Task 1 – Review of the UEA Website Human-Computer Interface

Appearance:

The web pages have a visually pleasing layout and clearly shows directions for what the user desires to look for. We have noted that there is a good consistency between the different pages, with the top bar (containing logo, social media links, search bars, vacancies and contact us links) and menu bar showing on all major pages we visited. The colour scheme is good, it is high contrast and has no issues with differentiation when it comes to colour blindness. There are ideas we will carry over to our design. The Logo should also be used at least once on each page or visible on the hardware unit itself. Fuchsia / pink should be used for any highlights, as on the website. If we follow the design from the website, we should also retain the sharp, rectangular div structure and avoid rounded edges where possible.

We identified that on a wider screen the site doesn't make very much use of the extra space, only extending the colour of the menu bar and the footer across the screen but not adding any useful information. This is so that the site can work over several different screen sizes and since our system will be a set screen size, we can use the entire screen without having to worry about catering it to more than one hardware setup.

The menu bar of the UEA site appears simple in its look from the outset but we agree that it is rather complex when we click on the menu itself. This works for a website when the items are group but could be harder to read or hit the correct link on a console. We will probably look to use icons with short descriptions and not have too many links on any one page to keep it simple.

The campus map is not easily accessible from the UEA website and it follows a different colour scheme than the rest of the site; we think that is something we should change in our implementation to maintain consistency with the rest of the system.

The results page for looking up staff information is displayed in rather a plain manner which is okay for the portal, but we will want to make it look a little slicker in our system as it is public facing. It would also be nice if we can link from the staff details page to the map page so that the user can be given a route from the kiosk to the person's office.

Functionality:

We like that the course search is immediately available at the top of the page and responds to what is searched without being a link to another page. We have identified that if there is a spelling mistake in a search, the system will show results similar to what it has on its database which corrects the mistake, but in the event that the system cannot correct the mistake or has nothing to do with said word it will show no results. This is a good sign of response as it makes the system easier to understand and thus inexperienced computer uses will also understand.

We have noted that on most pages for the website, there is a 'breadcrumb trail' series of links at the top of the page showing the user how far into the site the user is and allowing them to move back easily if necessary. We would like to implement this on pages that are more than one page deep from the homepage or make as few pages as possible go deeper than this.

For the UEA map, we liked the 'show me where I am' button that works when the page is viewed on a smartphone and would like to try and implement this feature into our system in some way. In addition, having the drop-down list on the left pop up when the user selects a category on the bottom is a useful feature.

We feel that the system should adapt to people rather than depend on the user being computer literate. With regards to the Site Search functionality, the system produces options with any word that is entered in the search bar. This can become complicated and too much information, especially when not relevant, can put off users. One improvement on this part is that the search should lead to a page necessary of the topic rather than showing everything on a different select of pages.

Regarding the UEA map, we don't feel the user should be able to highlight more than one category at once as it makes both the map and the list clunky and could slow down the system response on the finished product, making it harder and more frustrating to use. In addition, we are confused as to why we can’t interact with the map directly and click on buildings to find out what they are and what rooms are within. This is a shortfall that we should be able to address with our design.

University of East Anglia

YOUR NEW INFORMATION KIOSK

- Placed at critical locations around campus
- Easy to use and accessible to all
- Quick and efficient access to information
- Sturdy and weatherproof
- Constantly updated and maintained

FIND OUT MORE

HOME PAGE

The HOME page contains all of the most commonly accessed features of the system at a glance, allowing you to quickly find whatever you are looking for. The MAP button will direct you to the map page, either interior or campus-wide depending on where the kiosk is located. The SEARCH button will direct you to the system's robust search function, which contains data on thousands of university-related topics, people, locations and events. The LANGUAGE button allows you to translate the entire system into your preferred language, with clear, simple instructions.

The scrolling carousel of ads is continually updated, keeping you abreast of what's going on on campus--where, when, and with whom.

FLOOR MAP

Searching for a specific room? Can't find the room you want? Don't be in doubt.

