Wednesday 26 June 1013

Parallel session A3 - 8W 2.23 16:00-17:30

How responsive do you want your website?

ANSTEY	Paula	University of Bristol
ASHURST	Stephen	Loughborough University
BAILEY	David	Bath Spa University
BEARD	Chris	Keele University
BRIERTON	Richard	University of Sheffield
BROWN	Barney	University of Cambridge
BYLES	Robin	The University of Sheffield
CORBETT	Craig	National Oceanography Centre
CORNFORTH	David	Jisc infoNet
EVANS	Stephen	University of St Andrews
GLYNN	Alison	University of Strathclyde
HEAP	Michelle	University of Leicester
LANCASTER	Michael	Keele University School of Medicine
MCLAUCHLAN	Ryan	Univeristy of Dundee
SENIOR	Ian	University of Oxford IT Services
SHAH	Hatim	National Oceanography Centre, Southampton
SMITH	Joel	UCL
SNEEZUM	Russell	Anglia Ruskin University
THIRLWELL	Jonathan	University of Kent
TRAFFORD	Sam	University of Liverpool
WHATMOUGH	Allan	Birkbeck, University of London
WILKS	Gemma	The University of Nottingham

Abstract

2012/13 saw the redesign of the University web templates into a responsive design suitable for both central University and departmental use. We chose to be as responsive as possible and (finally) took delivery of a set of templates only a couple of months later than planned. We used a studio for the design process that had some expertise in responsive design, but was that enough to give us what we needed and is it resilient enough for day-to-day use? I'll be telling you about the theory and the practice, and how delivery of complex templates affects the community of users in the University. All and any mobile devices are welcome!

Introduction

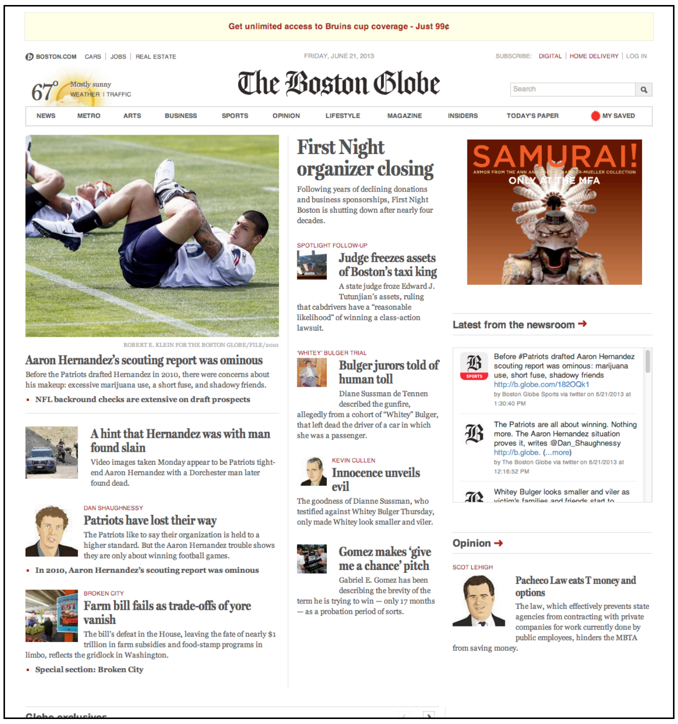
Our environment

Cambridge is a very distributed environment – we have a central server that acts as a hub to content that is accommodated on over 800 web servers throughout the University. Most of these web servers are run individually, although there are some service providers of CMSs, notably the Computing Service provision of a Plone-based service (which at the start of this project hosted about 80 sites), the Clinical School Computing Service (which hosted about 30 WordPress sites), and the Central Admin Computing (which hosts some 15-20 sites in a custom system). The central server was run in a custom system not suitable for expansion.

The previous iteration of templates had been released in 2007/8, used on the central sites in a slightly modified form and released as a template pack for download by departments. It had been well accepted but had often been adapted by departments for their own use, which resulted in some strange manifestations of the central style. The design was in need of a change, to accommodate mobile devices more effectively, use more up-to-date coding and to introduce more imagery.

Where we started

At the time we started (November 2011 – January 2012), the prime (and new) example of a major site using responsive design was The Boston Globe (http://www.bostonglobe.com/), famously built by Ethan Marcotte.



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ROBERT E. KLEIN FOR THE BOSTON GLOBE/FILE/2010

Aaron Hernandez's scouting report was ominous

Before the Patriots drafted Hernandez in 2010, there were concerns about his makeup: excessive marijuana use, a short fuse, and shadowy friends.

- NFL backround checks are extensive on draft prospects

A hint that Hernandez was with man found slain

Video images taken Monday appear to be Patriots tight-end Aaron Hernandez with a Dorchester man later found dead.

DAN SHAUGHNESSY

Patriots have lost their way

The Patriots like to say their organization is held to a higher standard. But the Aaron Hernandez trouble shows they are only about winning football games.

- In 2010, Aaron Hernandez's scouting report was ominous

BROKEN CITY

Farm bill fails as trade-offs of yore vanish

The bill's defeat in the House, leaving the fate of nearly $1 trillion in farm subsidies and food-stamp programs in limbo, reflects the gridlock in Washington.

- Special section: Broken City

First Night organizer closing

Following years of declining donations and business sponsorships, First Night Boston is shutting down after nearly four decades.

SPOTLIGHT FOLLOW-UP

Judge freezes assets of Boston's taxi king

A state judge froze Edward J. Tutunjian's assets, ruling that cabdrivers have a "reasonable likelihood" of winning a class-action lawsuit.

'WHITEY' BULGER TRIAL

Bulger jurors told of human toll

Diane Sussman de Tennen described the gunfire, allegedly from a cohort of "Whitey" Bulger, that left dead the driver of a car in which she was a passenger.

KEVIN CULLEN

Innocence unveils evil

The goodness of Dianne Sussman, who testified against Whitey Bulger Thursday, only made Whitey look smaller and viler.

Gomez makes 'give me a chance' pitch

Gabriel E. Gomez has been describing the brevity of the term he is trying to win — only 17 months — as a probation period of sorts.

SAMURAI! ONLY AT THE MFA

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Before #Patriots drafted Aaron Hernandez scouting report was ominous: marijuana use, short fuse, shadowy friends http://b.globe.com/182OQk1
by Boston Globe Sports via twitter on 6/21/2013 at 1:30:40 PM

The Patriots are all about winning. Nothing more. The Aaron Hernandez situation proves it, writes @Dan_Shaughnessy http://b.globe. (...more)
by The Boston Globe via twitter on 6/21/2013 at 12:16:52 PM

Whitey Bulger looks smaller and viler as

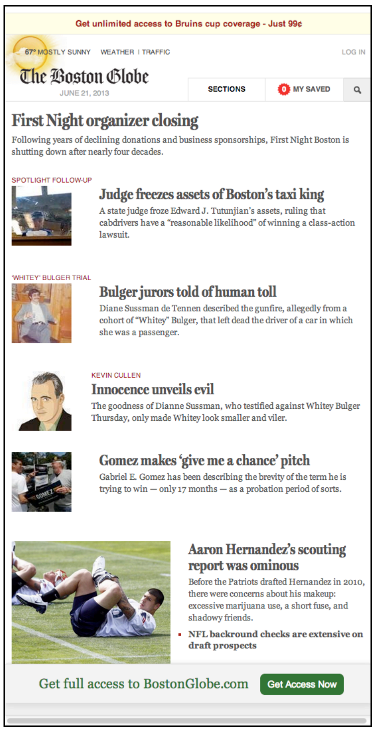
Opinion →

SCOT LEHIGH

Pacheco Law eats T money and options

The law, which effectively prevents state agencies from contracting with private companies for work currently done by public employees, hinders the MBTA from saving money.

Globe exclusives



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- NFL backround checks are extensive on draft prospects

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Our initial design brief (January 2012: Appendix A) was pretty long and painstaking and we were quite pleased about all the things we'd thought of. With responsive design being so new to mainstream, we didn't know enough about using **navigation, images, image carousels and video** and using **tables** across devices to know that these were really difficult and undecided areas of responsive design.

In the selection of the design company, we looked at 10 companies, most of whom didn't have any grasp of responsive design beyond the term. The company of choice, which was the only one to have actually created a responsive site (albeit their own), identified the following two areas as being key:

- Navigation methods were identified as a hard challenge – both in terms of providing coherent navigation for the desktop view and providing sensible navigation for mobile devices.
- Use of javascript would be minimized and CSS used instead, to reduce the load on pages

What we thought we could have

A look at our specification shows that what we wanted was a set of templates that was fast, efficient and easy to use for our non technical people and web managers, but we also wanted fully responsive. What we didn't know then was that there is a disconnect between the first two and the last of these items.

