lower one is the day after implementation. We recommended moving the large vertical 'Norwich Bus Station' sign on the wall to the left and tidying up the somewhat sporadic distribution of other items to make a clear space for an entrance and exit information point.



A central information point was also installed near the cafe and enquiries building, as well as this, arguably most important one at Surrey Street, where there is the greatest footfall.



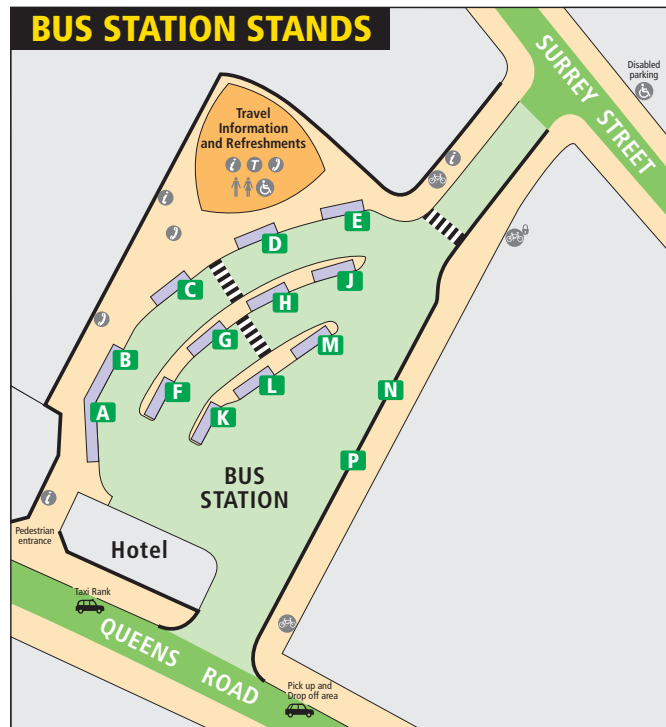
And back at Queen Street, it all seems to be working too.



The locations of the three information points can be seen in the plan, indicated by the standard 'i' symbol.

Almost all foot traffic is via the walkway passing Stands A to E and this meant that all the others would need to be easily seen, from that distance as well.

We placed all the roof shelter plates (flags) to be obvious when close-up on approach to each Stand. In addition, we had large Stand identity boards on every Stand. Some had them on the ends, some in the centre of the long edge, some had both, as relevant from where they needed to be visible.



From the pedestrian crossing between Stands C and D, 'Bus Stand H' is clearly visible. Note also the second nameboard on its long edge. The principle is repeated in the background, where 'Bus Stand M' is also in sight.



At 'Bus Stand M' confidence is retained, where the signs leave no doubt as to where the passenger is and which routes depart from there.



As arrived at from the main walkway 'Bus Stand E' demonstrates the strong visual link between signage and information within. 'Bus Stand J' is clearly visible in the background, at the adjacent row of Stands.





Stand C is unique in only being served by express coaches, so we substituted the standard linear diagram with a more relevant and bespoke National Express network diagram.



In a different respect, Stand K is unique as well. It is only approached end on, so we placed the shelter roof plate on the short edge of this one.



25

DF

Operated by **First**

DAILY

NORWICH RAILWAY STATION

- ↓ City Centre
- ↓ Unthank Road, Colman Hospital
- ↓ Eaton Park, South Park Avenue
- ↓ University of East Anglia, University Drive
- ↓ **University of East Anglia, Chancellors Drive**



8

DE

Operated by **konectbus**

DAILY

NORWICH RAILWAY STATION

- ↓ City Centre
- ↓ Newmarket Road
- ↓ **Dereham**