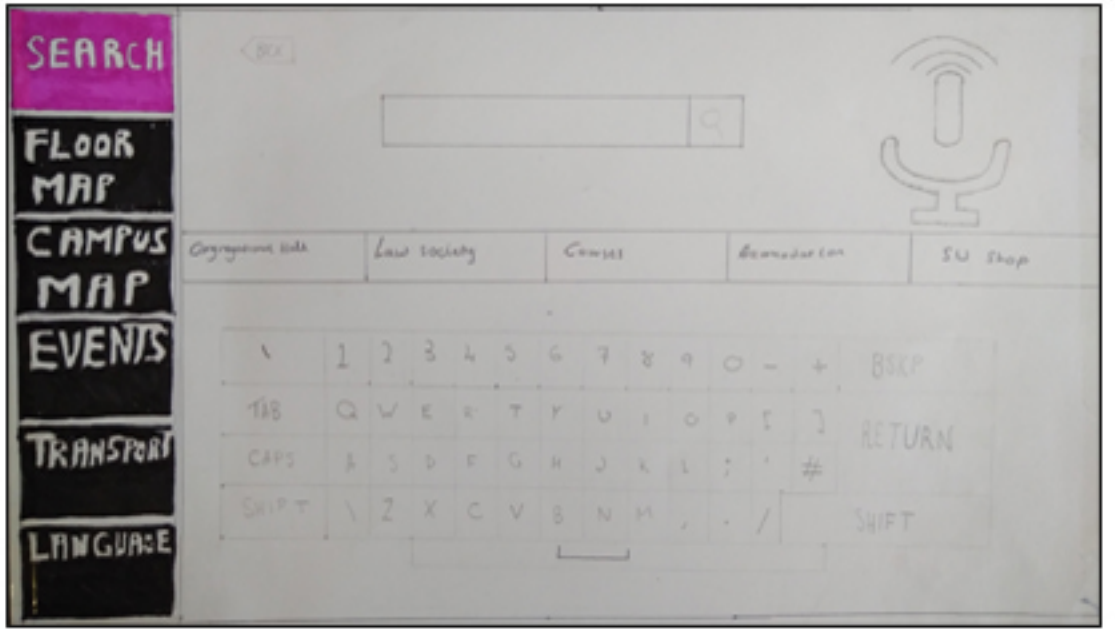
Head over to the FLOOR MAP page and find what you are looking for. You can find all the room details, all the study areas and all of facilities of any building on campus. Scroll through the floors with your fingers, and tap to highlight features. There is also a useful key that explains every symbol in the map, which makes the FLOOR MAP very clear and user-friendly.

CAMPUS MAP

The CAMPUS MAP page is your one-stop feature to find your way around campus. Simply tap on a location and you will receive a short summary of the building--name, function, opening hours, etc--and a range of options including further information and a routing system. Scan the provided QR code with your phone to download the route as a .pdf, ensuring you'll never be short of directions. Impaired mobility? No problem, simply tap on the disability icon and the system will generate an accessible route for you, taking account of stairs and other obstacles.

If you are familiar with any modern map/gps system, adapting to the campus map will be a breeze. Pan with your fingers and tap the buttons in the top right to zoom in and out.

SEARCH



The SEARCH function has been made even easier as now you can tap for speech-to-text and voice activation. Simply tap the microphone icon and search whatever you're looking for. Don't worry about languages as the software detects most commonly spoken languages globally.