The design process

Where it succeeded

Once we got past the workshop stage we had rapid iterative meetings about code requirements. The designers came up with many ideas and presented cases to support them, some we accepted and some we didn't.

Where it didn't

- The design team were remote – this and an over-ambitious schedule meant a lot of travelling and time out of the office by us. Often some people were missing from meetings – detailed discussions couldn't take place and some decisions were made ad hoc.
- The designers were very keen on workshops with users to work on information architecture, and did not allocate enough time to solving the technical problems thrown up by creating the templates. They

had worked on responsive templates before but badly underestimated the number of complex problems that were part of our project. In part this is usual behavior, exacerbated by the newness of the challenges they took on.

The delivered templates

The delivered templates had some features that we hadn't asked for in our specification and a few problems/issues:

- For the headings, the designers wanted to connect the templates with the paper-based house style and use Typekit to supply Myriad Pro. Although we agreed this and were able to buy a licence for University use at a reasonable price, we did discover some cross-browser problems that hadn't been accounted for (see Appendix B for details).
- Alternate colour schemes were provided so that template users could have some variation – these were derived from the colour palette used in the paper-based house style. Initially there were six colour schemes and we added another, discovering on the way that it was really quite complex to do this and integrate the new style into the stylesheets, and also involved creating a css background image.
- despite being asked, the designers had not allocated a namespace for the template attributes. Previous experience showed this was essential when incorporating templates into a CMS.
- the working templates were much more complex and tag-heavy than expected. It quickly became obvious that it would be too labour intensive to use the templates by hand.
- the delivered 'live styleguide' was very short of examples with real content, which meant that working out the mechanisms of some navigation items took longer than expected, since it was derived from a single example.
- Although the use of javascript was restricted, just to achieve responsive design at this level requires more javascript than you might hope for. Use of libraries needs to be watched closely, however cutting down the libraries provided will create future difficulties with installing updates.

Installing the templates into a CMS

Initially there were two core CMSs into which the templates would be installed. One already up and running (Plone-based) and one to be built (Drupal-based) that would house the core site and be suitable for using as departmental sites.

- The Plone-based CMS already hosted 80 or so sites (live and in development), which were to be migrated into the new templates, first on a test basis and then the development sites and finally the live sites individually on a site-by-site basis. There was a system upgrade to undertake and a move to a new template management strategy, so we bought in specialist help to build the new site model and troubleshoot template installation.
- The Drupal-based system was built from scratch by a contractor after much familiarizing with the developing templates and the requirements both for the core site and a departmental site.
- Although there was a demand for a WordPress version of the templates, this was not being used centrally and there was neither the effort available nor the money to create this straight away.

Explaining the templates

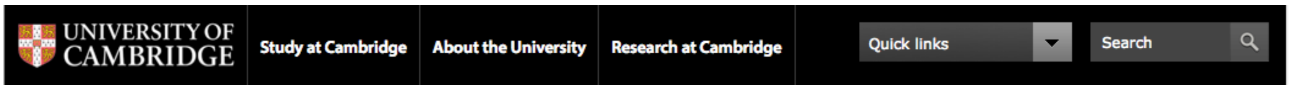
The basic template is created in 12 columns - these are usually grouped either as 4 groups of 3 columns, or combinations of these (3/6/3 for a content page with left navigation and content in a right column). As you look through the screenshots you will recognize the patterns.

Responsive breakpoints

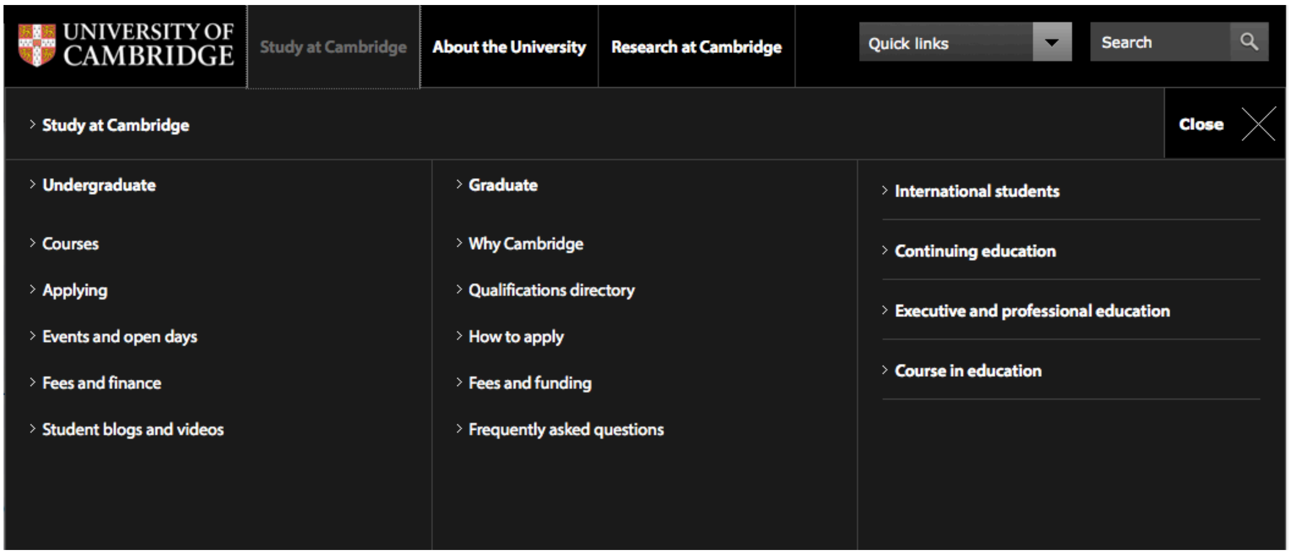
We elected to have only two main visual breakpoints, one for mobiles and small devices (<767px) and one for larger screens - there are some small intermediate differentials for varying the intermediate behaviour of the global navigation bar.

Global navigation and footer

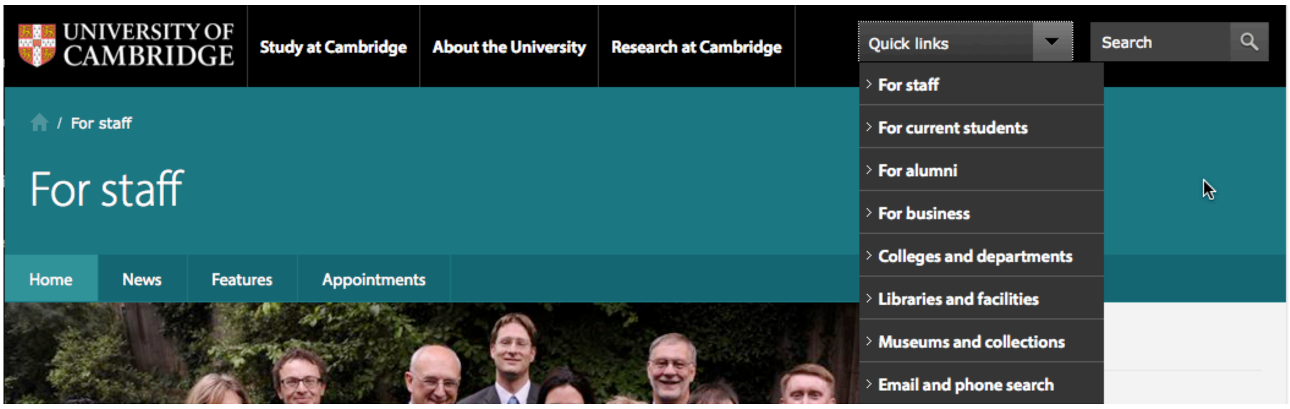
The global navigation and footer is added to all pages except that the header is different on the University home page. They are given the now-ubiquitous black background and house navigation aids. Here are some views of the global header, showing first the standard view:



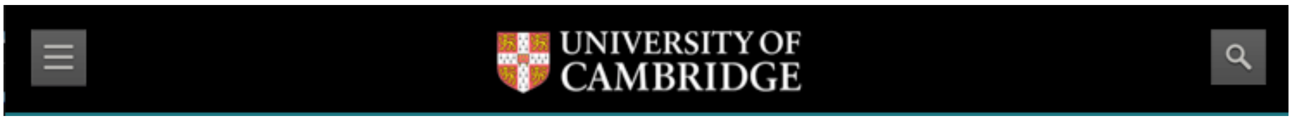
the view with a drawer open (the first two links open drawers, the ‘Research’ link open a page directly):



