Responsive Web Design

With fluid grids for desktop, tablet and mobile.

Tim Davison
@knaboboy

A Brief History

How do we cope with users having a range of different size devices?

- The pre-design era
- The canonical screen size
- The (non) impact of mobiles
- The Epoch (25 May 2010)

A Definition

The ingredients:

- Flexible grid-based layout
- Flexible images and media
- Media queries

"Responsive Web Design"

http://www.alistapart.com/articles/responsive-web-design/ by Ethan Marcotte

Flexible Grid-based Layout

A layout based on proportions rather than absolute. Think in percentages rather than pixels.

result = target / context

```
Width: 900px;  /* of a 960 wide frame */

Width: 93.75%; /* 900px / 960px */
```

Flexible Images and Media

Images should scale with the flexible grid.

```
img {
  max-width: 100%;
}
```

Not just images but other media too.

```
img, embed, object, video { … }
```

Media Queries

Despite the fluid grid, the design will eventually fail ☹ but …

```
@media screen and (min-width: 841px) {
 … } /* 841 or larger */

@media screen and (max-width: 480px) {
… } /* 480 or smaller */
```

Content-based break-points.

Another Definition

"Our understanding of 'responsive design' should be broadened to cover any approach that delivers elegant visual experiences regardless of the size of the user's display and the limitations or capabilities of the device."

Jeffrey Zeldman 06/07/2011

Adaptive Web Design

- Fixed layouts and image sizes.
- Pros and Cons.

"An advantage of a responsive approach is that, regardless of what the break points are, things will generally work _in between_ them".

Dan Cederholm 29/12/2011

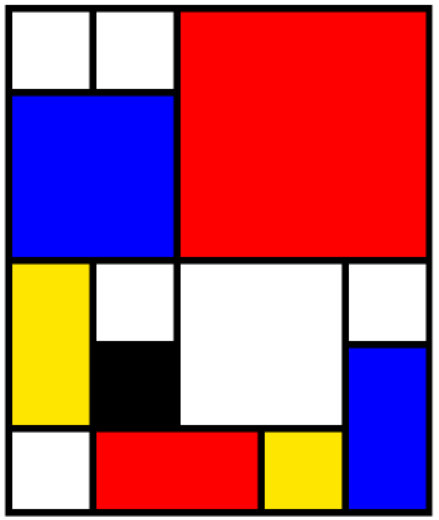
FAQ

- What is the relationship between Responsive Web Design and designing for a mobile user?
- When should we start making our designs responsive?

Designing With Grids

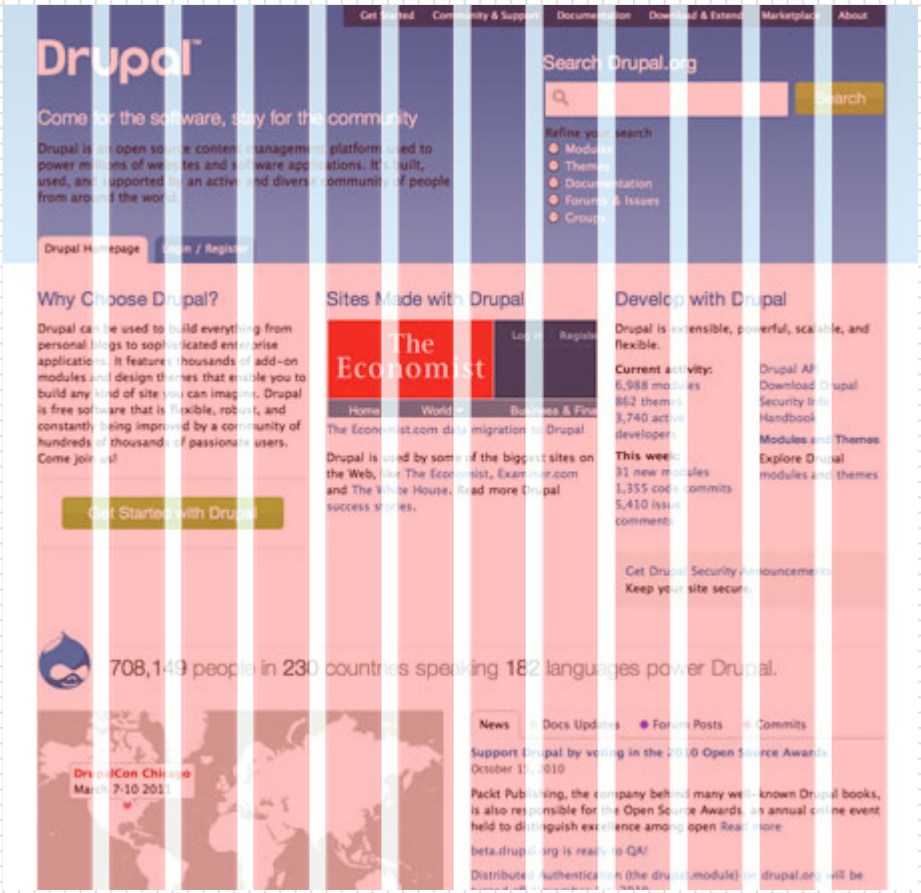
Why use a grid?