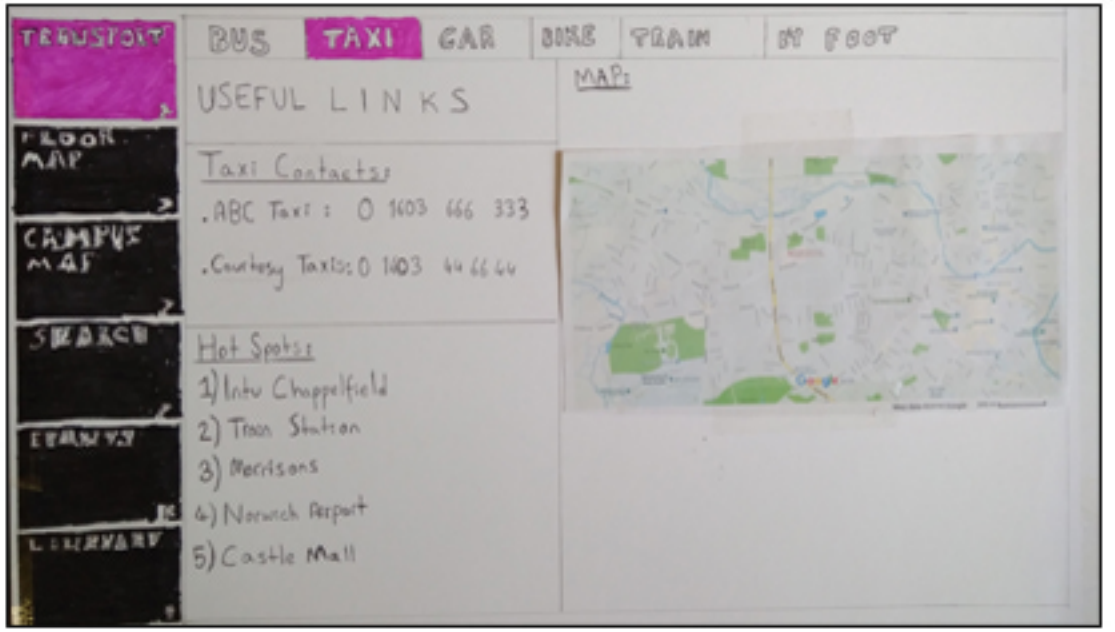
The SEARCH page also includes our quick search so you can easily search for the most common asked things with a simple click of a button. Don't worry about getting your search completely wrong as our "No result found" response prevents you from going off tangent. When searching for places or people we also have a 'send to phone' function that will directly send you the information of the person or place and how to get there through your mobile device.

EVENTS

Tapping the EVENTS button will take you to a listing for all upcoming events across the UEA campus, including open lectures, festival events, live music and more. From the front page you can scroll through the current month's activities, or switch to another month to find what's on in the future. If you find an event you like the sound of, tapping on it will produce all the information you could need, including where and when it's on, and who it is presented by. As with the CAMPUS MAP, you can send these details to your phone or email address with the SEND TO PHONE feature.

If you're looking for information on a specific event, the SEARCH function introduced earlier can be used to find it.

TRANSPORT



Need to catch a ride into the city or the surrounding area? Don't worry, the TRANSPORT page is for you.

Whether by bus, car, bike, taxi, car or train, the TRANSPORT page wil provide you with clear, concise information to make your journey easier With links to the public transport services which run through the UEA campus, the page will also keep you up to date on service disruptions. It will even offer suggestions for nearby cycling and hiking routes to explore the natural beauty of the countryside

Task 3 – Development Outline

Initial Organisation and Pre-Planning

Martin volunteered as Project Manager early on, being the first to email the group members on day one to arrange our first meeting, set up our group Facebook chat as well as organising meeting times and booking rooms. In addition, Martin agreed to record and distribute detailed minutes summarising what was discussed during the group meetings as well as what was expected from each group member before the next meeting, which was distributed to other group members to question. This was to make sure that any group members that didn't attend a meeting knew what was spoken about, as well as a reference for the group later, especially regarding writing this development outline.

At our first group meeting we decided that work should be spread as best as possible and decisions should be made by group consensus as much as possible, while keeping in mind that we would try to push for individual decision making on some more minor aspects of the project. We discussed how the marks should be split and agreed that if a member didn't pull their weight or were absent for meetings without reason then we would discuss the fair division of marks.

We identified that as Martin and Chris lived in the same flat and shared the same classes that there could be potential for them to organise elements of the project outside of group consensus, so those group members decided to limit discussion of the project to the meetings and Facebook group chat as much as possible.