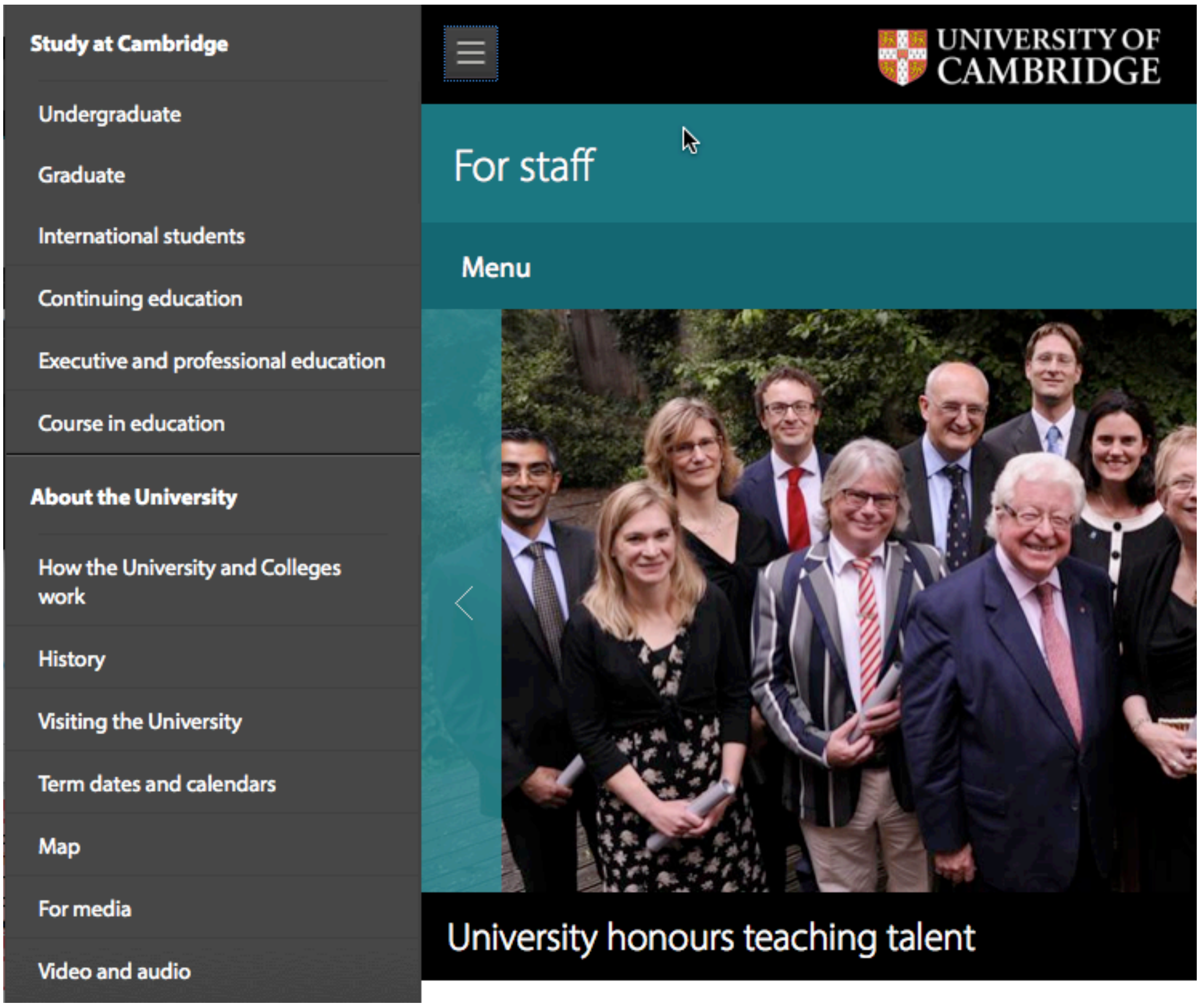
then the popdown Quicklinks list:



The mobile view of the global header:



The popdown list of navigation available in the mobile view (pushes in at left side and disappears again if the 'list' icon is selected):



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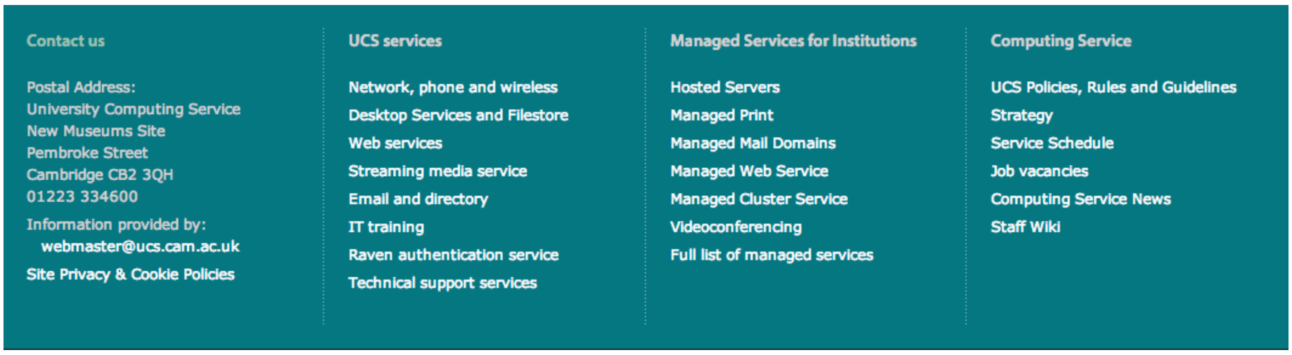
For staff

Menu

University honours teaching talent

The standard (local) footer:



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Postal Address:
University Computing Service
New Museums Site
Pembroke Street
Cambridge CB2 3QH
01223 334600

Information provided by:
webmaster@ucs.cam.ac.uk

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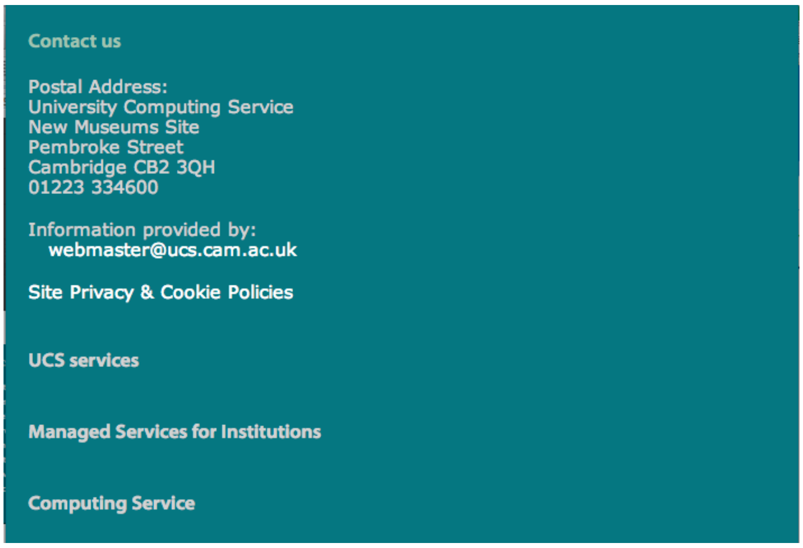
- Managed Web Service
- Managed Cluster Service
- Videoconferencing
- Full list of managed services

Computing Service

- UCS Policies, Rules and Guidelines
- Strategy
- Service Schedule
- Job vacancies
- Computing Service News
- Staff Wiki

