

JOURNEY

INTO

MOBILE



FOUNDATIONS FOR MOBILE

- LEVEL 1 -

FOUNDATIONS FOR MOBILE

What is the Mobile Web?

Course Overview

Relative Font-Sizing



LEVEL 1

THERE IS NO MOBILE WEB



LEVEL 1



Image Courtesy of Brad Frost

<http://bradfrostweb.com/blog/web/responsive-web-design-missing-the-point/>



LEVEL 1

THIS IS THE WEB.



Image Courtesy of Brad Frost

<http://bradfrostweb.com/blog/web/responsive-web-design-missing-the-point/>

JOURNEY

INTO

MOBILE

LEVEL 1

WHAT IS THE MOBILE WEB?

"The primary design principle underlying the Web's usefulness and growth is universality."

(Tim Berners-Lee)



LEVEL 1

WHAT IS THE MOBILE WEB?

- **Must work with any form of information**
- **Accessible from any device.**



LEVEL 1

THIS WILL BE THE WEB.



Image Courtesy of Brad Frost

<http://bradfrostweb.com/blog/web/responsive-web-design-missing-the-point/>

JOURNEY

INTO

MOBILE

LEVEL 1

WHAT IS THE MOBILE WEB?

Mobile Design
Adaptive Design
Responsive Design

=

WEB DESIGN



LEVEL 1

COURSE OVERVIEW

In this course, we'll cover:

1. Fluid Layouts

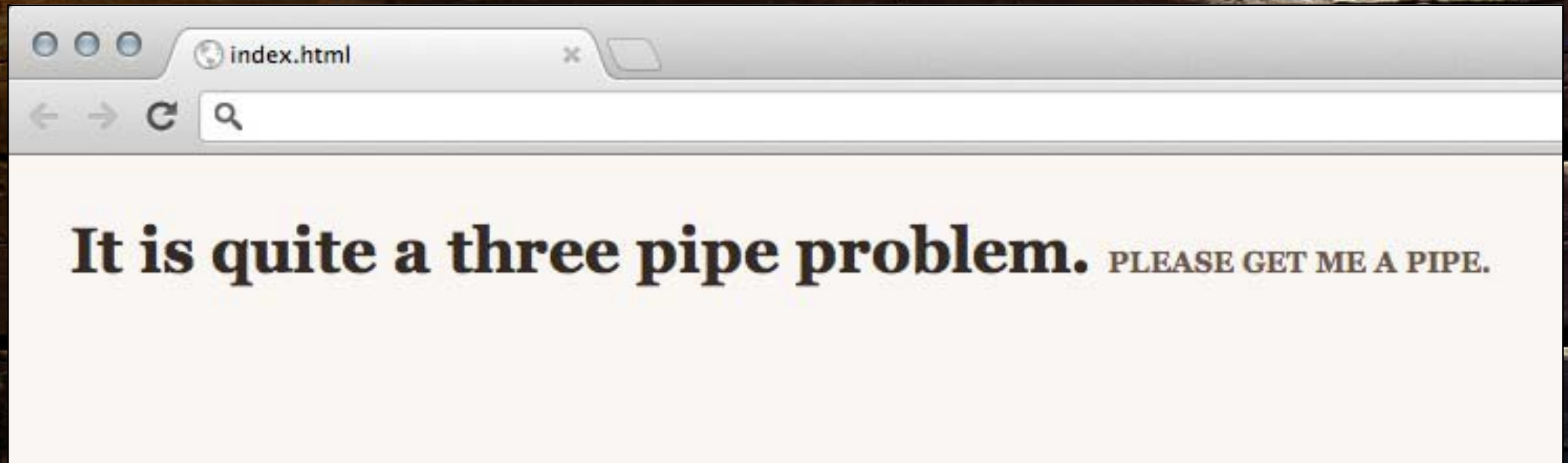
2. Adaptive Design

3. Responsive Design



LEVEL 1

FLUID LAYOUTS



LEVEL 1

FLUID LAYOUTS

<h1>

It is quite a three pipe problem.

[Please get me a pipe.](#)

</h1>



LEVEL 1

FLUID LAYOUTS

```
h1 {  
  font-size: 30px;  
  font-weight: bold;  
}
```


FLUID LAYOUTS

pixels → **ems**

FLUID LAYOUTS

```
html {  
  font-size: 16px;  
}  
  
body {  
  color: #352a25;  
  font-family: Georgia, serif;  
  font-size: 62.5%; /* 1em = 10px */  
}
```


FLUID LAYOUTS

$$\text{target} \div \text{context} = \text{result}$$

target font size

font size of containing element



LEVEL 1

FLUID LAYOUTS

target ÷ **context** = result

30px ÷ **10px** = 3em

<h1> font size

default browser font size

JOURNEY

INTO

MOBILE

LEVEL 1

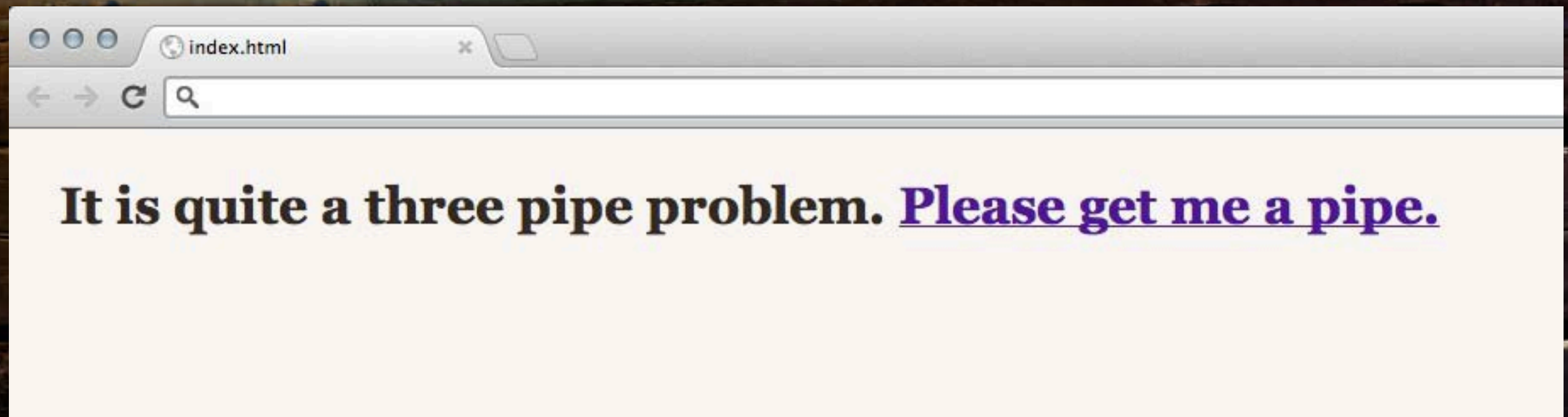
FLUID LAYOUTS

```
h1 {  
  font-size: 3em; /* 30px/10px */  
  font-weight: bold;  
}
```



LEVEL 1

FLUID LAYOUTS



LEVEL 1

FLUID LAYOUTS

```
h1 a {  
  font-size: 14px; ← need to convert  
  text-transform: uppercase;  
  text-decoration: none;  
  color: #6C564B;  
}
```

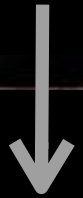


LEVEL 1

FLUID LAYOUTS

target ÷ **context** = result

14px ÷ **10px** = 1.4em

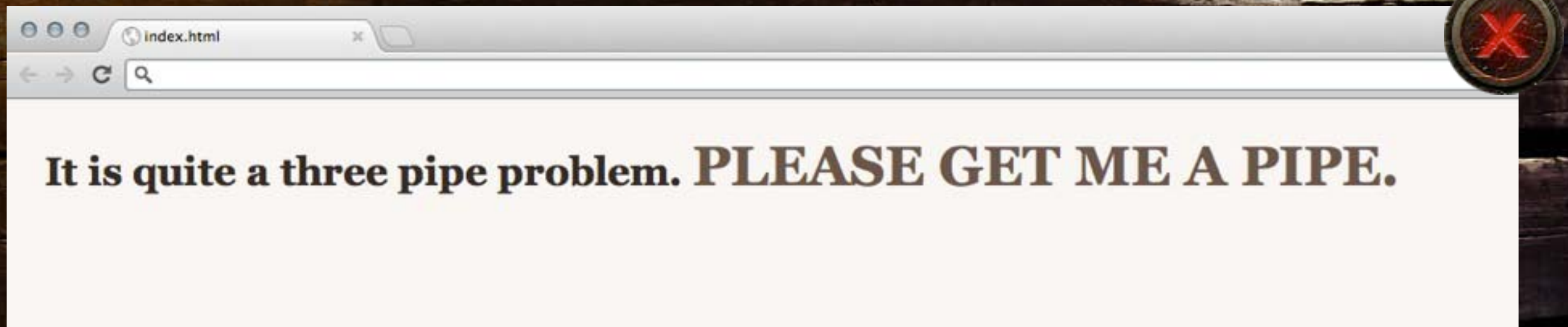


?



LEVEL 1

FLUID LAYOUTS



LEVEL 1

FLUID LAYOUTS

target ÷ **context** = result

14px ÷ **30px** = 0.4666667em

<h1> font size is the correct context



LEVEL 1

FLUID LAYOUTS

```
h1 a {  
  font-size: 0.46666667em; /* 14px/30px */  
  text-transform: uppercase;  
  text-decoration: none;  
  color: #6C564B;  
}
```



LEVEL 1

FLUID LAYOUTS



LEVEL 1

FLUID LAYOUTS

target ÷ **context** = result

14px ÷ **30px** = **0.46666667em**

```
h1 a {  
  font-size: 0.46666667em; /* 14px/30px */  
  text-transform: uppercase;  
  text-decoration: none;  
  color: #6C564B;  
}
```

Note: No need to round



LEVEL 1

FLUID LAYOUTS

- LEVEL 2 -

FLUID LAYOUTS

Fluid Foundations

The Fluid Grid



LEVEL 2

FLUID FOUNDATIONS

Fluid Layouts: Layouts that scale

Fixed Layouts: Layouts that are static



LEVEL 2

FLUID FOUNDATIONS

What Makes A Fluid Site?

- Fluid Grid

A promotional banner for BarCamp Orlando. The top left features the BarCamp logo, which includes a stylized blue bird-like shape and the word "barcamp" in a lowercase, sans-serif font, with "orlando" in a smaller font above the "p". To the right of the logo is a green button with the text "REGISTER NOW, IT'S FREE!". Below the logo is a video player with a play button icon and the text "PLAY VIDEO". The video player shows a scene from the event, with people at a bar and a large screen in the background. To the right of the video player is a dark grey box with the text "Saturday, April 14th" and "9:30 AM - 6:00 PM". Below this is a quote: "Born from the desire to share and learn in an open environment, BarCamp Orlando is back and better than ever." In the top right corner, there are social media links for "Tweet" (233) and "Like" (420).

orlando **barcamp**

REGISTER NOW, IT'S FREE!

PLAY VIDEO

Saturday, April 14th
9:30 AM - 6:00 PM

*Born from the desire to share and learn in an open environment,
BarCamp Orlando is back and better than ever.*

5TH ANNUAL

What is it?