The members as a group then wrote down what they felt at the time would be the flow of the project, including all the major milestones and what order everything should be completed in. They then discussed how long each milestone would take to reach and timetabled in a rough estimate of when meetings should be booked in based off their timetables. This became the first Meeting Timetable which was included in all the compiled minutes and adjusted as the project went forward, as well as being fully discussed later in development.

Meeting Prior Actions	Meeting Topic	Meeting Date and Time
~~N/A~~	~~Initial project discussion.~~	~~1pm, Thursday 22nd March~~
Evaluate UEA site and compile Task 1 report.	Discuss elements to be used from reports and decide system features.	2pm, Friday 06th April
Complete 'storyboard' designs for UI and hardware.	Present individual designs, annotate designs and agree draft design.	2pm, Thursday 12th April
Complete A4 draft screen designs from annotated notes.	Present & annotate drafts, agree all final designs and discuss text for brochure.	2pm, Monday 16th April
Complete final designs and draft brochure text as agreed.	Present final design & brochure, decide questionnaire & start presentation draft.	1pm, Friday 20th April
Complete outline script for presentation & final brochure text	Present scripts, annotate scripts and discuss presentation flow.	12pm, Thursday 26th April
Complete final draft script based on annotations.	Discuss final script, perform presentation and collect questionnaire feedback.	1pm, Tuesday 01st May
N/A	Test presentation with James, collect feedback.	TBD, Thursday 03rd May
Use feedback to write final scripts.	Final group rehearsal of presentation.	2pm, Monday 07th May
N/A	Demonstration in front of assessment team.	TBD, Tues-Fri 08th-11th May
Complete final brochure, final development outline and final individual report.	N/A unless otherwise decided. Ensure designated submitter is able to submit Tasks 1 – 3 by this date. Ensure you submit your own Task 4 by this date.	3pm Monday 14th May

1. Initial Timetable following the first meeting

We discussed what sorts of prototype designs we could make and how the display model could operate and made brief notes on materials and possible elements we could include on the unit. Martin mentioned that there was a map system he knew of in a shopping centre he was going to over the Easter Weekend that could provide some inspiration.

Finally, we decided the first milestone should be the production of our individual reports for Task one before the second meeting as well as clarifying from James certain parts of the project we discussed.

UEA HCI Review

Task one was split by having each person write their own review of the UEA site over Easter then as a group at our second meeting we decided which elements we all agreed on and which ones we individually picked up on that the rest of the group approves of. Martin then combined our individual reviews into a single document that covers everything we discussed and outlined:

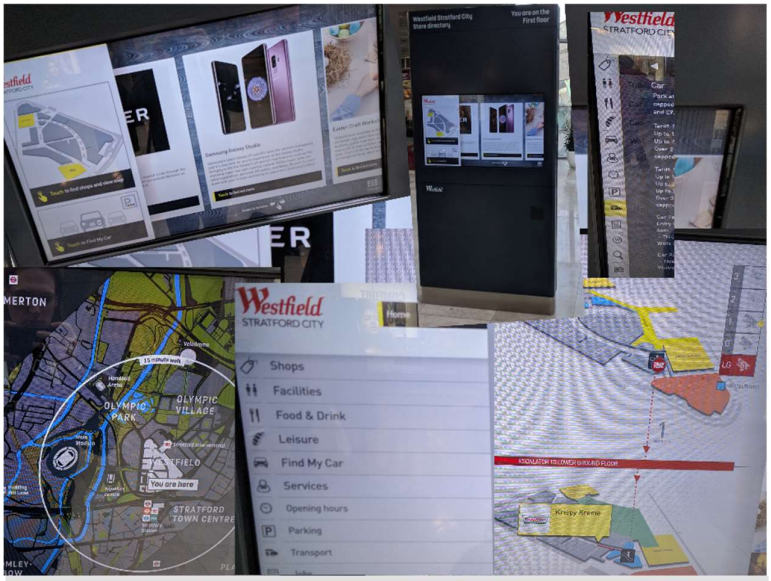
- Visual elements we liked and would carry over to our project,
- Visual elements we didn't like and would like to improve on our project,
- Functional elements we liked and would use,
- Functional elements we would rather improve on.