and in mobile view (the lists collapse and the heading's link is used):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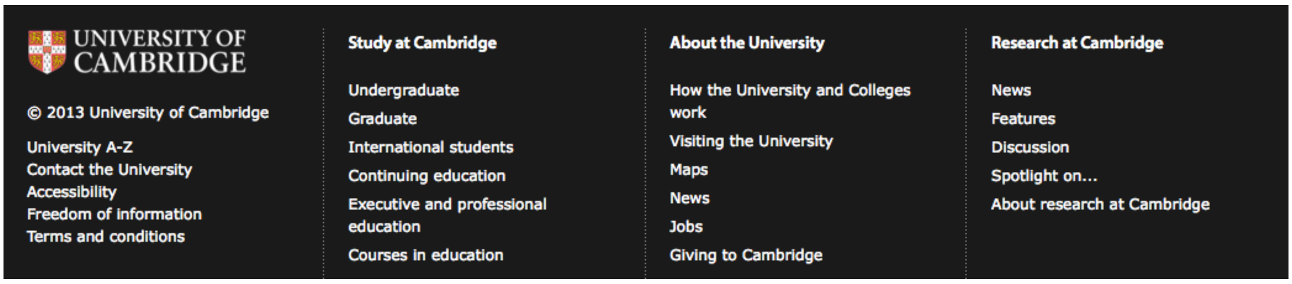
The global footer: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News
Features
Discussion
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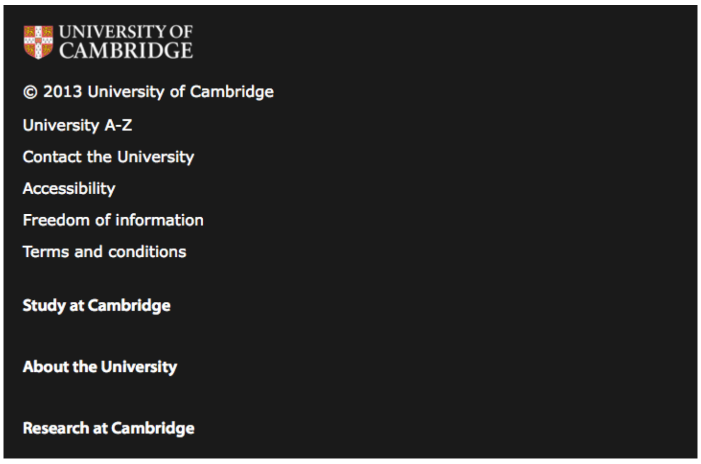
The mobile view of the footer: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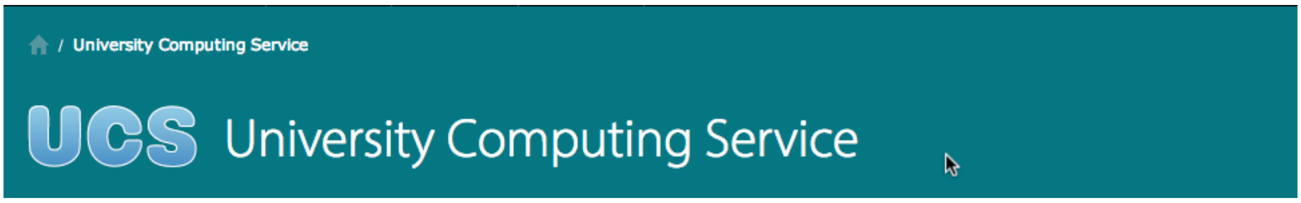
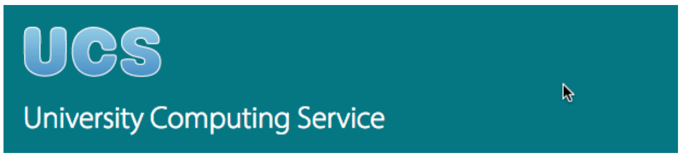
Site header


/ University Computing Service

UCS University Computing Service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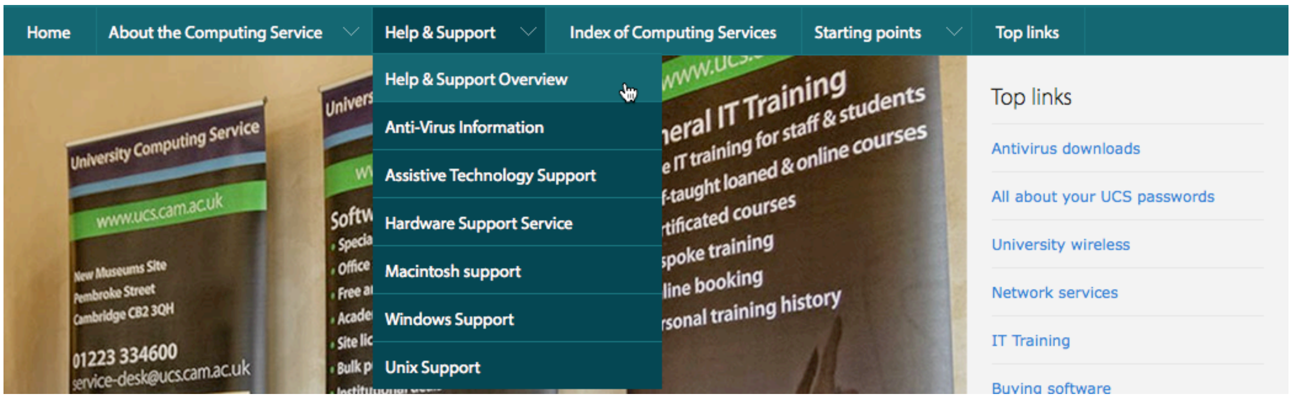
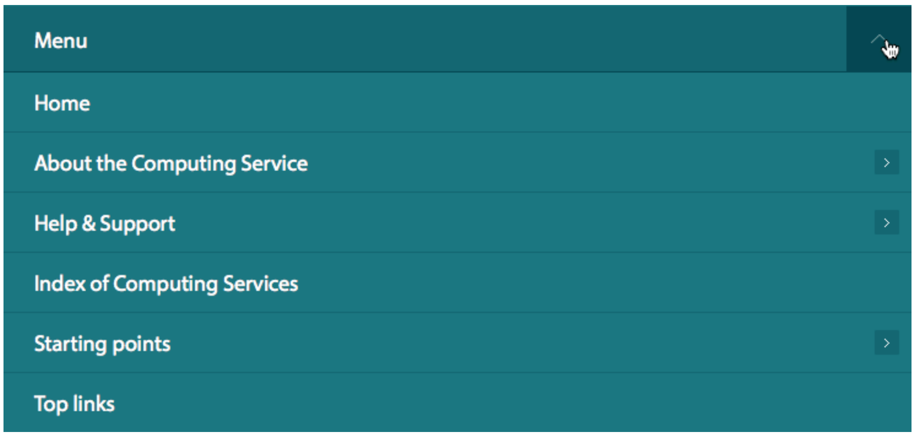
University Computing Service

Site navigation bar

The navigation bar shows items at the top level of the site and, in the desktop view, exposes the next level of navigation in a popdown. It is designed to stay constant for the site:

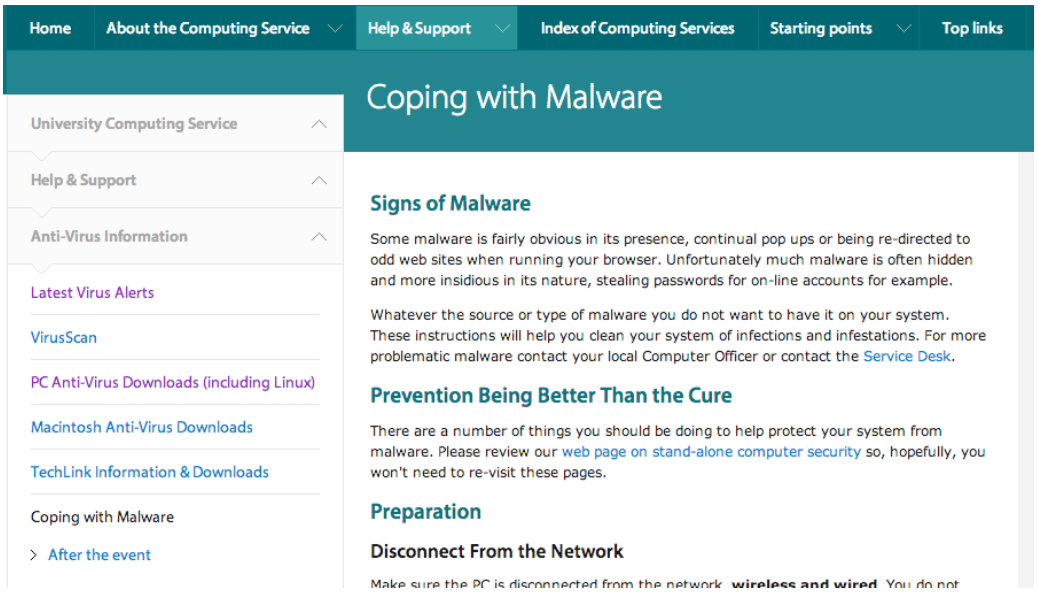


In the mobile view the navigation bar collapses to a menu (covered more below), with further level of navigation rolling in from the right when the right arrow is selected:



Content navigation (left-hand in desktop view)

The left hand navigation was the most difficult to create – it went through several iterations before it was deemed appropriate for dealing with ‘infinite levels of navigation’. The model is that a vertical breadcrumb is created, so the navigation item and its siblings are visible, with a trail formed of its antecedents. It is visible only in the desktop view – in the mobile view the menu locates the current item and gives its context. In a deep page:


Home
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Help & Support
Index of Computing Services
Starting points
Top links
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Help & Support
Anti-Virus Information
Latest Virus Alerts
VirusScan
PC Anti-Virus Downloads (including Linux)
Macintosh Anti-Virus Downloads
TechLink Information & Downloads
Coping with Malware
After the event

Coping with Malware

Signs of Malware

Some malware is fairly obvious in its presence, continual pop ups or being re-directed to odd web sites when running your browser. Unfortunately much malware is often hidden and more insidious in its nature, stealing passwords for on-line accounts for example.