- Harmony, consistency, clarity.
- Order adds to the credibility of the design.
- Promotes collaboration.
- Not quite a blank canvas.



Grid Systems for the Web

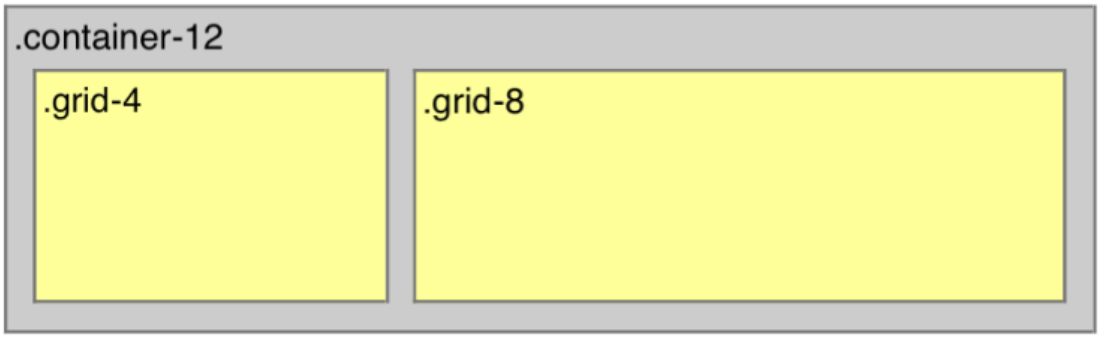
- Design tool
- Column based
- CSS framework
- e.g. 960gs