This worked reasonably well for us at the time however following our seminar on Usability Testing we all agree that if we had designed our review around Neilsen's '10 Heuristics for User Interface Design', our review would have been much more consistent and would almost certainly have picked up on issues we didn't notice on our first try. Unfortunately, by the time we realised this we had already finalised that part of the project and decided to continue designing the current system with just the review we had already carried out in mind.

System Design Concepts

In our second meeting we also spoke about some basic design guidelines and what we should design the system around, keeping in mind that we should design the prototype with an actual unit in mind. We decided that we would want the prototype to be a 1:1 replica of the size of the final unit, which may require using A3 card as the medium for designing the slides on. Martin shared the pictures he took of the interactive map at Westfield Stratford Shopping Centre which would eventually have a large influence on the designs we brought forward.

Additional ideas we discussed at this meeting included having an events system that would link from the Home page, using QR codes to send information to the user's phone, as well as facial user recognition. We liked the idea of there being some interactivity on the unit itself and decided a Home button should be included.



2. Westfield Stratford Map Examples

We also discussed which screens should be included on the unit and mentioned Home, map, contact info, search results, language selection and local area maps. We referred to the problem statement to understand that the client is looking for provision of directions, directory of people, opening times of facilities, list of campus facilities, how to get to parts of the campus and a phone number enquiry system. We agreed to expand on these ideas over the

following week by drawing out a selection of 'Storyboard' designs for the Hardware, UI and Screens (Slides) and present them at the next meeting. We also agreed that we would split the costs evenly between all members of the group for whatever materials we decided to buy, and Martin agreed to research costs for the different materials we discussed up to that point.

At our third meeting we presented the designs we had put together and came to some easy conclusions on some pages such as the homepage, map, route display and local transport pages, as they were influenced quite a bit from the Stratford Map. Other elements required some discussion, acceptance and compromise, such as the position and size of UI elements, the layout and scrolling ability of some pages, how internal maps would move and specifics of the search system. By the end of the meeting, however, we had all twelve of our pages agreed upon and resketched by Chris as a basis for the system slides moving forward. We then ranked each slide based off how hard we thought it would be to construct on a scale of one to four and divided up the pages as evenly as possible to ensure everyone got a similar allocation of points.

3. The twelve system slides

Our final UI concept was one based off the UEA website using white text on a black background for menu items with any pertinent buttons such as the title for the current page and back buttons to be highlighted in fuchsia / pink. We wanted to make the UI elements large but not overbearing so that people with poor eyesight could easily navigate it.

Our final Hardware design was based strongly off the Stratford Map as we felt this showed good design, being at the right height to be used by most people including those in wheelchair and showing your current location while being a large, striking design. To improve that design, we decided to include use of QR codes for getting information from the system to the user and voice recognition for changing language and searching. We discussed including speakers on the unit but thought it would be annoying for those that might be near to the kiosk while it was being used, addressing the issue somewhat by including a hearing loop hooked into a screen reader for those with a hearing aid. We realised that this would be difficult to show in a prototype and settled to explain the feature at the presentation instead. We discussed the idea of having braille on the unit but decided that if somebody required braille then they would find it impossible to navigate the system itself as braille on a touch screen is impossible to implement with current technology.