Whatever the source or type of malware you do not want to have it on your system. These instructions will help you clean your system of infections and infestations. For more problematic malware contact your local Computer Officer or contact the Service Desk.

Prevention Being Better Than the Cure

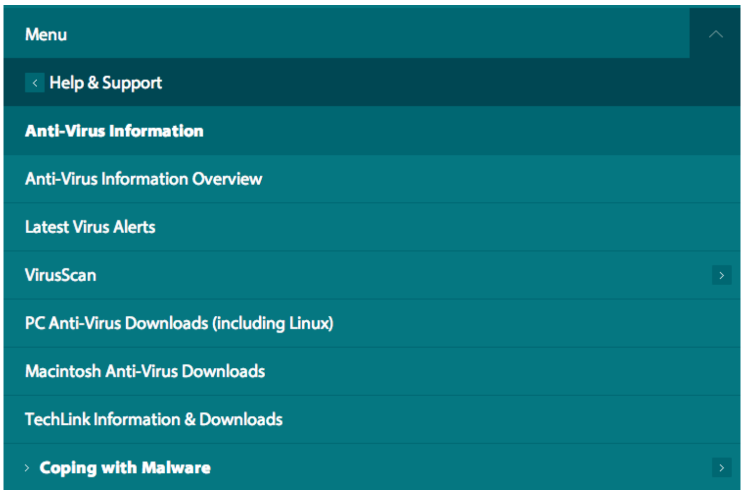
There are a number of things you should be doing to help protect your system from malware. Please review our web page on stand-alone computer security so, hopefully, you won't need to re-visit these pages.

Preparation

Disconnect From the Network

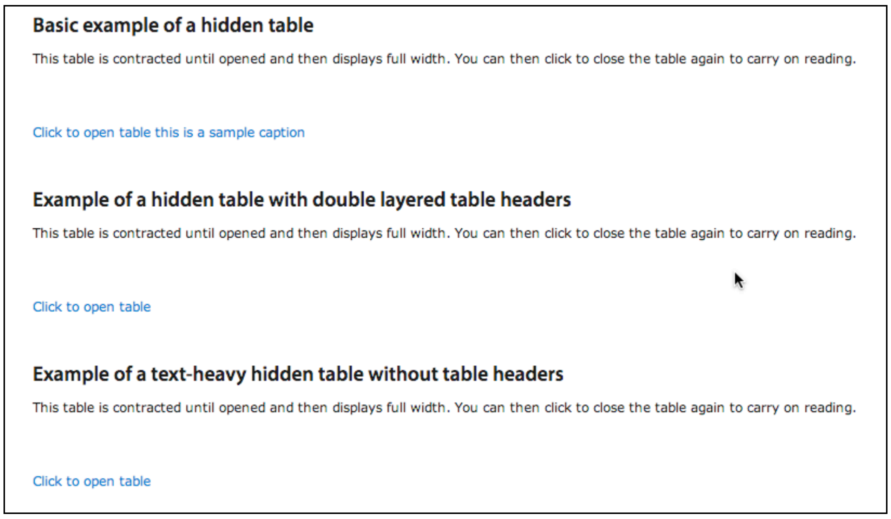
Make sure the PC is disconnected from the network, **wireless and wired**. You do not

In the mobile view, the menu orientates to the following, with the current page in bold:


Menu
Help & Support
Anti-Virus Information
Anti-Virus Information Overview
Latest Virus Alerts
VirusScan
PC Anti-Virus Downloads (including Linux)
Macintosh Anti-Virus Downloads
TechLink Information & Downloads
Coping with Malware

Responsive tables

The designers came up with a selection of different ideas for tables. Some of them are clever but have the disadvantage of needing additional coding to make them work. These are the first three, listed in the live styleguide:



Basic example of a hidden table

This table is contracted until opened and then displays full width. You can then click to close the table again to carry on reading.

Click to open table this is a sample caption

Example of a hidden table with double layered table headers

This table is contracted until opened and then displays full width. You can then click to close the table again to carry on reading.

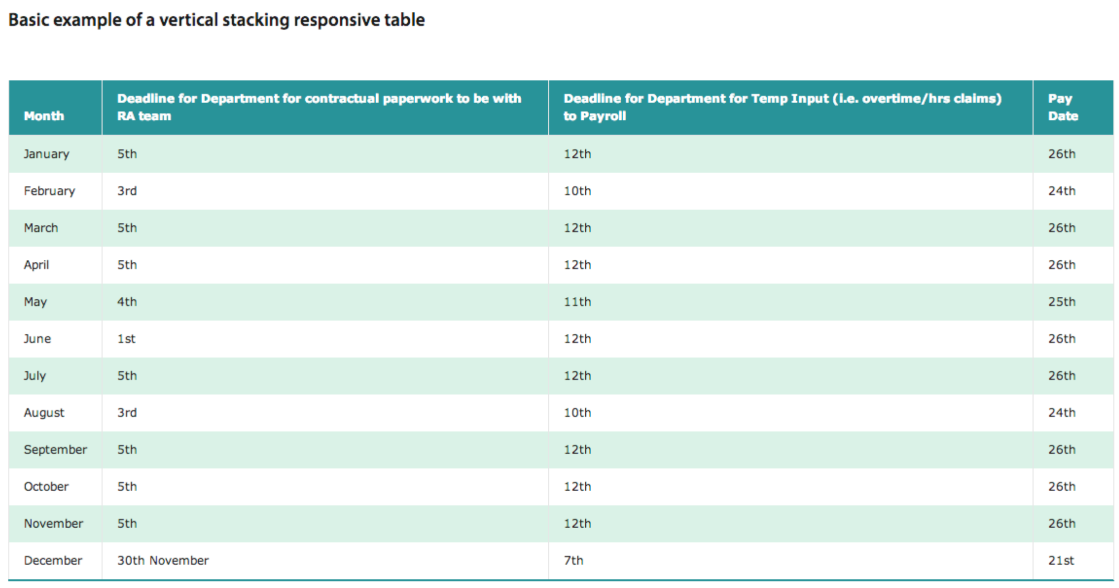
Click to open table

Example of a text-heavy hidden table without table headers

This table is contracted until opened and then displays full width. You can then click to close the table again to carry on reading.

Click to open table

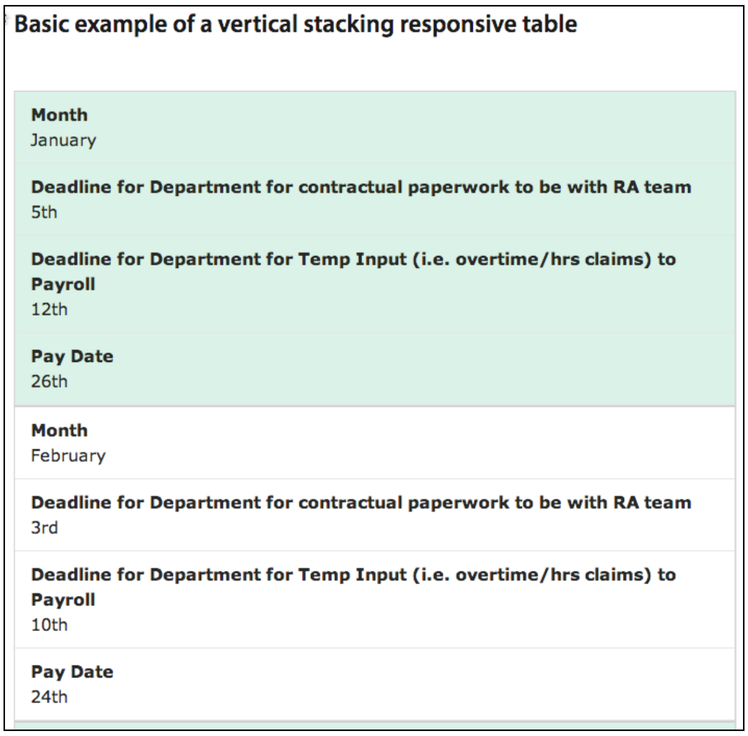
A vertical stacking table:



Basic example of a vertical stacking responsive table

Month	Deadline for Department for contractual paperwork to be with RA team	Deadline for Department for Temp Input (i.e. overtime/hrs claims) to Payroll	Pay Date
January	5th	12th	26th
February	3rd	10th	24th
March	5th	12th	26th
April	5th	12th	26th
May	4th	11th	25th
June	1st	12th	26th
July	5th	12th	26th
August	3rd	10th	24th
September	5th	12th	26th
October	5th	12th	26th
November	5th	12th	26th
December	30th November	7th	21st