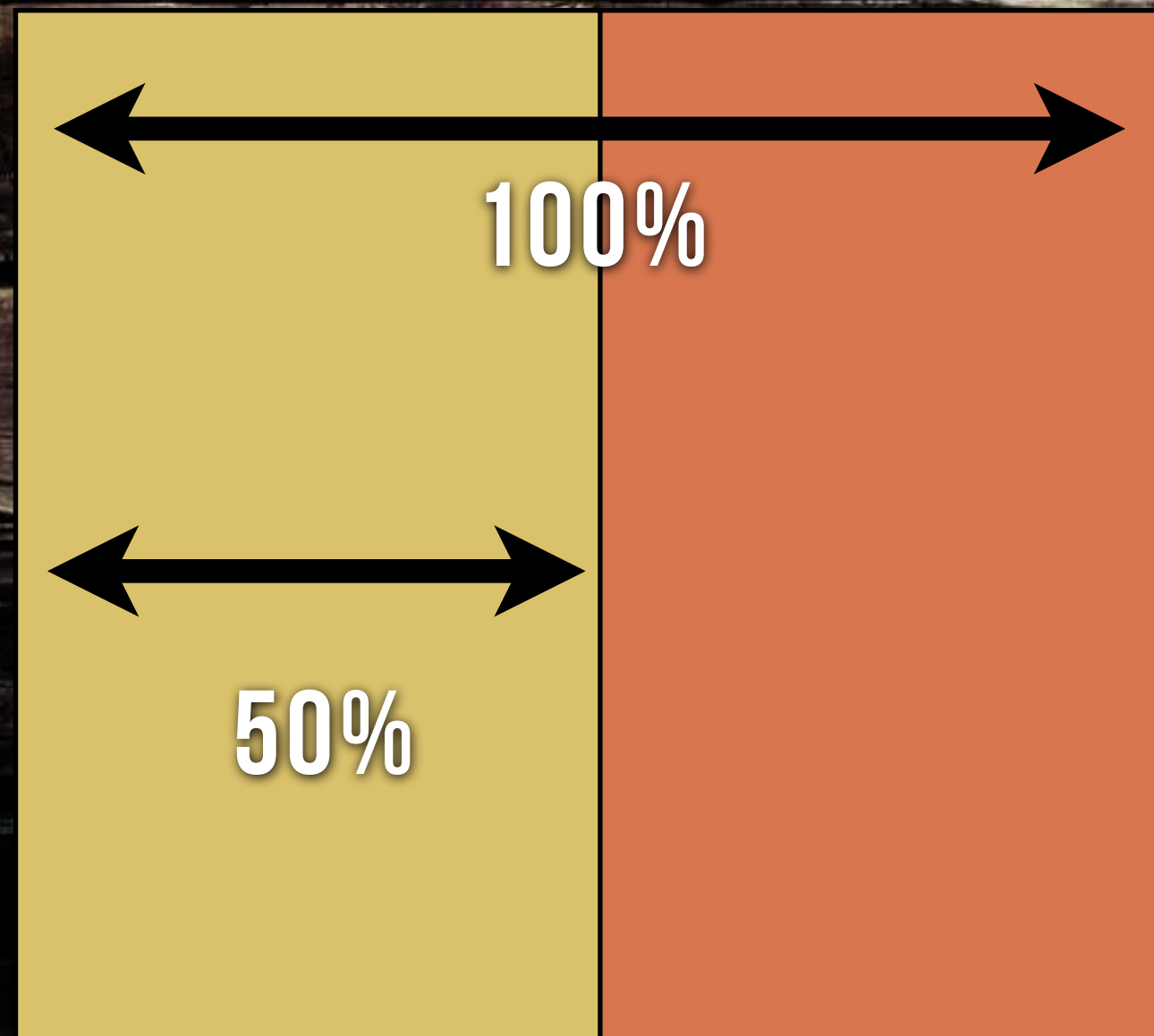
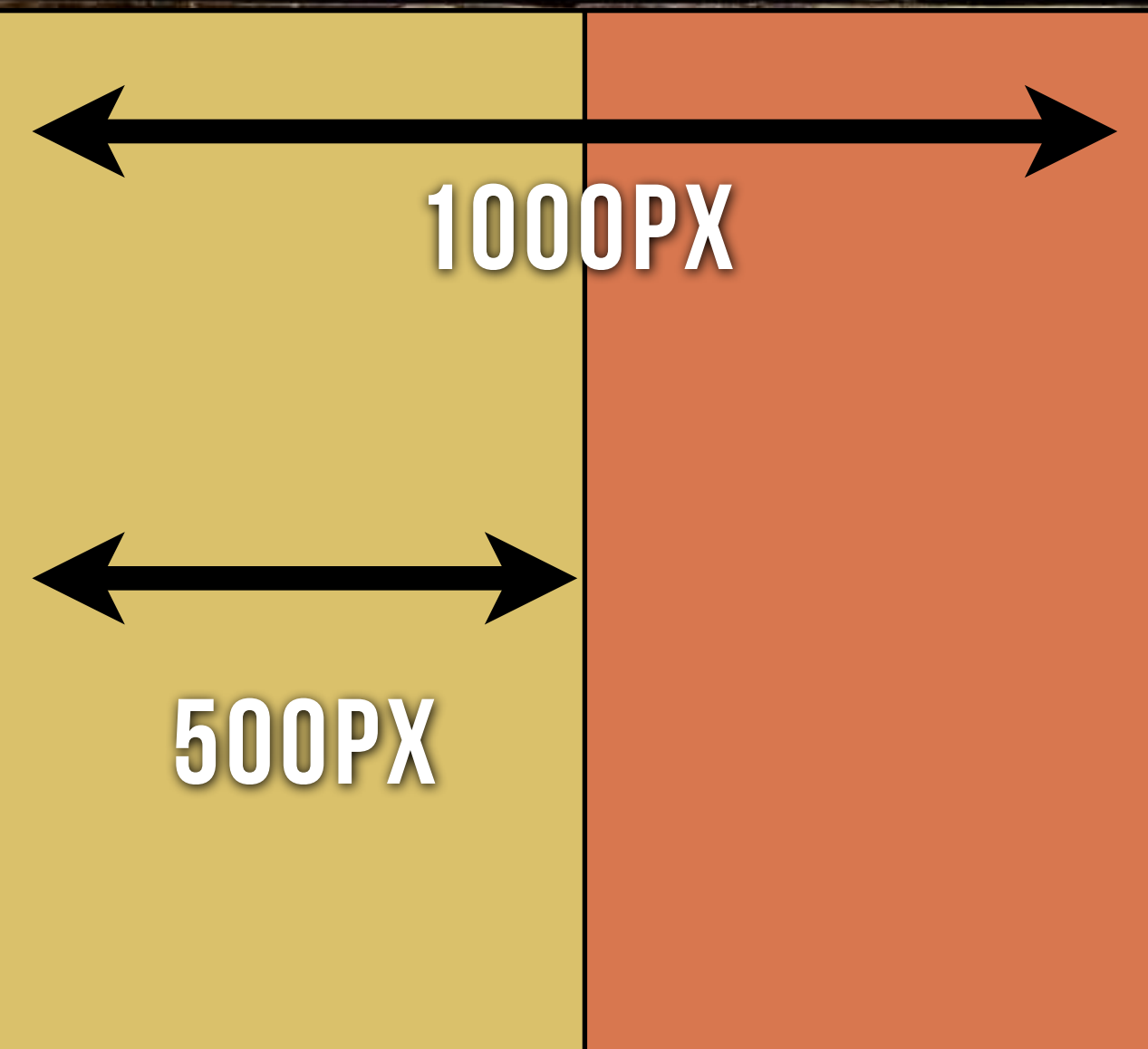
VENUE & TIMES

Saturday, April 14th, 2012

FLUID FOUNDATIONS

What Makes A Fluid Site?

- Fluid Grid
- Relative Values (percentages)



FLUID FOUNDATIONS

GRIMPEN MIRE

BED & BREAKFAST

- est. 1901 -

LOCATION

ABOUT US

RESERVATIONS

PHOTOS

Photo by Sidney Paget
Words by Sir Arther Conan Doyle
from *The Hound of the Baskervilles*

"It is a wonderful place, the moor..."

"You never tire of the moor. You cannot think the wonderful secrets which it contains. It is so vast, and so barren, and so mysterious." "You know it well, then?" "I have only been here two years. The residents would call me a newcomer. We came shortly after Sir Charles settled.

But my tastes led me to explore every part of the country round, and I should think that there are few men who know it better than I do." "Is it hard to know?" "Very hard. You see, for example, this great plain to the north here with the queer hills breaking out of it. Do you observe anything remarkable about that?"

"It would be a rare place for a gallop." "You would naturally think so and the thought has cost several their lives before now. You notice those bright green spots scattered thickly over it?" "Yes, they seem more fertile than the rest." Stapleton laughed.

"That is the great Grimpen Mire," said he. "A false step yonder means death to man or beast. Only yesterday I saw one of the moor ponies wander into it. He never came out. I saw his head for quite a long time craning out of the bog-hole, but it sucked him down at last. Even in dry seasons it is a danger to cross it, but after these autumn rains it is an awful place. And yet I can find my way to the very heart of it and return alive. By George, there is another of those miserable ponies!"



JACK STAPLETON

Proprietor

Here on the moor we are homely folk and do not wait for formal introductions. You may possibly have heard my name from our mutual friend, Mortimer. I am Stapleton, of Merripit House.

FLUID FOUNDATIONS

target ÷ **context** = **result**



Remember our handy little formula?



LEVEL 2

FLUID FOUNDATIONS

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But my tastes led me to explore every part of the country round, and I should think that there are few men who know it better than I do." "Is it hard to know?" "Very hard. You see, for example, this great plain to the north here with the queer hills breaking out of it. Do you observe anything remarkable about that?"

"It would be a fine place for a camp. You would naturally think so and the thought has come even into my mind before now. Do you notice those bright green spots scattered thickly over it?" "Yes, they seem more fertile than the rest." Stapleton laughed.

"That is the great Grimpen Mire," said he. "A false step yonder means death to man or beast. Only yesterday I saw one of the moor ponies wander into it. He never came out. I saw his head for quite a long time craning out of the bog-hole, but it sucked him down at last. Even in dry seasons it is a danger to cross it, but after these autumn rains it is an awful place. And yet I can find my way to the very heart of it and return alive. By George, there is another of those miserable ponies!"



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FLUID FOUNDATIONS

GRIMPEN MIRE

BED & BREAKFAST

— EST. 1901 —

LOCATION

ABOUT
.sidebar

RESERVATIONS

PHOTOS

Photo by Sidney Paget
Words by Sir Arthur Conan Doyle
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"You never tire of the moor. You cannot think the wonderful secrets which it contains. It is so vast, and so barren, and so mysterious." "You know it well, then?" "I have only been here two years. The residents would call me a newcomer. We came shortly after Sir Charles settled.

But my tastes led me to explore every part of the country round, and I should think that there are few men who know it better than I do." "Is it hard to know?" "Very hard. You see, for example, this great plain to the north here with the queer hills breaking out of it. Do you observe anything remarkable about that?"

"It would be a rare place for a gallop." "You would naturally think so and the thought has cost several their lives before now. You notice those bright green spots scattered thickly over it?" "Yes, they seem more fertile than the rest." Stapleton laughed.

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But my tastes led me to explore every part of the country round, and I should think that there are few men who know it better than I do." "Is it hard to know?" "Very hard. You see, for example, this great plain to the north here with the queer hills breaking out of it. Do you observe anything remarkable

.content

"It would be a rare place for a gallop." "You would naturally think so and the thought has cost several their lives before now. You notice those bright green spots scattered thickly over it?" "Yes, they seem more fertile than the rest." Stapleton laughed.

"That is the great Grimpen Mire," said he. "A false step yonder means death to man or beast. Only yesterday I saw one of the moor ponies wander into it. He never came out. I saw his head for quite a long time craning out of the bog-hole, but it sucked him down at last. Even in dry seasons it is a danger to cross it, but after these autumn rains it is an awful place. And yet I can find my way to the very heart of it and return alive. By George, there is another of those miserable ponies!"