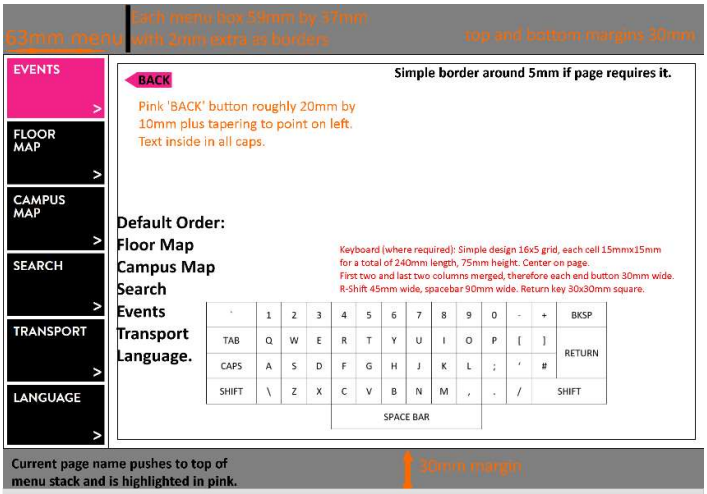
At our third meeting we also decided what items we needed for construction of the hardware and where they should be sourced from. The costs were agreed, and Martin ordered them for delivery before the fourth meeting.

Drafting Designs

With our initial concepts complete we decided to work on an A4 prototype for each page to narrow down on what size things should be on the screen and exactly what elements should be included on each page. In addition, we started to research how the slides should be constructed so that moving elements would work and not easily break or be caught up on the slides themselves.

At our fourth meeting we presented these designs to each other for critique and feedback. Fortunately, we all found at least something on each slide which we felt could be improved and as a group we discussed what iterations we could make to these drafts that could carry forward onto our final designs. One of the main points we felt needed addressing was consistency since we were concerned that without accurate measurements and standardisation of elements that everyone's screens would only match the other ones they designed. Martin agreed to design a layout that everyone could easily read and use to ensure everyone stayed consistent. We also discussed real-world reasoning for design elements, Martin brought up that the 16:9 screen ratio is popular in displays these days and that fits close to the A3 paper ratio, which then works out to be the same size as a 19-inch display. The extra space would also allow us to run the slides in sideways into the hardware without having them pop out the front.

We also decided at this meeting to revisit our timescales. Although we weren't behind schedule we all found that the design of the A4 versions of our slides took longer to do than we expected and that ramping up to A3 would take that much more time. Considering the work from other modules was also starting to ramp up towards the end of semester we decided to put back work on the brochure by two weeks as this was not required until project end. Our other timescales moved back too, scripts would be completed by meeting six, rehearsal of scripts would happen at meeting seven in time to test our presentation on that Thursday. A3 sheets were given out and we decided that we should only require one slide to be completed before our fifth meeting rather than the entire set.



4. Finalised Layout for page consistency

Finalisation, Devourer of Time

We found that by our fifth meeting we were beginning to feel the effects of the 'Project Management Triangle', that is we wanted a project with a reasonably decent scope to cover, at a high quality and a low cost (to our sanity) and we were quickly realising that one of those was going to suffer. Since the scope and timescale was set at this point, we could only adjust between quality or personal stability, which was a decision we all made individually over the following couple week. Our fifth meeting was the first meeting where we were all in the same room at the same time, which was good to ensure we were all on the same page without sharing minutes. This meeting provided us a place to work on our slides while discussing any last-minute changes that should be made or any small inconsistencies to be aware of.

5. A4 Draft Designs with group feedback annotations

We discussed the design of the hardware (kiosk) which was still in its concept phase at this point as we wanted to complete a few real slides first to ensure the interactable elements would work inside it. We decided that since it was something that would be time consuming and benefitted from fewer people being around it (as only one or at most two people could work on the physical design at once) we decided that Chris and Martin would design the unit in their kitchen and keep the group updated on its progress.