In the mobile view, this table type stacks as follows:



Basic example of a vertical stacking responsive table

Month
January

Deadline for Department for contractual paperwork to be with RA team
5th

Deadline for Department for Temp Input (i.e. overtime/hrs claims) to Payroll
12th

Pay Date
26th

Month
February

Deadline for Department for contractual paperwork to be with RA team
3rd

Deadline for Department for Temp Input (i.e. overtime/hrs claims) to Payroll
10th

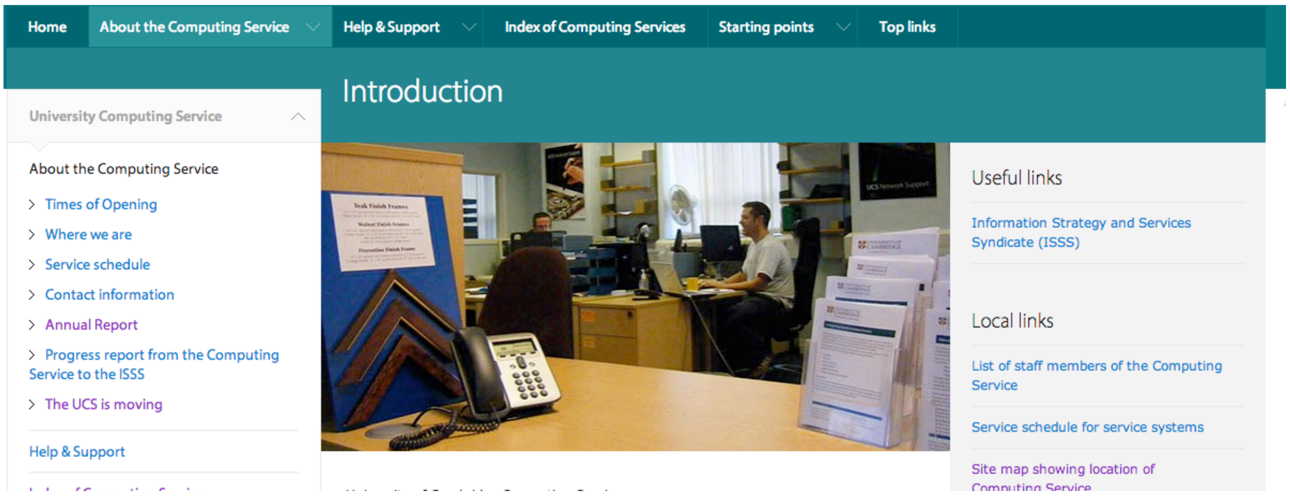
Pay Date
24th

In addition we have a simple table at 100% width. In a mobile view of a table wider than the window, there will be scrolling to the right.

Images

In most contexts images (including those in carousels) will be responsive, so that they will resize to fit the window available (see behaviour of the image carousel on http://www.cam.ac.uk/). There is no substitution of image sizes, so the filesize doesn't vary. A style has been created to enclose an iframe and make embeds responsive – this will only work when the enclosed iframe content will respond.

In the desktop view of an image on a second-level page:



Introduction

University Computing Service

About the Computing Service

- Times of Opening
- Where we are
- Service schedule
- Contact information
- Annual Report
- Progress report from the Computing Service to the ISSS
- The UCS is moving

Help & Support

Useful links

Information Strategy and Services Syndicate (ISSS)

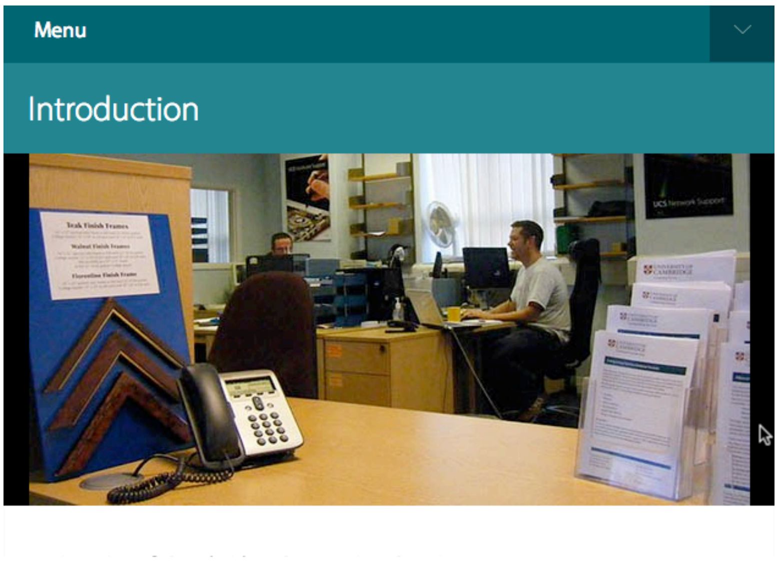
Local links

List of staff members of the Computing Service

Service schedule for service systems

Site map showing location of Computing Service

In the mobile view:



Accommodating the features and fixing issues

Images

There are several aspects to the use of imagery in these templates that need extra attention, compared with use of the previous version:

- The images need to be of high quality both in terms of the interest, composition and balance, the initial size and resolution.
- Site admins need to do preparation work to create images of the right resolution and dimensions
- Sites can use touch icons and favicons, production of which requires additional skills and some design input

Reverse engineering and combining styles

Although in some respects creating a set of templates that acts as the core references is a good idea, the work required to integrate the functionality and styles into CMSs is considerable. In our environment, where there is more than one CMS, there was little alternative, and it does give the discipline of learning exactly what the templates do and how they work. In order to incorporate some nested styles they have had to be combined.

Github for template management

Github is used to manage the templates, and is used to manage the forks for styles and modified javascript that have been produced for the CMSs.

Making the navigation work

As has been described, the navigation is complicated and all parts of it require javascript to ensure it behaves responsively. In Plone, making the navigation work proved not to be too difficult - making the navigation bar behave properly in the mobile view was the trickiest. In Drupal too, this was the case. A problem is that the site has to be continuously indexed to ensure the navigation represents a true map of the site, which is a big overhead on a CMS and a likely source of other interacting issues.

Making the page height work

There is a javascript that calculates the heights of columns and ensures the page finishes neatly at the bottom of the lonest one. It turned out that the designers version of this was not robust and it needed to be rewritten, but it seems to work OK now.

Fixing (some of) the other issues

Other issues are/ have been:

- **IE9 compatibility.** Although IE9 was one of our level-1 browsers, there have been javascript and CSS issues with both the navigation and the carousel that haven't yet been solved. These are not show-stoppers, but mean that the intended functionality isn't what happens so becomes a support problem.
- **Typekit problems.** There have been two issues with use of Typekit: the first that IE can only support four font versions of Typekit fonts, unless you use different IE-specific CSS; the second that there accessibility problems with Zoomkit causing distortion of Typekit fonts when they are magnified.
- **Shifting CSS and javascript issues caused by browser changes.** Because we are on the bleeding edge, everytime a browser changes there is a risk of something breaking. Chrome seems to be the browser that does this most often, with Chrome on Linux presenting unique issues several times already. Chrome is narrowly our most frequently used browser (see p15).

What we provide, now and future

At the moment we provide:

- A central site running on Drupal, with 13 additional separate central sites running variations of the same code.
- A content management service running approximately 88 live sites (45 in the new templates), and 73 development sites – with and additional 5-10 sites a month being added.
- The templates available via Github to developers that can manage them – 4 static live sites have been launched via this route
- A Drupal site object and theme in a late development stage for use by sites that have sufficient skill to be able to create and manage their own Drupal site.
- A WordPress theme is being developed (although not centrally) for the sites in the University that currently use the old templates. It's unlikely that this will be able to support all the functionality and it will almost certainly be a look-alike suitable only for small sites.

Example sites:

- http://www.cam.ac.uk
- http://www.ucs.cam.ac.uk
- http://www.hist.cam.ac.uk
- http://www.infectiousdisease.cam.ac.uk

Supporting users

We are still putting content into the templates and all the while turning up issues that challenge their functionality, especially in content that is deep down in a site.

The Office of Communications supports users who are thinking of migrating into the new templates in their choice of how to do it. Templates were delivered with a 'live styleguide', which has turned out to be a mixed bag: it has much reference that is only for the central teams and is be far too thin to be helpful for end users, so needs to be properly re-written and expanded (see http://comms.group.cam.ac.uk/Project-Light/)

The Falcon content management service is supported via a help website, provision of an introductory course that runs every month, and a series of courses for current users (one per month) to expand their skills. Support for people migrating into the new templates is becoming more hands-on as the more adventurous move and the less adventurous need more help. We will have to migrate the tail-end ourselves so we can stop supporting the old templates and system.