JACK STAPLETON

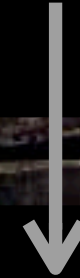
Proprietor

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THE FLUID GRID

```
<div class="site"></div>
```

```
.site {  
  margin: 40px auto;  
  width: 940px;  
}
```



```
.site {  
  margin: 40px auto;  
  width: 90%;  
}
```



THE FLUID GRID

```
.site {  
  margin: 40px auto;  
  width: 940px;  
}
```

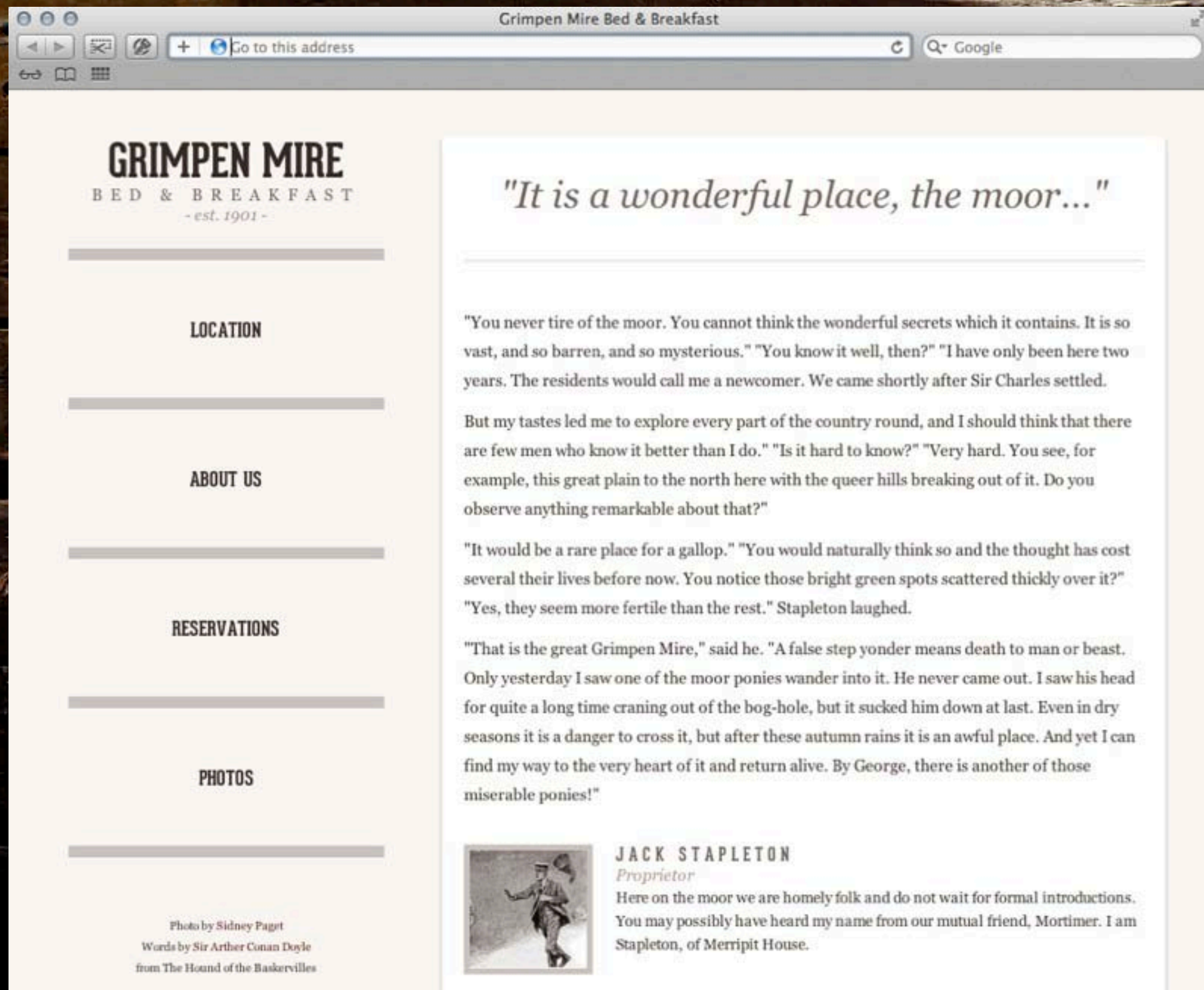


```
.site {  
  margin: 40px auto;  
  width: 90%;  
}
```

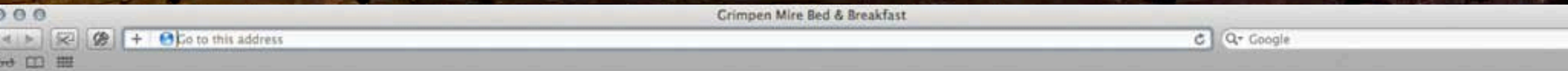


LEVEL 2

THE FLUID GRID



THE FLUID GRID



GRIMPEN MIRE

BED & BREAKFAST
- est. 1901 -

LOCATION

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RESERVATIONS

PHOTOS

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But my tastes led me to explore every part of the country round, and I should think that there are few men who know it better than I do." "Is it hard to know?" "Very hard. You see, for example, this great plain to the north here with the queer hills breaking out of it. Do you observe anything remarkable about that?"

"It would be a rare place for a gallop." "You would naturally think so and the thought has cost several their lives before now. You notice those bright green spots scattered thickly over it?" "Yes, they seem more fertile than the rest." Stapleton laughed.

"That is the great Crimpen Mire," said he. "A false step yonder means death to man or beast. Only yesterday I saw one of the moor ponies wander into it. He never came out. I saw his head for quite a long time craning out of the hog-hole, but it sucked him down at last. Even in dry seasons it is a danger to cross it, but after these autumn rains it is an awful place. And yet I can find my way to the very heart of it and return alive. By George, there is another of those miserable ponies!"



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Proprietor

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FLUID FOUNDATIONS

```
<section class="sidebar">
  <header>
  </header>

  <nav>
    <ul class="menu">
    </ul>
  </nav>

  <footer>
  </footer>
</section>
```

GRIMPEN MIRE

BED & BREAKFAST

- est. 1901 -

LOCATION

ABOUT US

RESERVATIONS

PHOTOS

Photo by Sidney Paget
Words by Sir Arther Conan Doyle
from *The Hound of the Baskervilles*

"It is a

.....
"You never tire of
so vast, and so bar
two years. The res
settled.

But my tastes led m
there are few men
for example, this g
observe anything m

"It would be a rare
cost several their l
it?" "Yes, they seem

"That is the great C
beast. Only yester
his head for quite a
Even in dry season
place. And yet I ca
another of those m



FLUID FOUNDATIONS

```
.sidebar {  
  float: left;  
  text-align: center;  
  width: 305px;  
}
```



LEVEL 2

THE FLUID GRID

target ÷ context = result

305px ÷ 940px = 0.32446809

Our sidebar width

Width of <div class="site">



LEVEL 2

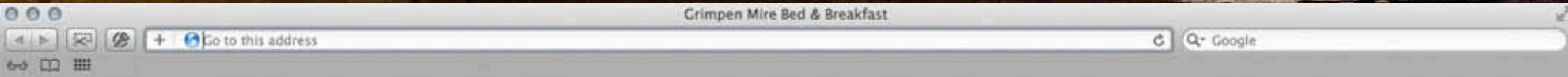
THE FLUID GRID

```
.sidebar {  
  float: left;  
  text-align: center;  
  width: 32.446809%; /* 305px/940px */  
}
```



LEVEL 2

THE FLUID GRID



GRIMPEN MIRE

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- est. 1901 -

LOCATION

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Photo by Sidney Paget
Words by Sir Arthur Conan Doyle
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"You never tire of the moor. You cannot think the wonderful secrets which it contains. It is so vast, and so barren, and so mysterious." "You know it well, then?" "I have only been here two years. The residents would call me a newcomer. We came shortly after Sir Charles settled.

But my tastes led me to explore every part of the country round, and I should think that there are few men who know it better than I do." "Is it hard to know?" "Very hard. You see, for example, this great plain to the north here with the queer hills breaking out of it. Do you observe anything remarkable about that?"

"It would be a rare place for a gallop." "You would naturally think so and the thought has cost several their lives before now. You notice those bright green spots scattered thickly over it?" "Yes, they seem more fertile than the rest." Stapleton laughed.

"That is the great Grimpen Mire," said he. "A false step yonder means death to man or beast. Only yesterday I saw one of the moor ponies wander into it. He never came out. I saw his head for quite a long time craning out of the bog-hole, but it sucked him down at last. Even in dry seasons it is a danger to cross it, but after these autumn rains it is an awful place. And yet I can find my way to the very heart of it and return alive. By George, there is another of those miserable ponies!"



JACK STAPLETON

Proprietor

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FLUID FOUNDATIONS

```
<section class="content">
  <aside></aside>

  <p></p>

  <footer class="stapleton">
    <div class="pic">
    </div>
    <div class="bio">
    </div>
  </footer>
</section>
```

"It is a wonderful place, the moor"

"You never tire of the moor. You cannot think the wonderful secrets which it contains so vast, and so barren, and so mysterious." "You know it well, then?" "I have only been here two years. The residents would call me a newcomer. We came shortly after Sir C. settled.

But my tastes led me to explore every part of the country round, and I should think there are few men who know it better than I do." "Is it hard to know?" "Very hard. For example, this great plain to the north here with the queer hills breaking out here and there, to observe anything remarkable about that?"

"It would be a rare place for a gallop." "You would naturally think so and the thought has cost several their lives before now. You notice those bright green spots scattered here and there?" "Yes, they seem more fertile than the rest." Stapleton laughed.

"That is the great Grimpen Mire," said he. "A false step yonder means death to man or beast. Only yesterday I saw one of the moor ponies wander into it. He never came out, and his head for quite a long time craning out of the bog-hole, but it sucked him down. Even in dry seasons it is a danger to cross it, but after these autumn rains it is a very dangerous place. And yet I can find my way to the very heart of it and return alive. By George, I am not another of those miserable ponies!"



JACK STAPLETON

Proprietor

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FLUID FOUNDATIONS

```
.content {  
  background-color: #fff;  
  box-shadow: 0px 3px 4px rgba(0, 0, 0, .3);  
  margin-left: 325px;  
  padding: 20px;  
  width: 590px;  
}
```



LEVEL 2

THE FLUID GRID

target ÷ context = result

590px ÷ 940px = 0.62765957

Our .content width

Width of <div class="site">



LEVEL 2

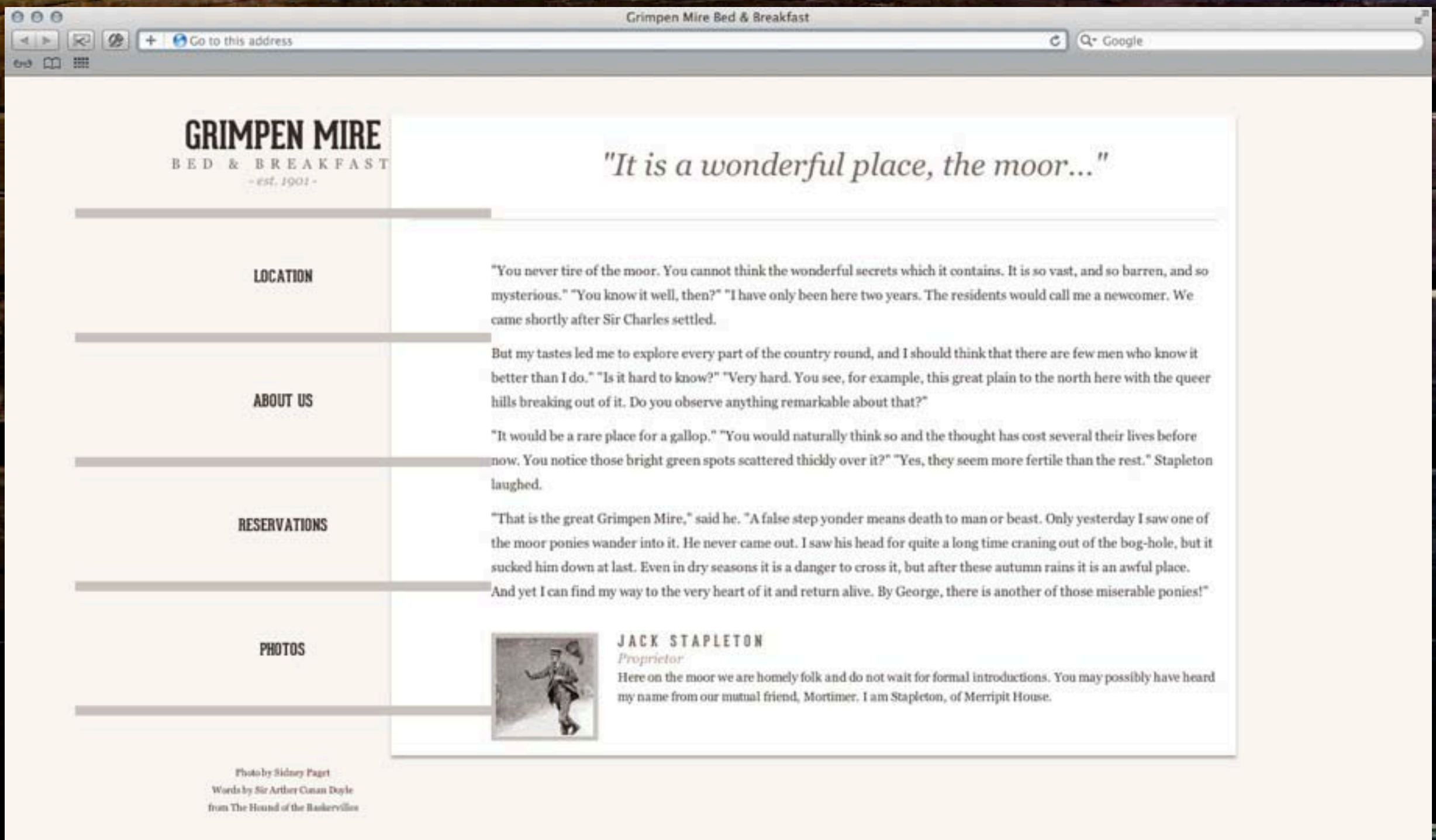
THE FLUID GRID

```
.content {  
  background-color: #fff;  
  box-shadow: 0px 3px 4px rgba(0, 0, 0, .3);  
  margin-left: 325px;  
  padding: 20px;  
  width: 62.765957%; /* 590px/940px */  
}
```