960 grid system: http://960.gs/ by Nathan Smith

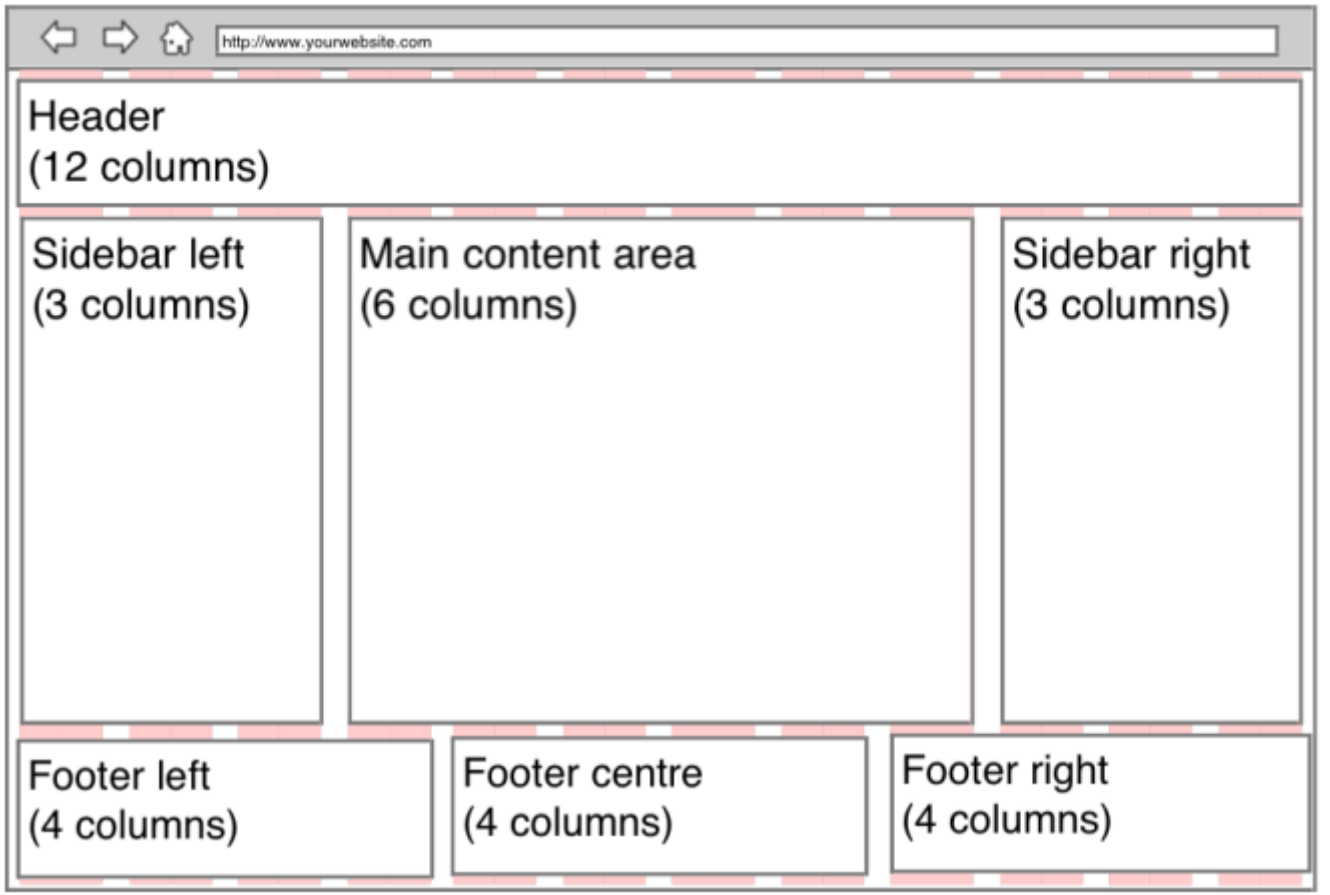
The 960 Grid System

- Available as a Drupal base theme
- CSS framework for template files
- 12 or 16 columns, fixed 960px
- Container classes - `.container-12`
- Grid classes - `.grid-4`



960 base theme: http://drupal.org/project/ninesixty

Sample Wireframe



960 Supporting Classes

- Push / pull classes can alter the display order within a row. - `.push-3, .pull-5`
- Prefix / suffix classes allow space between columns. - `.prefix-1, .suffix-3`
- Alpha / Omega classes allow grids to be nested. - `.alpha, .omega`

But what about responsive web design?

DETAMO

A base theme which lets you design your layout on 3 separate fluid grids.

- Desktop with 12 columns
- Tablet with 8 columns
- Mobile with 4 columns

Media queries are used to switch between the grids.

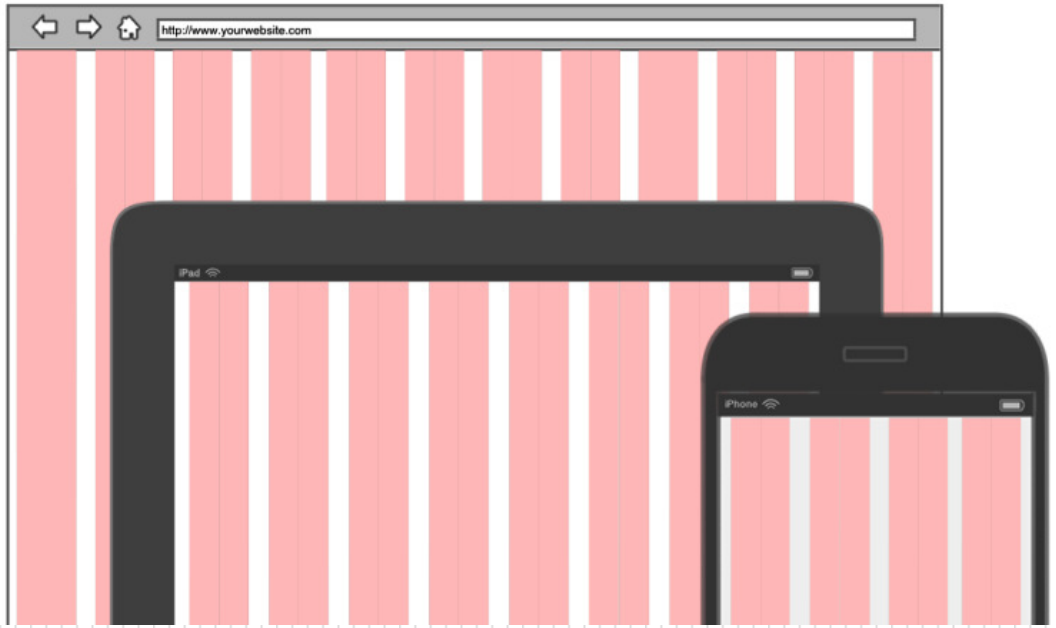
Detamo base theme: http://drupal.org/project/detamo