Problem areas and observations

The list of problem areas span all sorts of different user groups and reasons:

- **Depth of header** – the header is deep and some site managers resent the waste of screen space. Caution is needed to make sure the mobile view isn't too top heavy, especially if the site has a long title and/or a logo.

- **Left-hand content navigation in desktop view** – the ‘vertical breadcrumb’ structure is not one that all content managers or site users understand. The appearance is understated and probably needs to be clearer/bolder.
- **Use of images and carousels** – requires technical skills and a visual flair not previously demanded of template users
- **Page weight** – the pages are much heavier than we had hoped, but probably not heavy for the features they offer
- **Site indexing** – continual reindexing of the site to create the navigation is an overhead and in some cases causes unforeseen interactions with other functionality
- **Complexity of code** – the templates are very delicate and are impossible to manage by hand unless you have a high level of skill.

Our Vice –Chancellor has made it know he wants Departments to migrate into the new templates by the end of the year if possible. We set up a questionnaire, which 95 web managers completed. The answers indicated that the chief worries about the new templates were:

- The need for clear guidance about what they were meant to do and how to migrate (particularly less technical managers)
- The need for more guidance on how to use the new templates

Going forward

As well as the possible wider template release after documentation has been improved, we are planning:

- A six-month review of usage and feedback (in July/August)
- A major review after one year

Appendix A – Initial design brief January 2012

Web templates feature set

We would like you to produce detailed guidance as to consistent and appropriate use of the new templates, not only in the core area but beyond. For example: this guidance should provide details as to page structure (h1, h2 etc), Link usage, appropriate use of sidenav (all pages referenced by the sidenav must have the same sidenav), appropriate use of tabbed interfaces, graphical additions for use in lists etc.

The University runs a site-wide search engine that can be used to search either the whole site, a defined group of sites, or a single site. A search box for the search engine must appear on each template with configuration options available.

Intellectual property

The ownership of the templates will be the University and we must be free to modify, enhance and use outside of the 'core' website. The templates must therefore be of sufficient generality to have all of the key elements modified in house (for example to replace images, multimedia or to change the number and/or order of key navigation links in sidebars etc).

General principles:

- Contemporary, responsive design, created with a mobile-first strategy.
- Allow deep levels of navigation
- Allow social media integration
- We want our site to be fast to use, both through the use of the user interfaces it presents people, but also through the efficiency of its resources, code etc.
- Future facing … we're happy to and embrace the opportunity to use bleeding edge technology.
- Backwardly compatible … we need to support and recognise legacy browsers
- Easy to use for our non technical people and web managers. Whilst we will be implementing the templates through our central content management systems with the support of our central web teams, the templates will also be used in distributed departments around the University with differing skill sets. We need to make our sites easier to use for those outside and inside the University.
- Portable to the following content management systems, but must be content management system agnostic:
  - Wordpress
  - Drupal
  - Plone

Specific templates for:

- New homepage (http://www.cam.ac.uk/)
  We recognise that a homepage design project is a different design and build challenge in its own right but we're aspiring to go live in October with a refreshed homepage and core content. We welcome thoughts on how best to run the project to take on board a homepage and site redesign at the same time most effectively. We're also conscious that our homepage, above all other pages, needs to load as fast as possible, and make a big impression.
- Landing/portal page (http://www.cam.ac.uk/research/)
- Content page (http://www.admin.cam.ac.uk/offices/hr/immigration/points/)
- Search results page (http://search.cam.ac.uk/web?query=accommodation&x=0&y=0)

Components AND templates

In addition to templates delivered to deal with particular illustrated examples, we would also like them to be delivered through componentisation.

We feel a componentised mind-set will give us the best chance of making the new design work anywhere, without getting bogged down in CSS & HTML conflicts. We think this is the key to future-proofing the new design and making it an extensible and long-lived asset to the University. We welcome your thoughts on this approach.

We're flexible about how the HTML, CSS, JavaScript, images and other supporting files are put together and supplied, as long as the following principles are observed.

- The reference templates must provide well-crafted, minimal, static examples of all the design features and widgets required.
- We need a componentised page model, where a page is conceptually built from a standard library of widgets or components. [See note (a).]
- We must be able to easily identify all the supporting files needed for a specific page component so they can be extracted and straightforwardly implemented within an arbitrary CMS. This imposes requirements on how a component's supporting files are packaged. [See note (b).]
- The HTML and CSS must be economic and minimal without sacrificing the component structure. [See note (c).]
- The reference implementation should be CMS- and platform-agnostic.

Notes:

a) A component might be, for example: a header, page navigation, slideshow player, Events widget, comments form, login box, search widget. Basically, any part of the design which fulfils a specific functional purpose.
b) We welcome suggestions on how best to componentise all the assets (HTML, CSS, etc.)
c) The component structure must be represented in the HTML and CSS. One of the biggest problems with the current HTML/CSS is that it uses general CSS selectors to do specific things (like float all images right because they happen to be like this on one page, or make the font size in all tables 90%). It started off well but went off-track because this principle apparently wasn't observed.

Content types

We need templates and components that can deal with (at least) the following content types:

- Vacancy adverts (http://www.jobs.cam.ac.uk/job/-11932/)
- Policies and procedures (http://www.admin.cam.ac.uk/offices/hr/policy/)
- News (http://news.admin.cam.ac.uk/news)
- Events (http://www.admin.cam.ac.uk/whatson)
- Forms (http://www.cam.ac.uk/global/search/)
- Course listings and search (http://www.admin.cam.ac.uk/offices/gradstud/prospec/studying/qualifdir/courses/)
- Video and audio (http://www.sms.cam.ac.uk)
- Photography (http://www.cam.ac.uk/research/discussion/women-and-children-first/)
- Discussion boards
- Academic profiles (http://www.cei.cam.ac.uk/directory/djc77@cam.ac.uk)
- Contact information (http://www.admin.cam.ac.uk/global/cgi/stafflist.cgi?officeabbr=communications)
- Blog entries and listing pages (http://www.cam.ac.uk/research/discussion/)
- Gateway pages (http://www.lib.cam.ac.uk/libraries/)
- Section home pages (http://www.cam.ac.uk/international/)
- Campaign websites (http://www.cam.ac.uk/sciencefestival/)
- RSS listings
- Search (http://search.cam.ac.uk/web?query=&x=15&y=10)
- Page controls for navigating multiple pages of results (http://search.cam.ac.uk/web?query=web+templates)

We would expect approaches to the following to be identified:

- Version control
- Development roadmaps
- Release cycles
- Bug reporting
- User testing

Technical specification for the templates (and associated components)

- To be supplied as 'stand-alone' html5/css.
- Conform to the University Web Accessibility Guidelines: http://www.cam.ac.uk/site/accessibility-guidelines/pages.html
- Placeholders must be supplied for description and keyword metadata and guidance provided for search engine optimisation.
- Include html mark-up and the CSS style-sheets required.
- Must be accompanied by print style-sheet(s). The print style-sheet should remove any unnecessary navigational elements, background images, add any information useful in an isolated page (urls, for instance) and result in a pleasing appearance.
- Must be built for and tested against handheld devices but not through reliance on device-specific style-sheets.
- Validate to html5.
- Use validated stylesheets
- Use accessible Javascript.

Browser compatibility

We expect our site to work in as many different browser and operating system setups as possible. The following shows the dominant systems used to access our core site:

Browser	Dec 2010 - Dec 2011		May 2012 - May 2013	
	Visits	**% of total visits**	**Visits**	**% of total visits**
Internet Explorer (8,9,10,7)	6,445,885	37.85	4,324,431	27.33
Firefox (9,8,3)	4,457,656	26.17	3,202,653	20.24
Chrome	2,977,378	17.48	4,512,429	28.51
Safari	2,704,985	15.88	3,153,399 (+66,537 in-app)	20.35
Opera	221,560	1.30	148,168	0.94
Opera Mini	54,238	0.29	64,690	0.41
Android Browser	50,133	0.29	237,201	1.50

(Google Analytics running on our main www.cam.ac.uk website)

In December 2011 the use of Internet Explorer was: ie9, 25%; ie8, 55%; ie7, 16%; ie6, 4%; Mobile devices constituted about 6% of our visits.

In May 2013 the use of Internet Explorer was: 1e10, 18.4%; ie9, 37.3%; ie8, 35.3%; ie7, 7.9%; ie6, 1.2%; Mobile devices constituted about 13.5% of our visits.