LEVEL 2

THE FLUID GRID



THE FLUID GRID

```
.content {  
  background-color: #fff;  
  box-shadow: 0px 3px 4px rgba(0, 0, 0, .3);  
  margin-left: 325px;  
  padding: 20px;  
  width: 62.765957%; /* 590px/940px */  
}
```



LEVEL 2

THE FLUID GRID

Flexible Margins

When setting flexible margins on an element, your context is the width of the element's container.

Ethan Marcotte (Responsive Web Design, 35)



LEVEL 2

THE FLUID GRID

target ÷ **context** = result

325px ÷ **940px** = .34574468



Our margin



Width of <div class="site">



LEVEL 2

THE FLUID GRID

```
.content {  
  background-color: #fff;  
  box-shadow: 0px 3px 4px rgba(0, 0, 0, .3);  
  margin-left: 34.574468%; /* 325px/940px */  
  padding: 20px;  
  width: 62.765957%; /* 590px/940px */  
}
```



LEVEL 2

THE FLUID GRID

Flexible Padding

When setting flexible padding on an element, your context is the width of the element itself.

Ethan Marcotte (Responsive Web Design, 35)

PADDING

BOX

LEVEL 2



THE FLUID GRID

target ÷ context = result

20px ÷ 590px = .03389830



Our padding



Width of <section class="content">



LEVEL 2

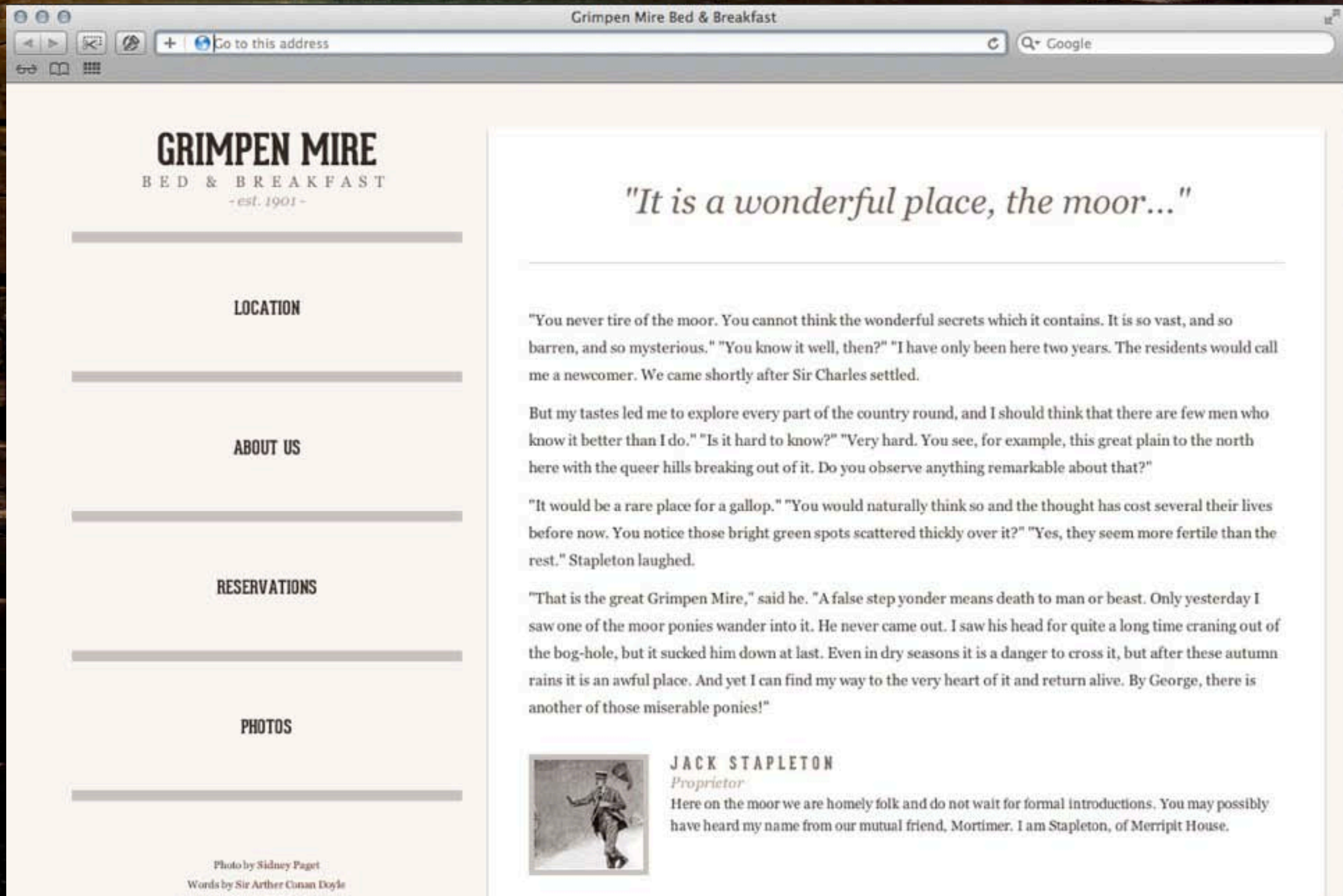
THE FLUID GRID

```
.content {  
  background-color: #fff;  
  box-shadow: 0px 3px 4px rgba(0, 0, 0, .3);  
  margin-left: 34.574468%; /* 325px/940px */  
  padding: 3.389830%; /* 20px/590px */  
  width: 62.765957%; /* 590px/940px */  
}
```



LEVEL 2

THE FLUID GRID



ADAPTIVE ADVENTURES

- LEVEL 3 -

.....

ADAPTIVE ADVENTURES

Adaptive Web Design

Break Points

Media Queries



LEVEL 3

WHAT IS ADAPTIVE WEB DESIGN?

Design for controlled adaptation



LEVEL 3

Following

Suggestions

Popular

Everyone

Debuts

Playoffs



34 views 3 comments 14 likes

Michael Spitz



42 views 8 comments 17 likes

Gerren Lamson



54 views 3 comments 17 likes

Gerren Lamson



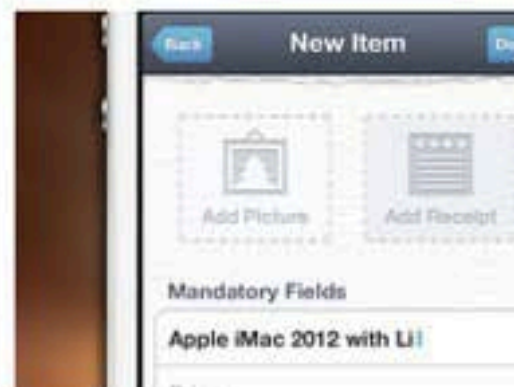
20 views 0 comments 2 likes

Brian Cook



158 views 5 comments 42 likes

Mark Weaver



368 views 7 comments 51 likes

zee7



420 views 8 comments 48 likes



71 views 3 comments 25 likes

Date	Actn	User	Content
MARCH 21 9:33AM		Evan Shuster	I'm one line of
MARCH 21 9:33AM		Michael Longhauser	I'm a longer li
MARCH 21 9:33AM		Ju	Someone
MARCH 21 9:33AM		Evan Shuster	I'm one li
MARCH 21 9:33AM		From Michael M To John L	I'm a longer li

492 views 4 comments 27 likes

Panjiva is hiring
Lead UI/UX Designer

Incoming Activity →

 jso followed you.
6 minutes ago Sindy Sinn followed you.
about 1 hour ago Sindy Sinn liked ZOMBIE School!!
about 1 hour agoDraft a Designer
You have 1 invitation available

ADS VIA THE DECK

Atmail Cloud, full messaging solution
for your company & clients. Use your
domain & branding.

Projects →

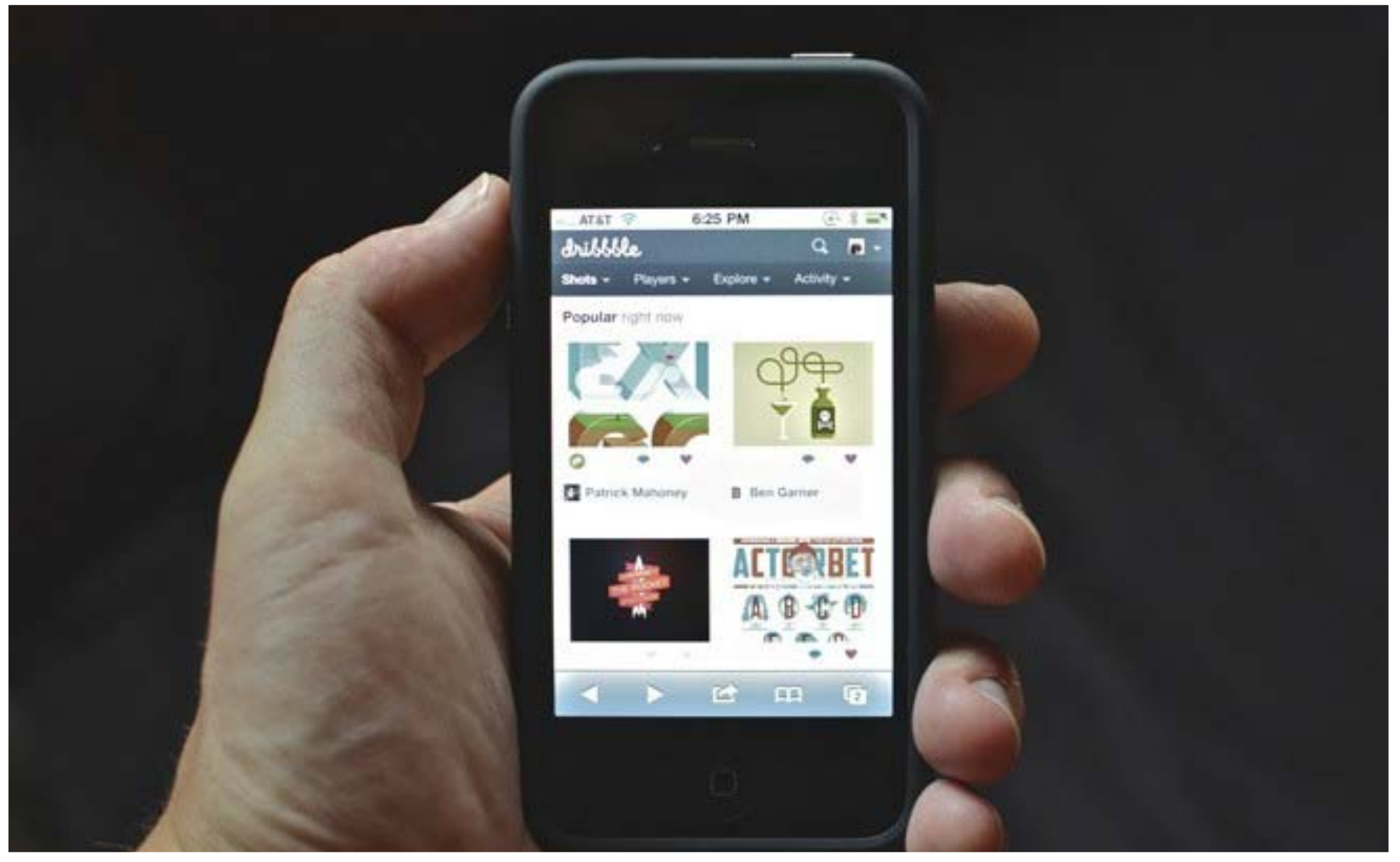
**Doku**
3 shots
updated 6 minutes ago**DJ Techno Kid**
3 shots
updated 36 minutes ago**Book Covers**

DRIBBBLE MOBILE OPTIONS

- *Separate Mobile Site*
- *Adaptive Design*
- *Responsive Design*



LEVEL 3



LEVEL 3

WHAT IS ADAPTIVE WEB DESIGN?