The 3 Grids

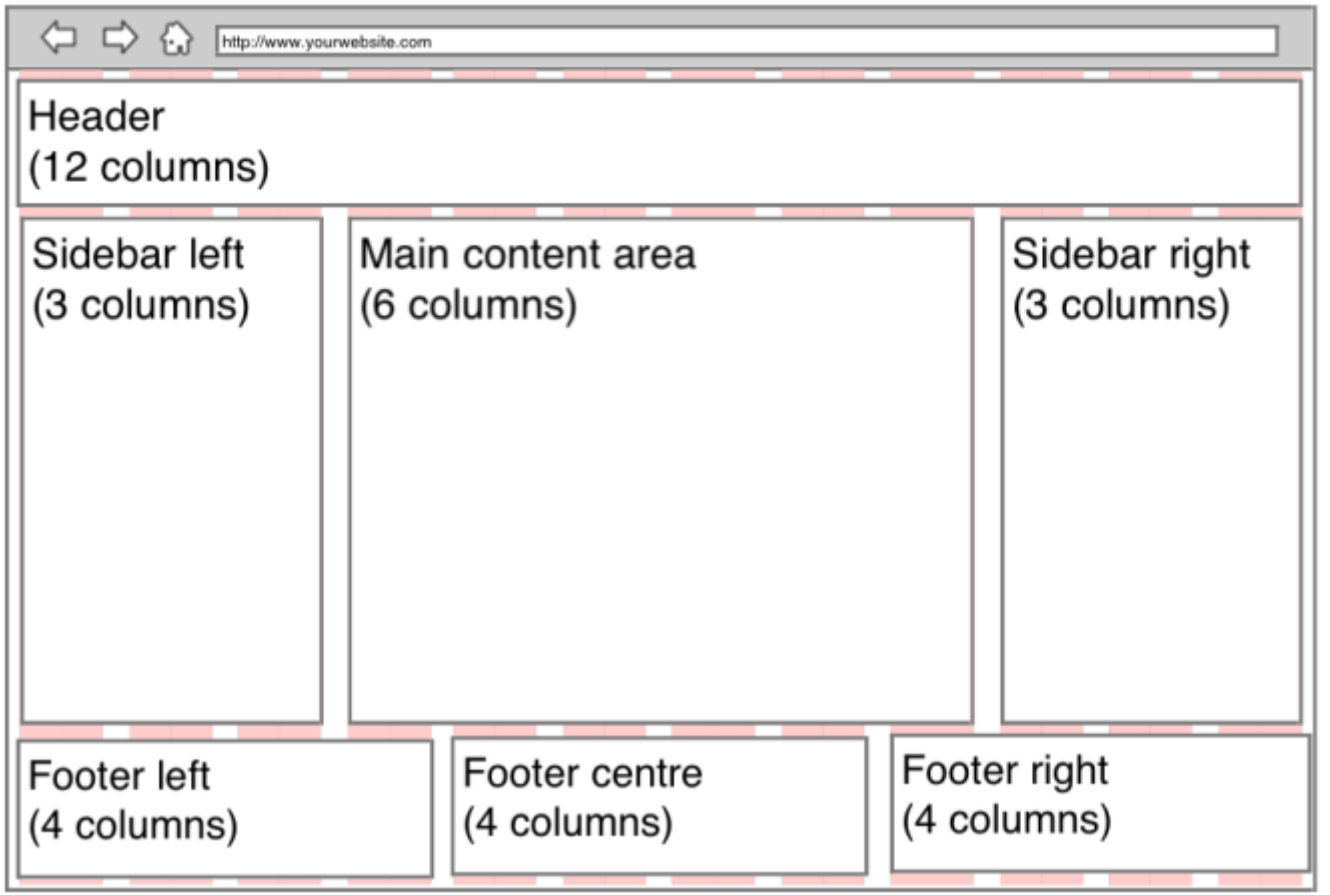
All columns are 60px with 10px gutters on each side.