The following day the hardware went from concept to half-finished design, having been iterated throughout as more questions came up and were answered. We wanted a design that firstly allowed all our slides to operate within it. This meant that we couldn't slide in from the side as there wouldn't be enough support along the bottom of the slide when vertical sliding elements were used. We realised that the foamcore alone was too flimsy to be used on its own, so we backed it up with some double corrugated cardboard, supergluing in brackets to the corners for stability. We then realised that we couldn't cut a hole through the whole unit as that would make it weaker as well as leave the slide so far back in the unit that it would be difficult to see details around the edges. The layered approach we settled for was the best compromise, allowing slides to be moved in and out but being somewhat difficult to do unless they were at the right angle. Ultimately, we feel this worked against us during the presentation as it slowed things down and was much clumsier than we wanted. If we were to do this project a second time, we feel a more in-depth design process for the hardware would be needed. Over the following week the box for brochures was built and attached and the lettering was measured and drawn, all-in-all taking around 18 hours from concept to completion.

Unfortunately, our Sixth meeting was pushed back four days due to availability and rooms not being available and so the seventh meeting, which would have happened the following day didn't happen. With the hardware taking so long to complete we were finding it even harder to maintain quality across the project in the time we had left, and we still had to yet arrange for a script walkthrough, when our scripts hadn't been written yet. It was at this point we were glad that we wrote the timescale tighter than necessary at first and started so soon, as it allowed us time to push those timescales back at this point in the project. The meeting involved checking the hardware, showing each other our progress to ensure everything was going well and working out some talking points for the presentation. We decided that we wouldn't be performing the whole presentation at the test with James but highlighting some major features and taking a note of what should be improved.

Following our dry run, we felt happy that we could address quite a few of the points that could come up in the demonstration but based on feedback we recognised 3 things that we needed to add or adjust in the project: accessibility regarding the Campus Map, design regarding the use of printed maps on the Floor Map and mentioning of the design decisions behind the hardware. Directly after

the dry run we met briefly to address those points. We decided to have a second acetate sheet with a different route on it as well as an extra UI button on the Campus Map to ensure the system deals with alternate routes for users in a wheelchair. We also decided to remove all but the actual map outline from the Floor Map and write the map key ourselves on the slide.

Our seventh meeting happened a couple days before the demonstration, where we looked over what was adjusted, collected together the slides that were finished in those last couple days and prepared them for use. We did not rehearse our presentation at this time which may have been to our detriment as we ran over time on our demonstration.

Regarding the brochure, Chris volunteered at an early stage to be the lead on that part of the project, which we were all happy with. Chris designed the initial layout and asked us for our input in the form of a couple paragraphs for each section, giving his own design as inspiration for what it should look like. This was completed by everyone in the days following the demonstration.

Testing, Feedback and Improvement

We found we didn't have enough time before our demonstration to test and acquire feedback from people outside the project, but this was completed in the days following. To bring in targeted feedback we designed a questionnaire that we would have testers fill in, the questions we asked were:

- Considering the height that the kiosk is to be placed, do you feel it is accessible to you?
- From what we have shown, how easy do you think it is to navigate around the system?
- Is all the information you would want from a help kiosk available on the system? What, if anything, would you add?
- Is the design visually appealing? Is there anything you would change?
- Do you find the design to be consistent across all screens?
- Do you feel all the features were explained in enough detail? Would you like to see any additional explanation of features?

However, this didn't bring us the constructive criticism that we had hoped for as the feedback was generally brief and positive. As a group we recognised after our demonstration that we could have done with two more features in our system – an easy way to find facilities on site like food and drink and a search results page when there is more than one search – both features we had discussed and storyboarded early in the design process but scrapped to streamline the project. None of the feedback we received addressed these shortfalls, however. We feel that if we were to do this project again, we would like to spend more time working on better questions to catch issues, like asking the tester for elements they feel are missing from the design. We also found that none of our testers had a background in UI development or design and so the feedback they were able to give was limited by their knowledge. We identified that if we were to do this again we would either try to gain feedback from people that had more knowledge in these fields, or even write a short guide based off the testing methods we have covered in the module.

In conclusion, we all feel that the project was managed reasonably and we all had the opportunity to add our own thoughts and ideas to the final design however the design we ended up with could be improved upon and we would like to have taken ideas from our presentation to produce a second prototype to fulfil the client's requirements were this within the scope of the project.