Designing to meet a specific context

- *Device*
- *Screen Size*
- *Resolution*



LEVEL 3

FOUR DESIGN KEYS

- *Who Is Your User?*
- *How Will They Use The Site?*
- *Context (i.e. what device?)*
- *Content (how will it adapt?)*

important for any design project!



LEVEL 3



NAUTILUS
BAR & RESTAURANT

JOURNEY

INTO

MOBILE

LEVEL 3

FOUR DESIGN KEYS

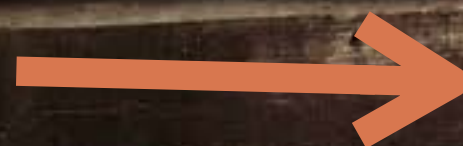
- *User* → *Find the restaurant or learn about it*
- *Use*
- *Context* → *Laptop or mobile phones*
- *Content* → *Location info + menu + about*



LEVEL 3



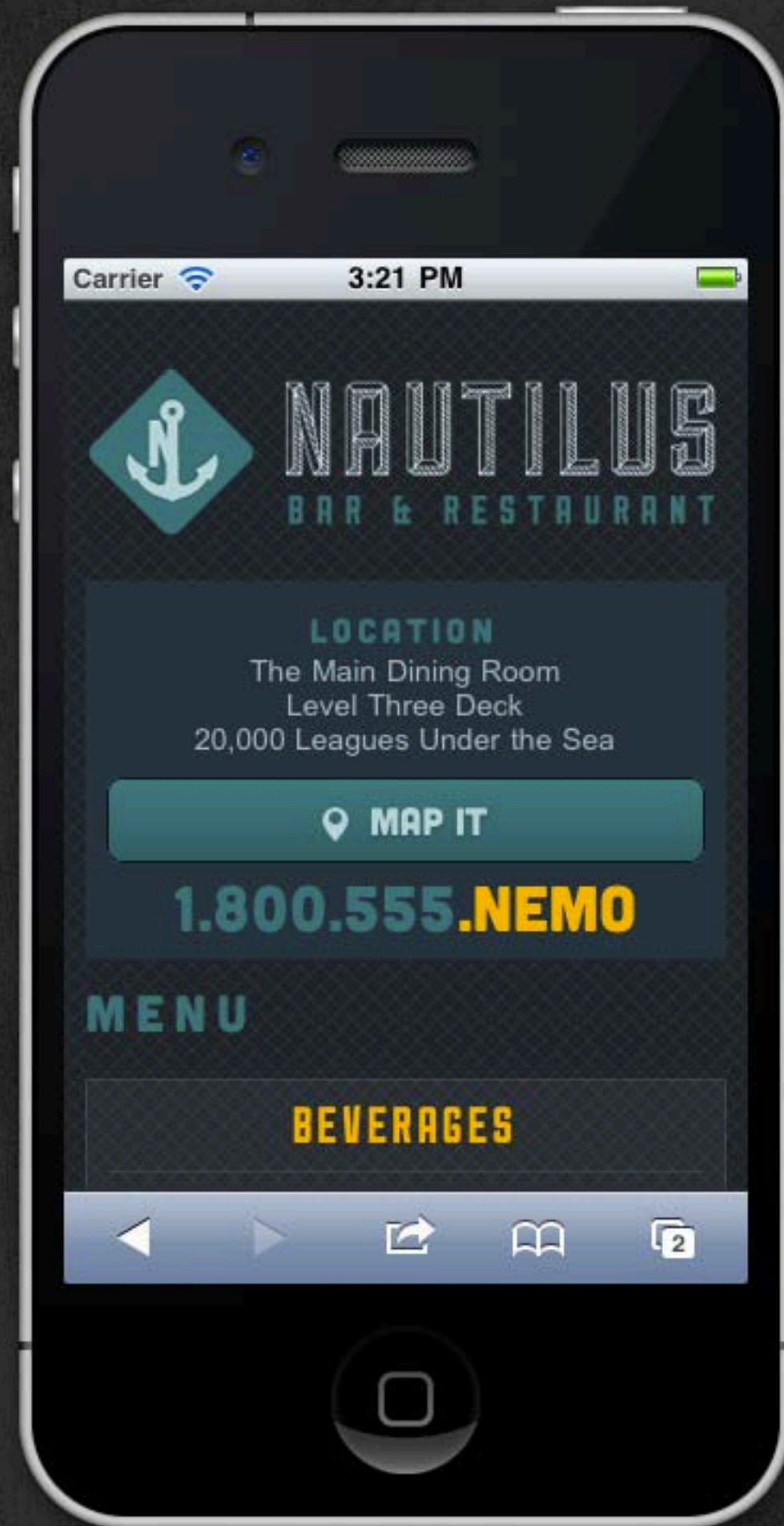
DESKTOP



MOBILE



LEVEL 3



LEVEL 3



NAUTILUS

BAR & RESTAURANT

LOCATION

The Main Dining Room
Level Three Deck
20,000 Leagues Under the Sea

1.800.555.NEMO

MAP IT

MENU

BEVERAGES

RED WINE

Château Lafite Rothschild
1865, Pauillac

Château Latour
1852, Pauillac

Dow's Port 30yr
1840, Portugal

WHITE WINE

Château d'Yquem
1811, Sauternes

Château Petrus
1840, Pomerol

Weingut Keller
1865, Reisling

CUISINE

FIRST

Preserve of Sea Cucumber
in milk of the Cetacea

SECOND

Braised Octopus
with Port & Ink reduction

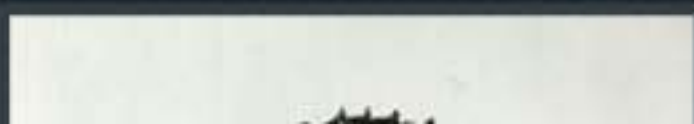
THIRD

Filet of Yellowtail
on seaweed slaw

FORTH

Fruit of the Anemone
with North Sea Fucus Sugar

ABOUT



The Nautilus is a masterpiece containing masterpieces. Here are the several dimensions of the boat you are in. It is an elongated cylinder with conical ends. It is very like a cigar in

ADAPTIVE WEB DESIGN

1. Adaptive Markup

2. Break Points

3. Media Queries



LEVEL 3

ADAPTIVE MARKUP



NAUTILUS
BAR & RESTAURANT

LOCATION

The Main Dining Room

header

1.800.555.NEMO

MAP IT

MENU

BEVERAGES

RED WINE

Château Lafite Rothschild
1865, Pauillac

Château Latour
1852, Pauillac

Dow's Port 30yr
1840, Portugal

WHITE WINE

Château d'Yquem
1811, Sauternes

Château Petrus
1840, Pomerol

Weingut Keller
1865, Reisling

CUISINE

FIRST

Preserve of Sea Cucumber
in milk of the Cetacea

SECOND

Braised Octopus
with Port & Ink reduction

THIRD

Filet of Yellowtail
on seaweed slaw

FORTH

Fruit of the Anemone
with North Sea Fucus Sugur



MENU

BEVERAGES

RED WINE

Château Lafite Rothschild
1865, Pauillac

Château Latour
1852, Pauillac

Dow's Port 30yr
1840, Portugal

WHITE WINE

Château d'Yquem
1811, Sauternes

Château Petrus
1840, Pomerol

Weingut Keller
1865, Reisling

CUISINE

FIRST

Preserve of Sea Cucumber
in milk of the Cetacea

SECOND

Braised Octopus
with Port & Ink reduction

THIRD

Filet of Yellowtail
on seaweed slaw

FOURTH

Fruit of the Anemone
with North Sea Ficus Sugar

menu

ABOUT



The Nautilus is a masterpiece containing masterpieces. Here are the several dimensions of the boat you are in. It is an elongated cylinder with conical ends. It is very like a cigar in shape, a shape already adopted in London in several constructions of the same sort. The length of this cylinder, from stern to stern, is exactly 70 meters, and its maximum breadth is

RED WINE

Château Lafite Rothschild

1865, Pauillac

Château Latour

1852, Pauillac

Dow's Port 30yr

1840, Portugal

WHITE WINE

Château d'Yquem

1811, Sauternes

Château Petrus

1840, Pomerol

Weingut Keller

1865, Reisling

FIRST

Preserve of Sea Cucumber

in milk of the Cetacea

SECOND

Braised Octopus

with Port & Ink reduction

THIRD

Filet of Yellowtail

on seaweed slaw

FORTH

Fruit of the Anemone

with North Sea Fucus Sugur

ABOUT



The Nautilus is a masterpiece containing masterpieces. Here are the several dimensions of the boat you are in. It is an elongated cylinder with conical ends. It is very like a cigar in shape, a shape already adopted in London in several constructions of the same sort. The length of this cylinder, from stern to stern, is exactly 70 meters; and its maximum breadth is eight meters. It is longer, of ten to one like your long-voyage steamers, but its lines are sufficiently rounded and prolonged enough, to allow the water to slide off easily, and oppose no obstacle to its passage. These two dimensions enable you to obtain by a simple calculation the surface and cubic contents of the Nautilus. Its area measures 1011.45 square meters; and its contents 1,500.2 cubic meters; that is to say, when completely immersed it displaces 1500.2 cubic meters of water, or 1500.2 metric tons.