Nominal sizes

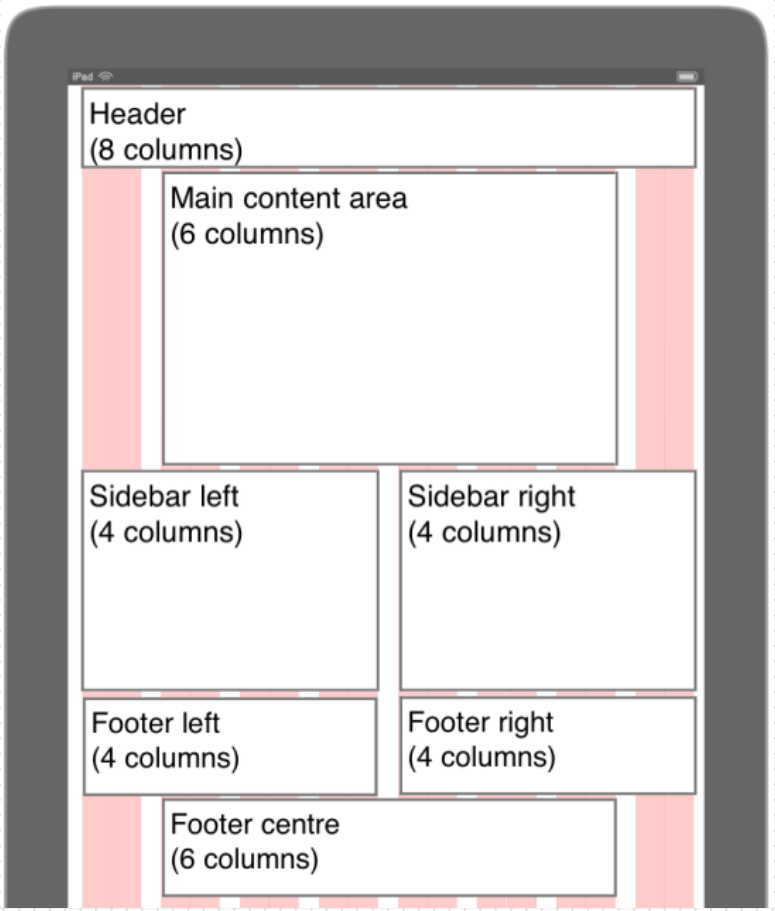
- 960px
- 640px
- 320px



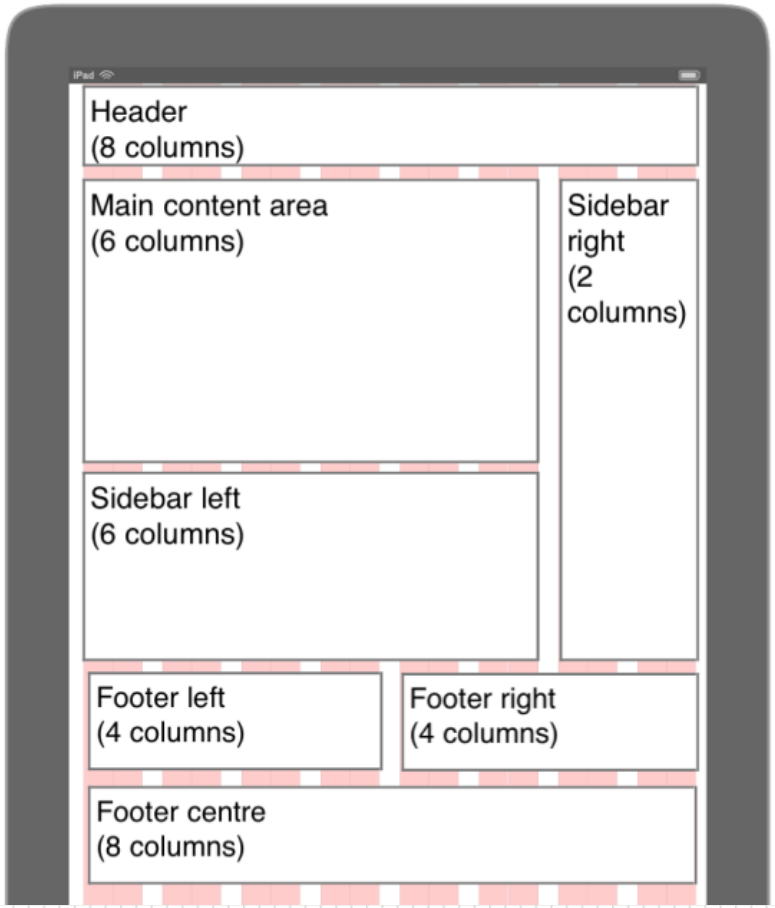
Desktop Wireframe



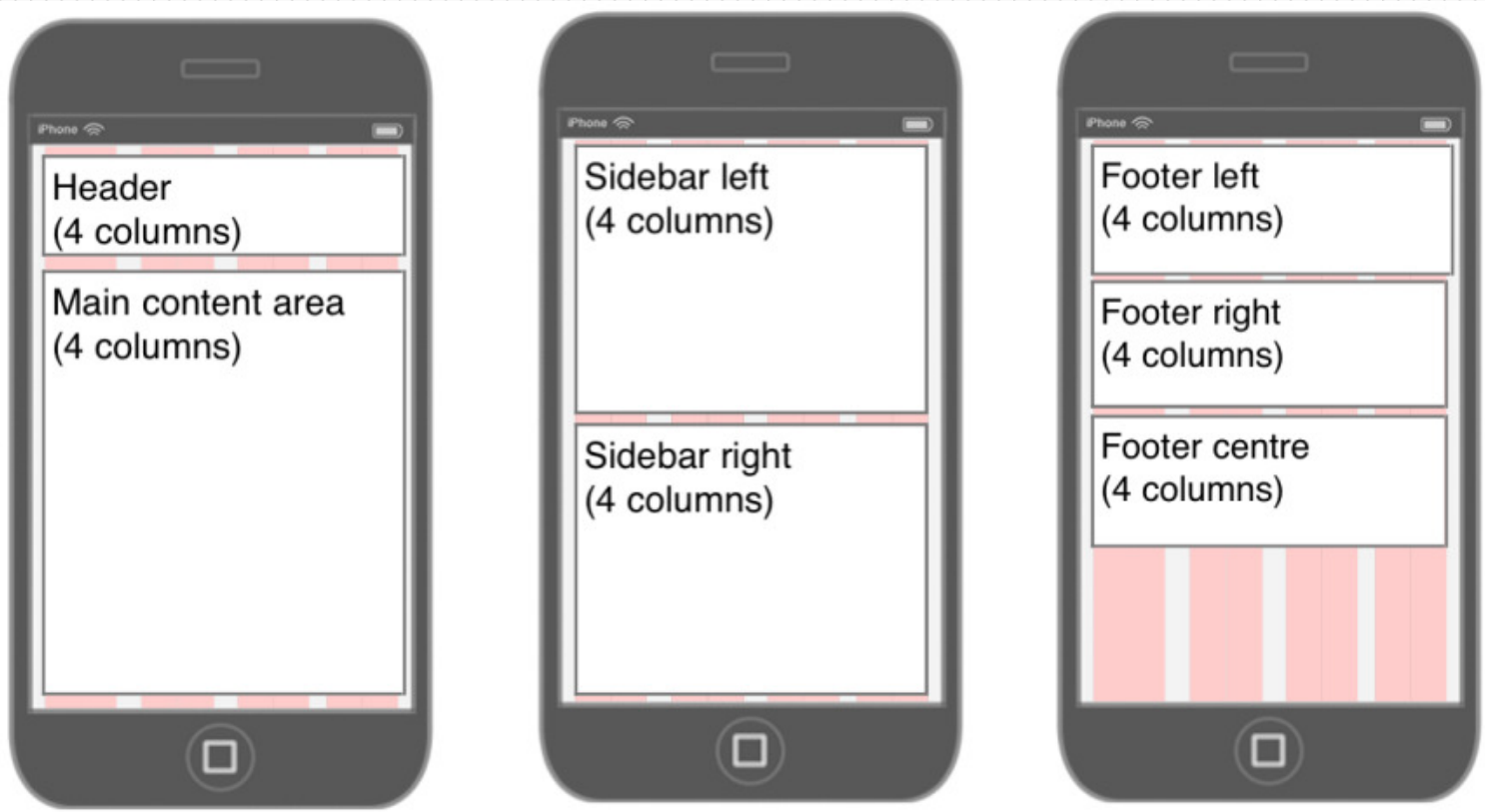
Tablet Wireframe



or



Mobile Wireframe



The CSS

Container classes

```
.full{
 …
} /*centres content and sets fluid width*/
```

Grid classes

```
.mobile-1 .mobile-2 … .mobile-4
.tablet-1 .tablet-2 … .tablet-8
.desktop-1 .desktop-2 … .desktop-12

.tablet-1 { width: 9.375%; }
```

Supporting Classes

Push and pull

```
.tablet-push-4 {left: 50%;}
.desktop-pull-1 {left: -8.33333%;}
```

Prefix and suffix

```
.tablet-prefix-1 {padding-left: 12.5%;}
.desktop-suffix-6 {padding-right: 50%;}
```

Hiding

```
.tablet-hidden {display: none !important;}
.mobile-hidden {display: none !important;}
```

Nested Grid Classes

```
.mobile-2-of-4
.tablet-3-of-6
.desktop-5-of-8

.tablet-2-of-8 {
  margin-left: 1.6129%;
  margin-right: 1.6129%;
  width: 22.5806452%;
}

/* Removes margins as 960 */
.desktop-alpha
.tablet-omega
```