Accessibility

- All templates and components must be accessible to WCAG 2.0 AA level
- The colour scheme/pallette chosen must be from within the colour palette in the University identity guidelines (see http://www.admin.cam.ac.uk/offices/communications/services/identityguidelines/), made with consideration to colourblind users.
- As well as providing our web managers with a set of colours to pick from we welcome suggestions for aesthetically and accessibility sensitive colour schemes which could be shipped with the templates.
- The templates must incorporate the following access keys
    - Access key 1 - Home page.
    - Access key 2 - Skip to content.
    - Access key 4 - Search page.
    - Access key 0 - Help (this page).

There should also be a skiplink to skip over any navigation directly to the content.

While html5 accesskey attributes may be used, care must be taken that they are functional in a representative number of browsers by the time the templates are to come into use. (Ref http://www.w3.org/TR/html5/editing.html#assigning-keyboard-shortcuts)

Details of html5 use

Before coding, agreement must be reached over choices for inclusion of elements for best dealing with browsers not fully compatible with html5. Examples are html5 enabling script and inclusion of video.

Mobile (responsive web design)

We want our new templates to work across as many mobile devices as possible. As such we favour a responsive web design approach. We think this approach offers a pragmatic way forward for serving content to multiple devices whilst not having to maintain different forks of design. Please submit alternative approaches as you see fit.

Styles

- Templates must clearly separate out markup and design. Design/styling must be controlled by stylesheets. These must be modular with common/global styles in a single file with additional stylesheets provided for the functionality of particular pages.
- Stylesheets provided should be in CSS version 2.1/3, providing that this does not adversely impact the page accessibility and in line with our spread of browser use. All pages must be readable with stylesheets disabled.
- A range of type faces must be provided for any given style, always ending with the generic font type (serif or sans serif). Fonts that are not commonly available across Windows, Unix and Mac computers must not be used.
- Please don't use tables for layout.

Character encoding

- Character encoding must be for utf-8.
- Valid HTML entities must be used for all non 7-bit ASCII characters.

Scripting (Jquery)

We're comfortable with our site using Jquery providing that the site still functions and can deliver content to our users who have Javascript disabled (or a javascript-less browser). However, please don't create templates which rely on scripting for correct display.

Metadata and search engine optimisation

We expect the templates to indicate how to integrate metadata most effectively, and to be optimised for search engines as much as possible.

Appendix B: Typekit licence and issues

Typekit licence

We purchased a 3-year Enterprise licence for unlimited site use, for code and fonts hosted on Typekit's CDN and mirrirored on our CDN, which costs $6750 per year for 50 million pageviews/month.

There is online help at the http://help.typekit.com/ site, which was useful once we'd worked out what the problem was (different styling required for use by IE) – below from http://help.typekit.com/customer/portal/articles/6855-using-multiple-weights-and-styles.

Using variation-specific names in IE 6-8

Internet Explorer 6, 7, & 8 load a maximum of four weights per family. Additionally, using two closely-related weights (e.g., 400 and 500) may result in only one weight loading correctly. Typekit serves variation-specific font-family names to those versions of the browser to work around both of these bugs.

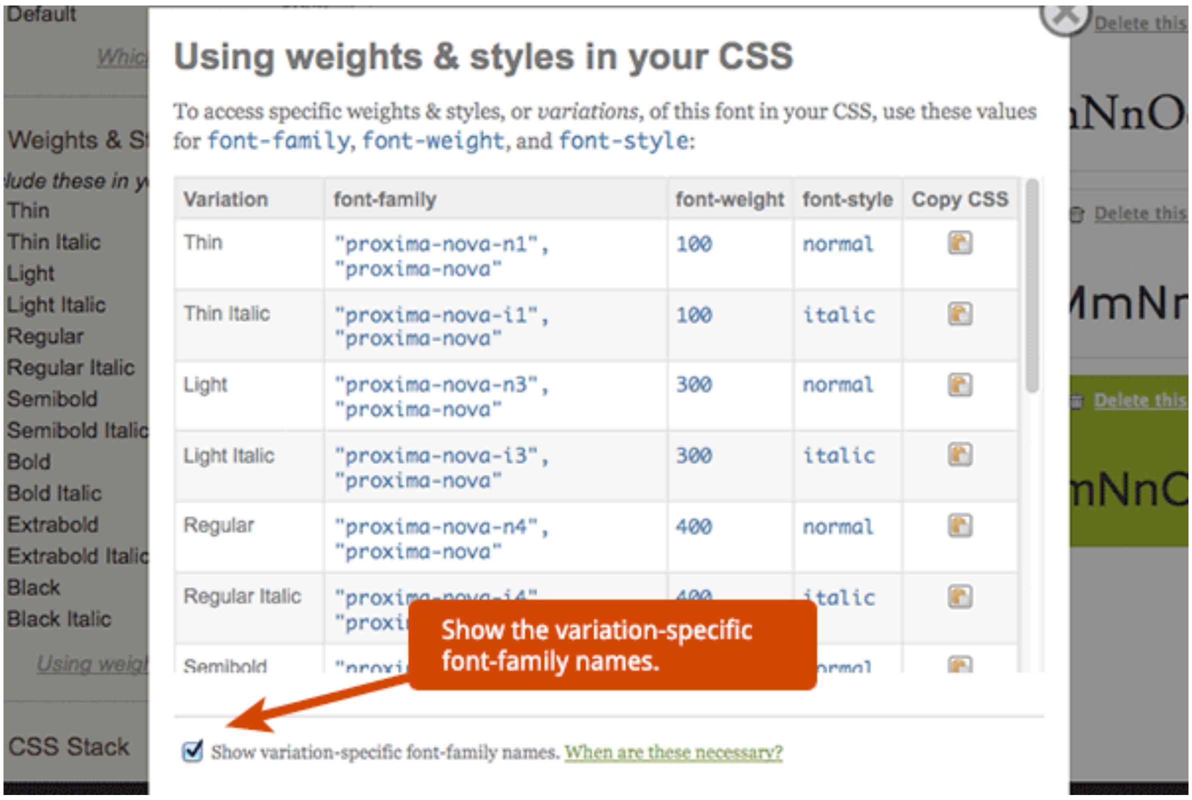
The variation-specific name should be added at the beginning of a font-family stack as needed, before the main Typekit family name:

```
#post-title {   font-family: "proxima-nova-n6", "proxima-nova", sans-serif;   font-style:
normal;   font-weight: 600; }
```

The names consist of the normal font-family name, followed by a dash, followed by a font variation description (or FVD) [http://typekit.github.io/fvd/]. For example, the variation-specific name for proxima-nova that contains only the normal 600 weight font is proxima-nova-n6.

The variation-specific name will be undefined in browsers that don't have these issues, so they will use the full family name that comes second in the stack.

You can find the appropriate variation-specific font-family name for each weight and style within the Kit Editor. Select a family on the right, then click "Using weights & styles in CSS" on the left and check the box at the bottom to show variation-specific names.



Using weights & styles in your CSS

To access specific weights & styles, or *variations*, of this font in your CSS, use these values for `font-family`, `font-weight`, and `font-style`:

Variation	font-family	font-weight	font-style	Copy CSS
Thin	"proxima-nova-n1", "proxima-nova"	100	normal	
Thin Italic	"proxima-nova-i1", "proxima-nova"	100	italic	
Light	"proxima-nova-n3", "proxima-nova"	300	normal	
Light Italic	"proxima-nova-i3", "proxima-nova"	300	italic	
Regular	"proxima-nova-n4", "proxima-nova"	400	normal	
Regular Italic	"proxi "proxi	400	italic	
Semibold	"proxi			

☑ Show variation-specific font-family names. When are these necessary?

Many users won't need to make use of these additional font-family names. You'll only need to add them if you're trying to work around any of the following issues:

Trying to use more than four weights and styles in a single family in IE 6-8

All three of the older IE browsers have a bug that limits them to four weights and styles linked to a single font-family name. In these browsers, Typekit has always filtered the enabled weights and styles down to fit within the constraints. If you want to use more than the filtered set in these browsers, you can use variation-specific font-family names to get around the limitation.

Certain weights not showing up in IE8 when used in combination with other weights

Aside from the four weights and styles limitation, IE8 has additional limitations. Certain combinations of weights don't work together when linked into the same font-family name. Using variation-specific names is a valid workaround for this problem.

Spacing randomly changing between page refreshes in IE8

When more than a single weight or style is linked to a font-family name, IE8 has a few more bugs that crop up occasionally. IE8 will sometimes randomly alter the letter spacing or line-height of fonts when any linking is used. Adding a variation-specific font-family name prevents this bug from triggering.

Fonts on the page randomly changing when using iframes in IE8

Another bug triggered by linking in IE8 causes fonts to flicker, appear, or disappear randomly when iframes are used on the page. This is commonly seen when using components that use iframes under the covers, like the Facebook “Like” button or certain modal dialogs that display content from other pages. Adding a variation-specific font-family name works here as well.