ADAPTIVE WEB DESIGN

1. Adaptive Markup

2. Break Points

3. Media Queries



LEVEL 3

UNDERSTANDING BREAK POINTS

Break Points: where your design breaks down

Typically the height and width of the target viewport



LEVEL 3

UNDERSTANDING BREAK POINTS

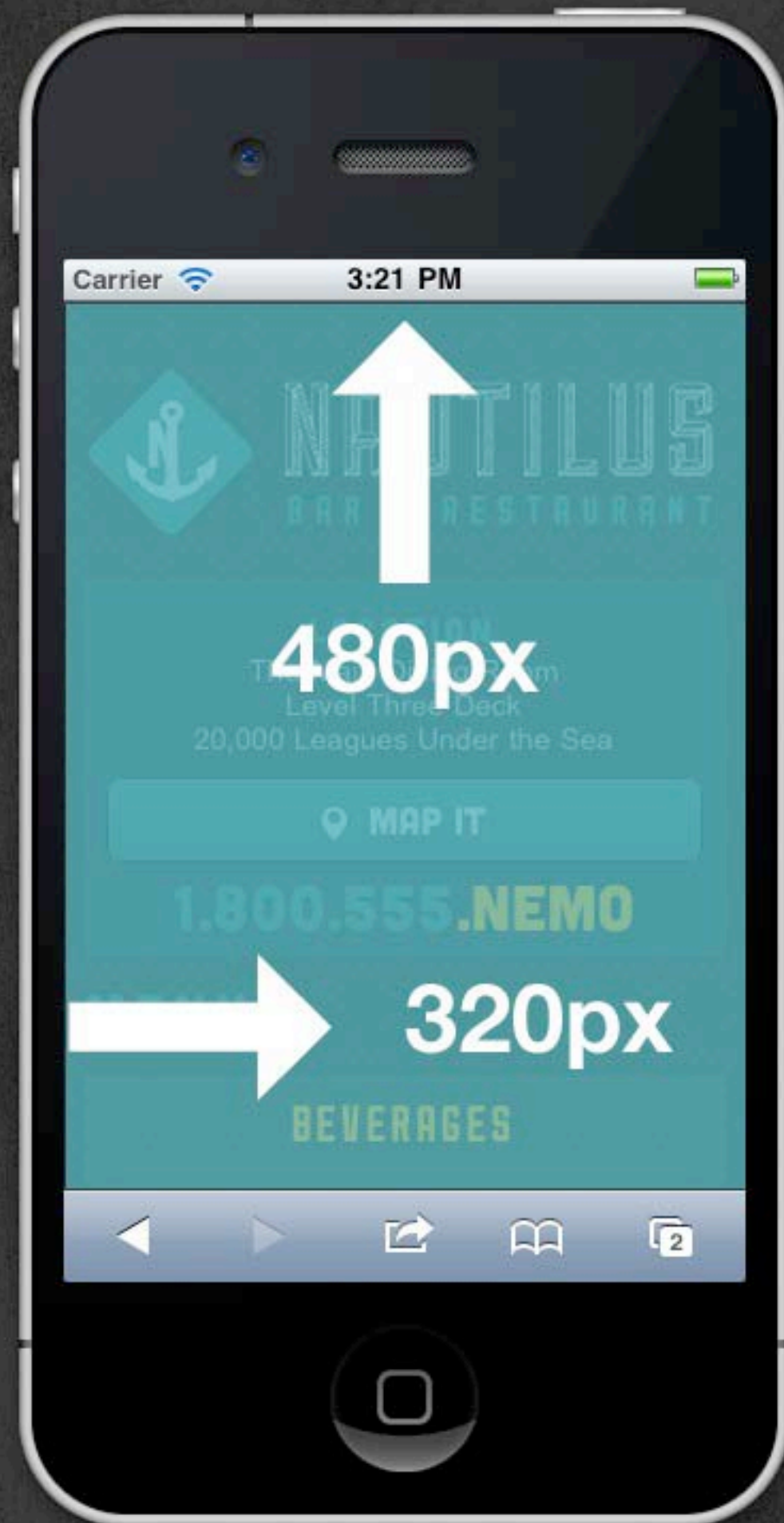


JOURNEY

INTO

MOBILE

IMG: [HTTP://B11FONS.BLOG.COM/FILES/2011/05/MOBILE3.JPG](http://b11fons.blog.com/files/2011/05/MOBILE3.JPG)



ADAPTIVE WEB DESIGN

1. Adaptive Markup

2. Break Points

3. Media Queries



LEVEL 3

MEDIA QUERIES

```
<link rel="stylesheet" href="global.css" media="all" />
```

```
<link rel="stylesheet" href="main.css" media="screen" />
```

```
<link rel="stylesheet" href="paper.css" media="print" />
```

```
<link rel="stylesheet" href="mobile.css" media="handheld"/>
```



LEVEL 3

MEDIA QUERIES

Media type

Query

```
@media screen and (max-width: 320px) {  
  body {  
    font-size: 100%  
  }  
}
```



LEVEL 3

MEDIA QUERIES

```
@media screen and (max-width: 320px) {  
  body {  
    font-size: 100%  
  }  
}
```

$\leq 320\text{px}$ width



LEVEL 3

MEDIA QUERIES

```
@media screen and (min-width: 1024px) {  
  body {  
    font-size: 100%;  
  }  
}
```

$\geq 1024\text{px}$ in width



LEVEL 3


```

279
280
281 /* -----
282 | Media Queries
283 | ----- */
284
285 /* < 480px */
286
287 @media screen and (max-width: 480px) {
288
289     /* ----- Header ----- */
290     h1 {
291         background: url(images/logo_s.png) no-repeat;
292         height: 80px;
293         margin: 0 auto;
294         text-indent: -9999em;
295         width: 295px;
296     }
297     header {
298         border-bottom: none;
299         padding: 0px;
300         position: relative;
301         margin-top: none;
302     }
303     header h3 {margin-bottom: 3px;}
304     header p {line-height: 1.2em;}
305     .logo {
306         float: none;
307         margin: 0 auto;
308         text-align: center;
309     }
310     .location {
311         background-color: #26343e;
312         float: none;
313         margin: 0 auto;
314         margin-top: 20px;
315         padding: 10px;
316         text-align: center;
317     }
318     .addy {
319         float: none;
320         margin-right: 0px;
321         padding-top: 5px;
322     }

```



Bottom of your stylesheet

MEDIA QUERIES



```
@media screen and (max-width: 320px) {  
  
}
```

```
@media screen and (max-width: 480px) {  
  
}
```



LEVEL 3

MEDIA QUERIES



```
@media screen and (max-width: 480px) {  
}
```

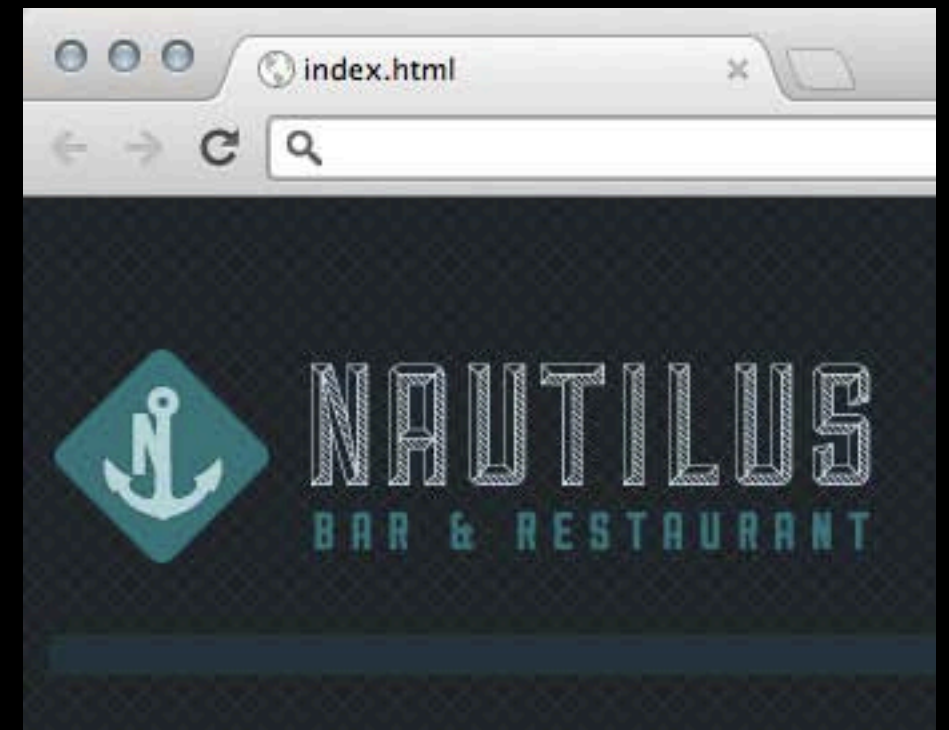
Benefit of fluid sites!



LEVEL 3

MEDIA QUERIES: DESKTOP

```
h1 {  
  background: url(images/logo.png) no-repeat;  
  height: 84px;  
  text-indent: -9999em;  
  width: 308px;  
}  
header {  
  border-bottom: 15px solid #26343e;  
  padding: 25px 0;  
}
```



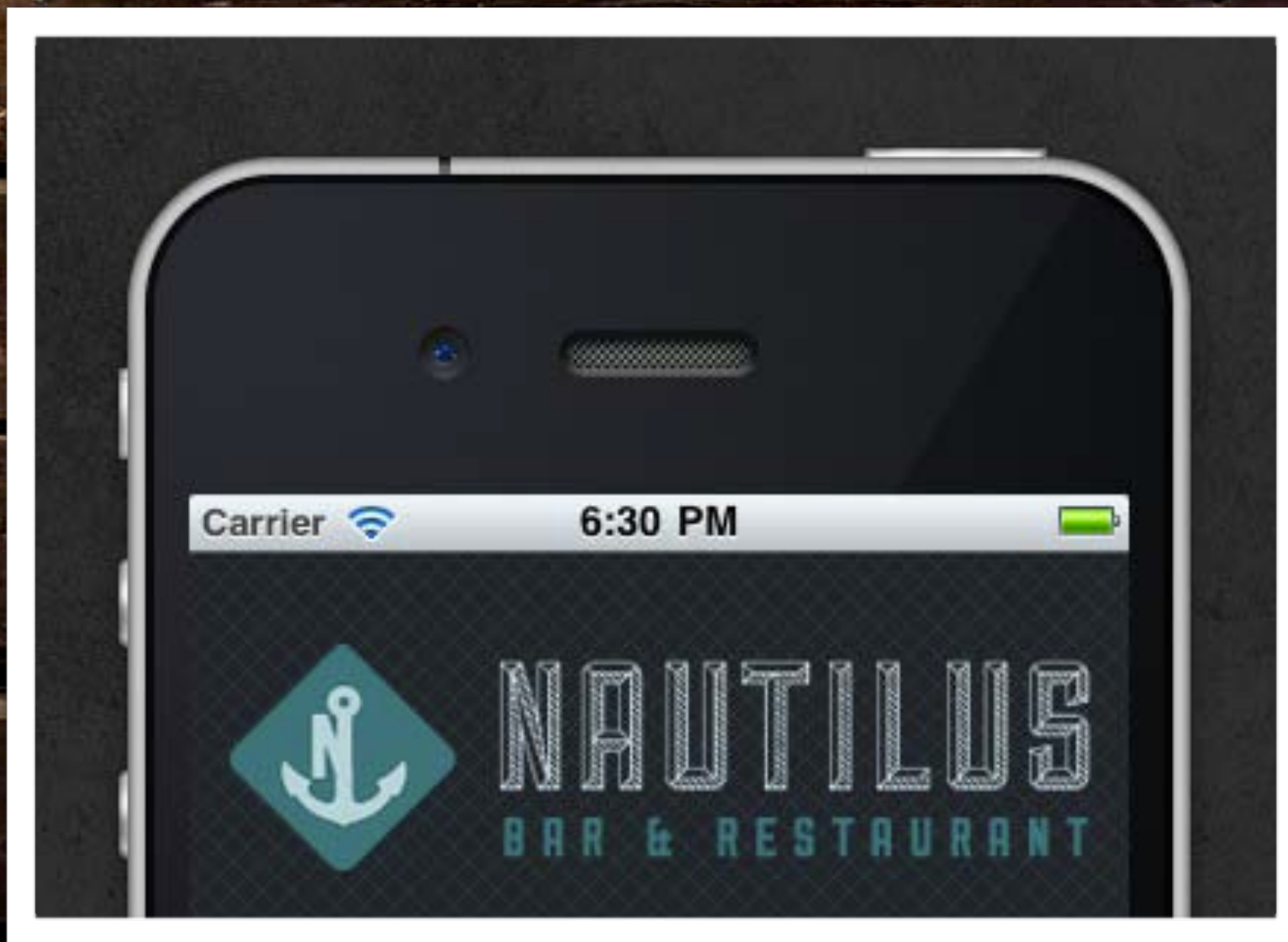
LEVEL 3

MEDIA QUERIES: MOBILE



```
@media screen and (max-width: 480px) {  
h1 {  
  background: url(images/logo_s.png) no-repeat;  
  height: 80px;  
  margin: 0 auto;  
  text-indent: -9999em;  
  width: 295px;  
}  
header {  
  border-bottom: none;  
  padding: 0px;  
}  
}
```

LEVEL 3



MEDIA QUERIES: DESKTOP



```
.logo {  
  float: left;  
}  
.location {  
  float: right;  
}  
.addy {  
  float: left;  
}  
.mappy {  
  float: right;  
  text-align: center;  
  width: 270px;  
}
```

LOCATION

The Main Dining Room
Level Three Deck
20,000 Leagues Under the Sea

📍 MAP IT

1.800.555.NEMO

LEVEL 3

MEDIA QUERIES: MOBILE

```
@media screen and (max-width: 480px) {  
  .logo {  
    float: none;  
    margin: 0 auto;  
    text-align: center;  
  }  
  .location {  
    background-color: #26343e;  
    float: none;  
    margin: 0 auto;  
    text-align: center;  
  }  
  .addy {  
    float: none;  
  }  
  .mappy {  
    float: none;  
    width: 100%;  
  }  
}
```