The HTML

Your page.tpl.php might have…

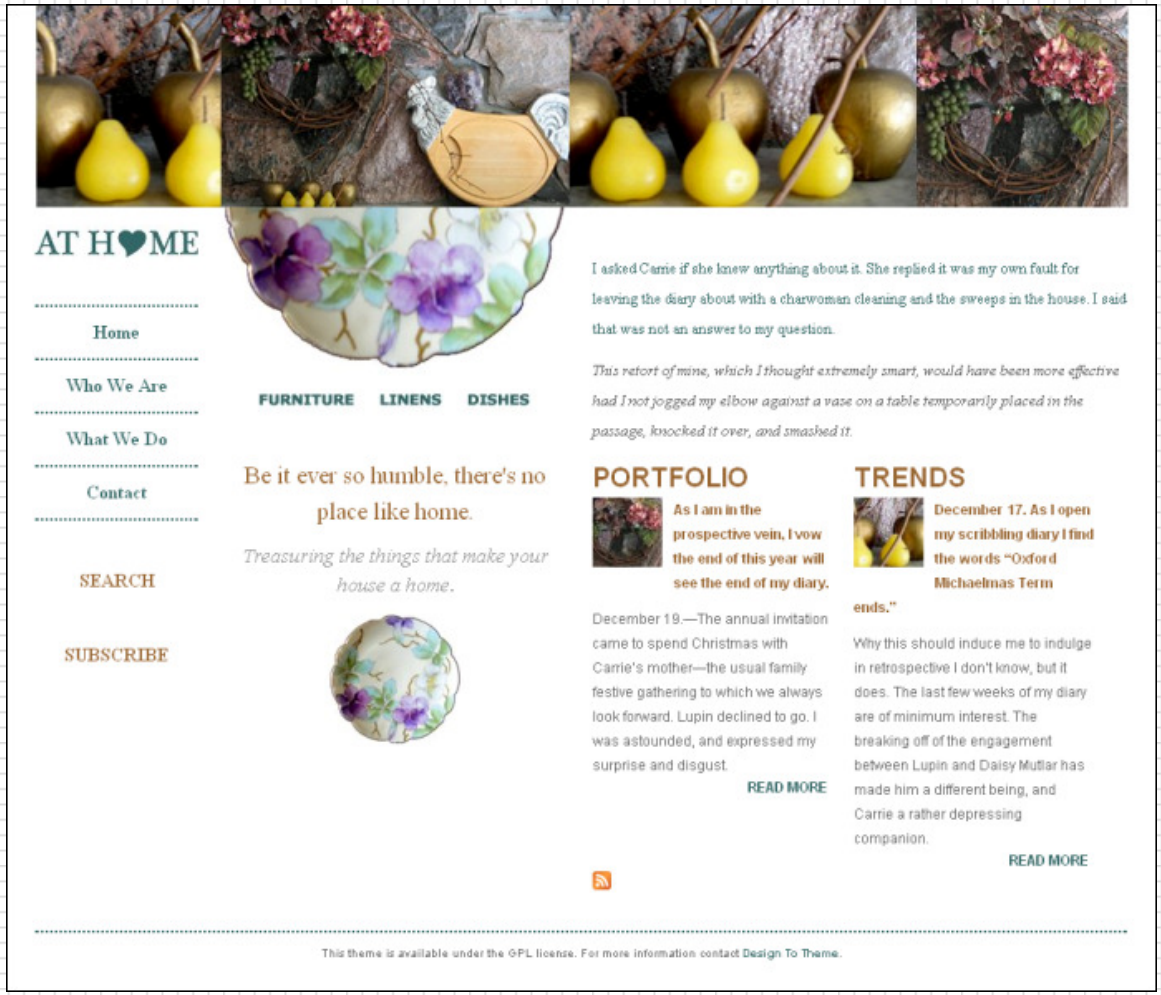
```
…
<div id="sidebar-left"
  class="desktop-3 tablet-4 mobile-4">
  <?php print render($page['sidebar_first']);?>
</div>
…
```

Only one grid is active at any time.

What about?

- Feature phones
- Internet Explorer

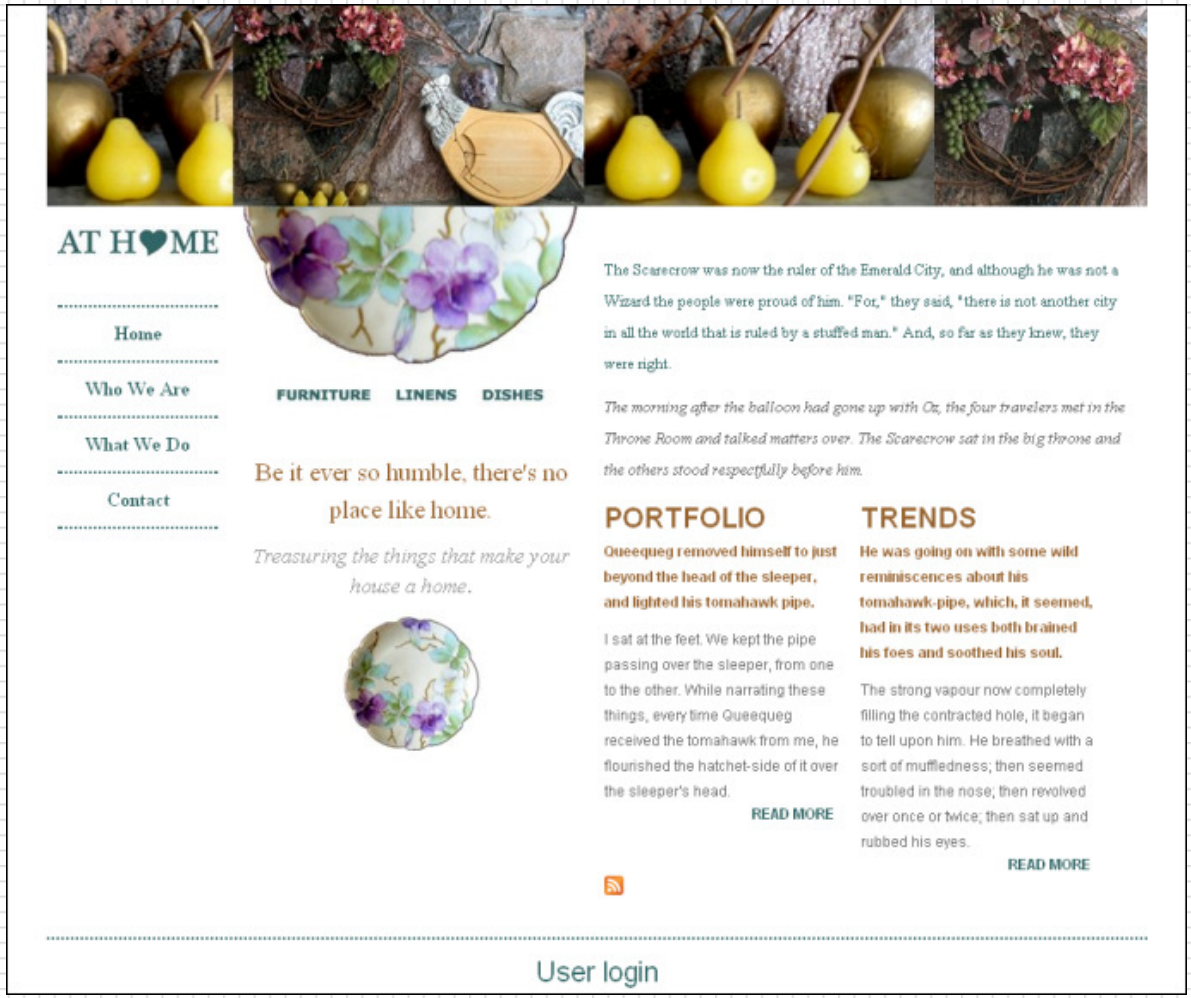
An Example



Take an existing 960 based theme.

Domicile theme: http://drupal.org/project/domicile by emmajane

Replace Grid Classes



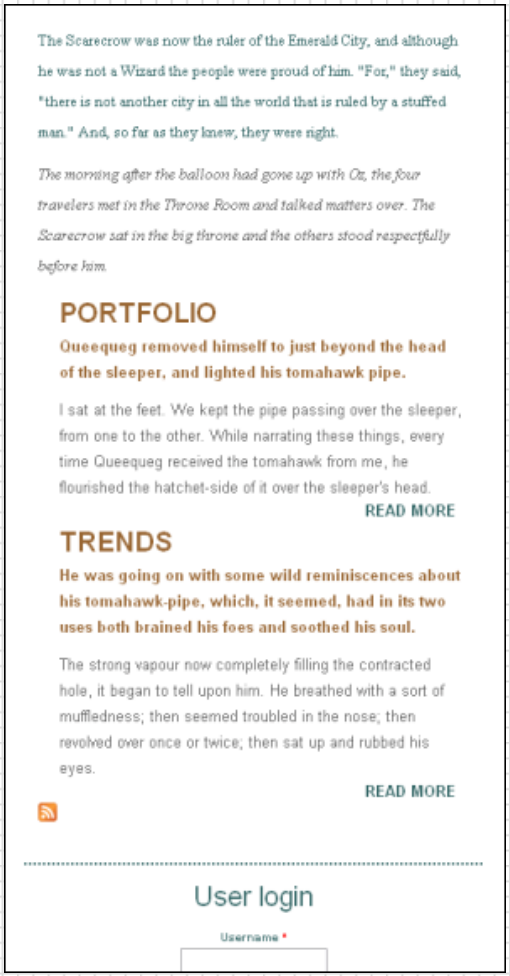
- .grid-n

+ .desktop-n

Demo site: http://bit.ly/tSgUDQ

Add Tablet Classes

Add Mobile Classes



Finish Off

- Troubleshoot layout
- Tweak CSS as required

And that’s all there is to do to make a fixed width layout responsive.

Finally

Any Questions?

Tim Davison
@knaboboy