LEVEL 3

Carrier




7:50 PM



NAUTILUS
BAR & RESTAURANT

LOCATION

The Main Dining Room
Level Three Deck
20,000 Leagues Under the Sea

 MAP IT

1.800.555.NEMO

MEDIA QUERIES: DESKTOP



```
.box {  
  min-height: 425px;  
  width: 41.666667%; /* 400px/960px */  
}
```

```
/* ----- Beverages ----- */
```

```
.beverages {  
  float: left;  
}
```

```
/* ----- Cuisine ----- */
```

```
.cuisine {  
  float: right;  
}
```

MENU

BEVERAGES

RED WINE

Chateau Lafite Rothschild
1865, Pauillac

Chateau Latour
1852, Pauillac

Dow's Port 30yr
1840, Portugal

WHITE WINE

Chateau d'Yquem
1811, Sauternes

Chateau Petrus
1840, Pomerol

Weingut Keller
1865, Reisling

Preserv
in m

Br
in Po

Fil
on

Fruit
with No

MEDIA QUERIES: MOBILE



```
@media screen and (max-width: 480px) {  
  .box {  
    margin: 20px auto;  
    min-height: 0px;  
    width: inherit;  
  }  
  
  /* ----- Beverages ----- */  
  .beverages {  
    float: none;  
  }  
  
  /* ----- Cuisine ----- */  
  .cuisine {  
    float: none;  
  }  
}
```

LEVEL 3

Carrier



3:21 PM



MENU

BEVERAGES

RED WINE

Chateau Lafite Rothschild 1865, Pauillac

Chateau Latour 1852, Pauillac

Dow's Port 30yr 1840, Portugal

WHITE WINE

Chateau d'Yquem 1811, Sauternes

Chateau Petrus 1840, Pomerol

Weingut Keller 1865, Reisling

CUISINE

FIRST



RESPONSIVE ADVENTURES

- LEVEL 4 -

.....

RESPONSIVE ADVENTURES

The Mobile First Approach

Responsive Applied

Advanced Media Queries



Level 4

THE MOBILE FIRST APPROACH

"prepares you for the explosive growth and new opportunities on the mobile internet, forces you to focus, enables you to innovate in ways you previously couldn't."

Luke Wroblewski (Mobile First, 5)



Level 4

THE MOBILE FIRST APPROACH

Focus on the most important things:

Simplify content

Prioritize layout

Optimize user experience



Level 4

RESPONSIVE DESIGN

Is Responsive the same as Adaptive?

- *All Responsive are Adaptive*
- *Not all Adaptive are Responsive*



Level 4

RESPONSIVE DESIGN

Responsive designs provide continuity between contexts

Responsive designs are portable and accessible

Ethan Marcotte



Level 4

RECAP: WHERE WE'VE BEEN

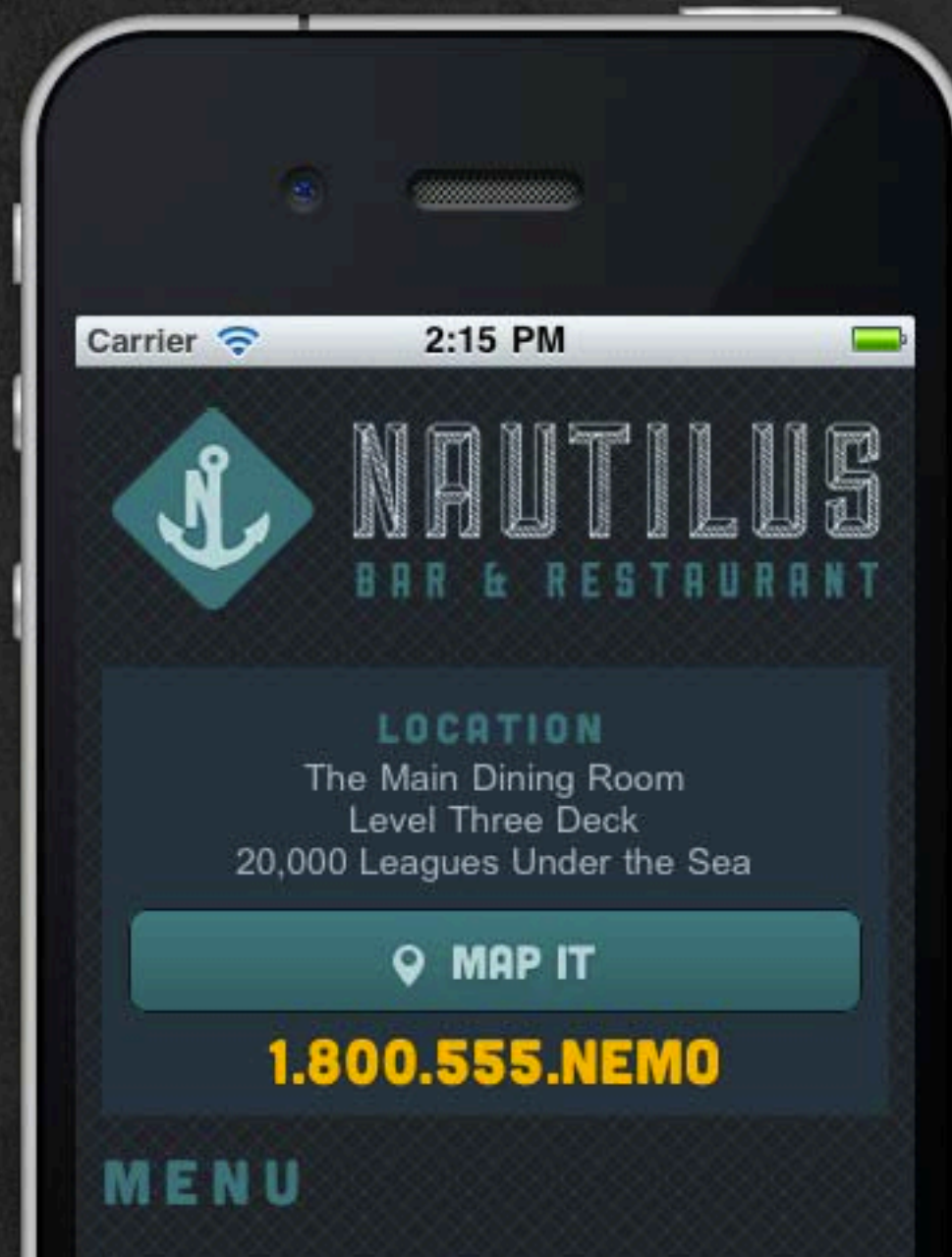
- 1. *Fluid Layouts* → *limitations with viewport size*
- 2. *Adaptive Design* → *doesn't cover universal web*
- 3. *Responsive Design* → *flexible and universal*



Level 4

RESPONSIVE APPLIED

Responsive Design: content defines break points



Level 4



index.html



NAUTILUS

BAR & RESTAURANT

LOCATION

The Main Dining Room
Level Three Deck
20,000 Leagues Under the Sea

MAP IT

1.800.555.NEMO



870px

MENU

BEVERAGES

RED WINE

Chateau Lafite Rothschild
1865, Pauillac

Chateau Latour
1852, Pauillac

Dow's Port 30yr
1840, Portugal

WHITE WINE

Chateau d'Yquem
1811, Sauternes

Chateau Petrus
1840, Pomerol

Weingut Keller
1865, Reisling

CUISINE

FIRST

Preserve of Sea Cucumber
in milk of the Cetacea

SECOND

Braised Octopus
in Port & Ink reduction

THIRD

Filet of Yellowtail
on seawood slaw

FOURTH

Fruit of the Anemone
with North Sea Fucus Sugar


```
/* < 870px */
```

```
@media screen and (max-width: 870px) {
```

```
}
```

index.html

NAUTILUS
BAR & RESTAURANT

LOCATION
The Main Dining Room
Level Three Deck
20,000 Leagues Under the Sea

MAP IT

1.800.555.NEMO

MENU

BEVERAGES

RED WINE
Chateau Lafite Rothschild
1865, Pauillac

CUISINE

FIRST
Preserve of Sea Cucumber
in milk of the Cetacea


```
/* < 870px */
```

```
@media screen and (max-width: 870px) {
```

```
/* ----- Header ----- */
```

```
h1 {
```

```
background: url(images/logo_1.png) no-repeat;
```

```
height: 105px;
```

```
margin: 0 auto;
```

```
width: 400px;
```

```
}
```

```
.location {
```

```
background-color: #26343e;
```

```
float: none;
```

```
min-height: 85px;
```

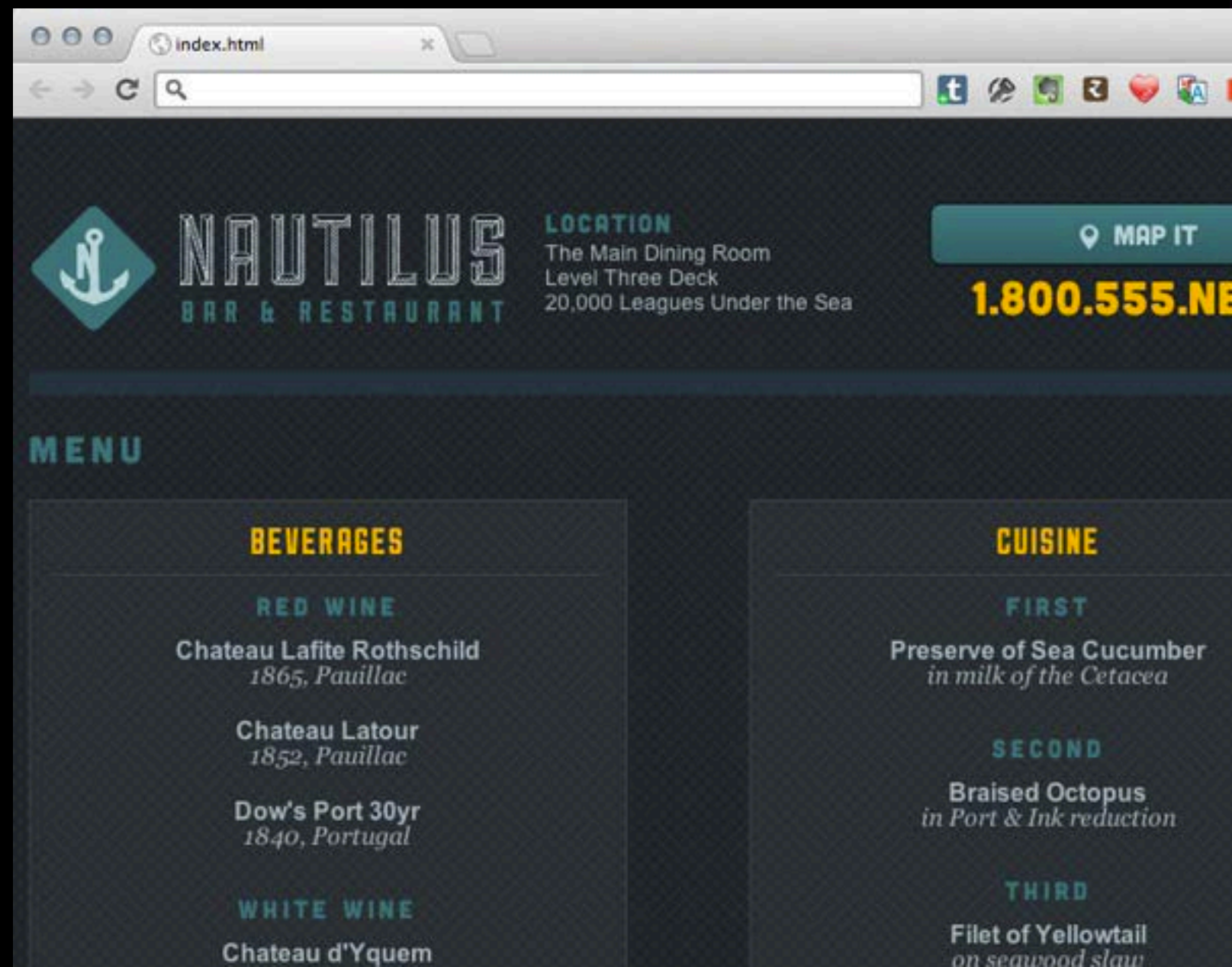
```
margin: 0 auto;
```

```
margin-top: 20px;
```

```
padding: 10px;
```

```
text-align: center;
```

```
}
```





NAUTILUS

BAR & RESTAURANT

LOCATION

The Main Dining Room
Level Three Deck
20,000 Leagues Under the Sea

📍 MAP IT

1.800.555.NEMO

MENU

BEVERAGES

RED WINE

Chateau Lafite Rothschild
1865, Pauillac

Chateau Latour
1852, Pauillac

Dow's Port 30yr
1840, Portugal

WHITE WINE

Chateau d'Yquem
1811, Sauternes

Chateau Petrus

CUISINE

FIRST

Preserve of Sea Cucumber
in milk of the Cetacea

SECOND

Braised Octopus
in Port & Ink reduction

THIRD

Filet of Yellowtail
on seawood slaw

FOURTH

MENU



BEVERAGES

RED WINE

Chateau Lafite Rothschild
1865, Pauillac

Chateau Latour
1852, Pauillac

Dow's Port 30yr
1840, Portugal

WHITE WINE

Chateau d'Yquem
1811, Sauternes

Chateau Petrus
1840, Pomerol

Weingut Keller
1865, Reisling

768px

CUISINE

FIRST

Preserve of Sea Cucumber
in milk of the Cetacea

SECOND

Braised Octopus
in Port & Ink reduction

THIRD

Filet of Yellowtail
on seawood slaw

FOURTH

Fruit of the Anemone
with North Sea Fucus Sugar


```
/* < 768px */
```

```
@media screen and (max-width: 768px) {
```

```
/* ----- Section ----- */
```

```
.box {  
  padding: 10px;  
  margin: 20px auto;  
  width: inherit;
```

```
}
```

```
/* ----- Beverages ----- */
```

```
.beverages {  
  float: none;  
}
```

```
/* ----- Cuisine ----- */
```

```
.cuisine {  
  float: none;  
}  
}
```

MENU

BEVERAGES

RED WINE

Chateau Lafite Rothschild
1865, Pauillac

Chateau Latour
1852, Pauillac

Dow's Port 30yr
1840, Portugal

WHITE WINE

Chateau d'Yquem
1811, Sauternes

Chateau Petrus
1840, Pomerol

Weingut Keller
1865, Reisling

CUISINE

FIRST

Preserve of Sea Cucu
in milk of the Ceta

SECOND

Braised Octopu
in Port & Ink reduct

THIRD

Filet of Yellowta
on seawood slaw

FOURTH

Fruit of the Anemo
with North Sea Fucus

LOCATION

The Main Dining Room
Level Three Deck
20,000 Leagues Under the Sea

 [MAP IT](#)

1.800.555.NEMO

MENU

BEVERAGES

RED WINE

Chateau Lafite Rothschild
1865, Pauillac

Chateau Latour
1852, Pauillac

Dow's Port 30yr
1840, Portugal

WHITE WINE

Chateau d'Yquem
1811, Sauternes

Chateau Petrus
1840, Pomerol

Weingut Keller
1865, Reisling

CUISINE

FIRST



NAUTILUS

BAR & RESTAURANT

LOCATION

The Main Dining Room
Level Three Deck
20,000 Leagues Under the Sea

📍 MAP IT

1.800.555.NEMO

MENU

510px

BEVERAGES

RED WINE

Chateau Lafite Rothschild
1865, Pauillac

Chateau Latour
1852, Pauillac

Dow's Port 30yr
1840, Portugal

WHITE WINE

Chateau d'Yquem
1811, Sauternes

Chateau Petrus

RESPONSIVE APPLIED

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

```
/* < 510px */  
@media screen and (max-width: 510px) {  
}
```



Level 4

Carrier



2:15 PM




NAUTILUS

BAR & RESTAURANT

LOCATION

The Main Dining Room
Level Three Deck
20,000 Leagues Under the Sea

 **MAP IT**

1.800.555.NEMO

MENU

BEVERAGES

RED WINE



RESPONSIVE ADVENTURES

The Mobile First Approach
Responsive Applied
Advanced Media Queries

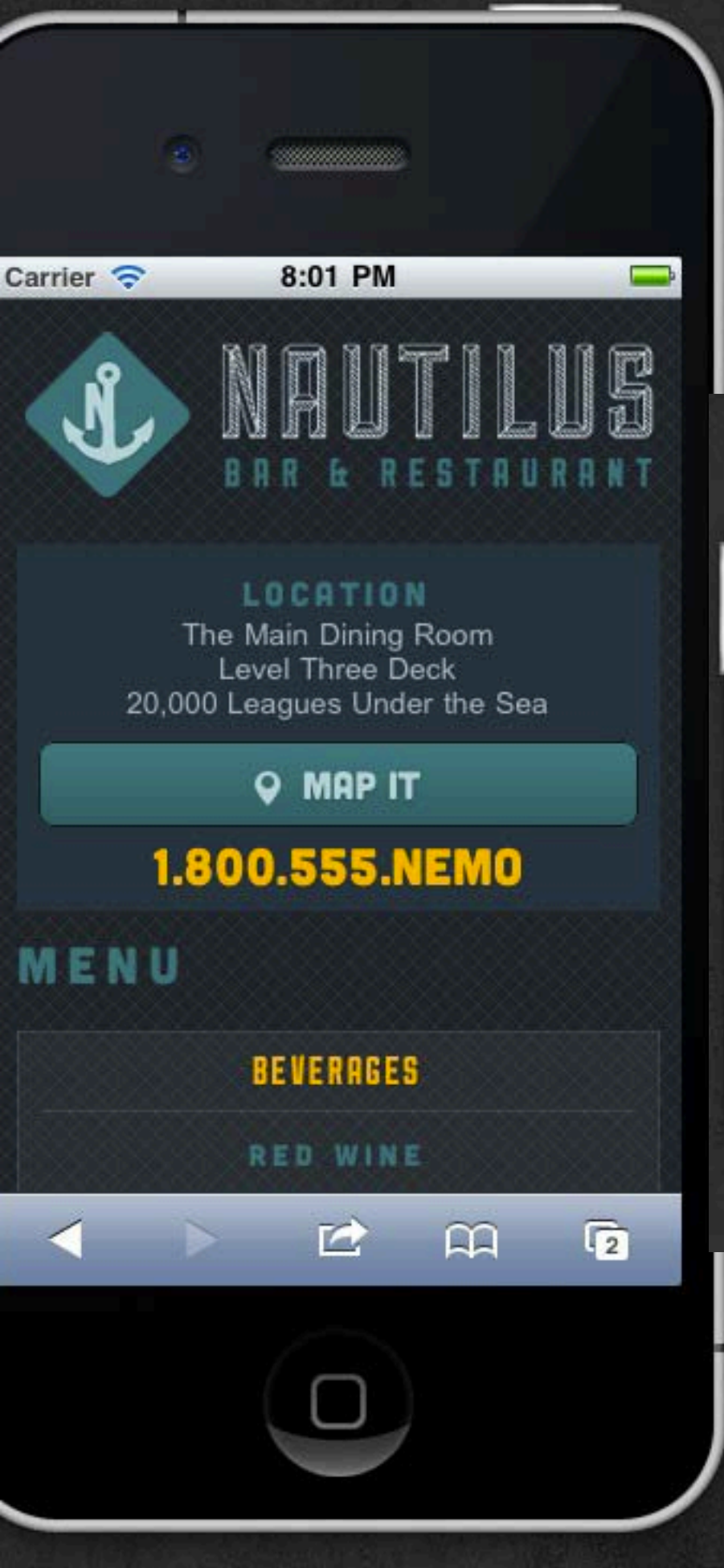


Level 4

FEATURE NAME	DEFINITION	HAS min- AND max- PREFIXES
width	The width of the display area.	✓
height	The height of the display area.	✓
device-width	The width of the device's rendering surface.	✓
device-height	The height of the device's rendering surface.	✓

FEATURE NAME	DEFINITION	HAS min- AND max- PREFIXES
orientation	Accepts portrait or landscape values.	✗
aspect-ratio	Ratio of the display area's width over its height. For example: on a desktop, you'd be able to query if the browser window is at a 16:9 aspect ratio.	✓
device-aspect-ratio	Ratio of the device's rendering surface width over its height. For example: on a desktop, you'd be able to query if the screen is at a 16:9 aspect ratio.	✓
color	The number of bits per color component of the device. For example, an 8-bit color device would successfully pass a query of (color: 8). Non-color devices should return a value of 0.	✓
color-index	The number of entries in the color lookup table of the output device. For example, @media screen and (min-color-index: 256).	✓

FEATURE NAME	DEFINITION	HAS min- AND max- PREFIXES
monochrome	Similar to color, the monochrome feature lets us test the number of bits per pixel in a monochrome device.	✓
resolution	Tests the density of the pixels in the device, such as screen and (resolution: 72dpi) or screen and (max-resolution: 300dpi).	✓
scan	For tv-based browsing, measures whether the scanning process is either progressive or scan.	✗
grid	Tests whether the device is a grid-based display, like feature phones with one fixed-width font. Can be expressed simply as (grid).	✗



ADVANCED MEDIA QUERIES

```
/* Portrait */  
@media screen and (orientation:portrait) {  
    /* Portrait styles */  
}
```

```
/* Landscape */  
@media screen and (orientation:landscape) {  
    /* Landscape styles */  
}
```


RESPONSIVE MEDIA

- LEVEL 5 -

.....

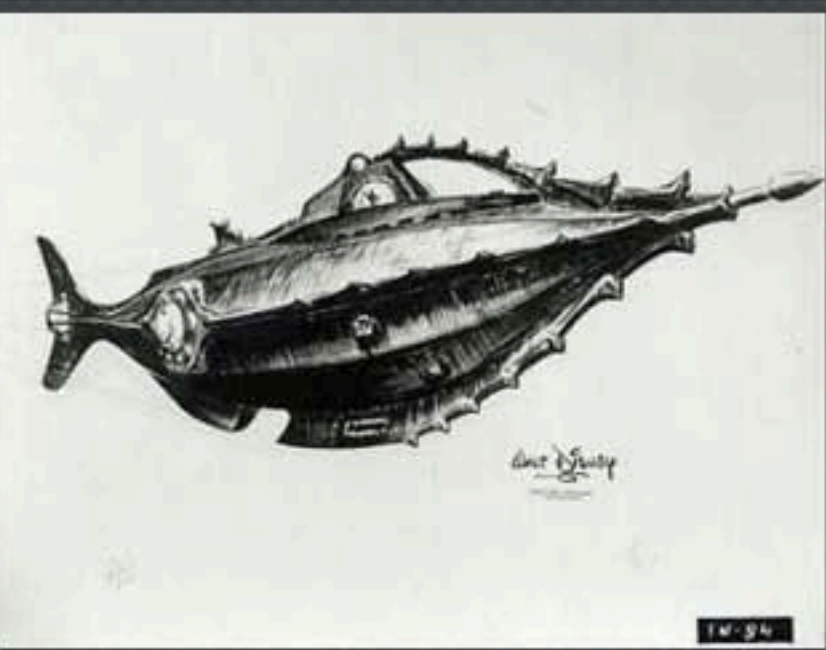
RESPONSIVE MEDIA

Responsive Images

Retina Images



Level 5



The Nautilus is a masterpiece containing masterpieces. Here are the several dimensions of the boat you are about to see. It is an elongated cylinder with conical ends. It is very like a cigar in shape, a shape already adopted in London in several constructions of the same sort. The length of this cylinder, from stem to stern, is exactly 70 meters, and its maximum breadth is eight meters. It is not built on a ratio of ten to one like your long-voyage steamers, but its lines are sufficiently long, and its curves prolonged enough, to allow the water to slide off easily, and oppose no obstacle to its passage. These two dimensions enable you to obtain by a simple calculation the surface and cubic contents of the Nautilus. Its area measures 1011.45 square meters; and its contents 1,500 cubic meters; that is to say, when completely immersed it displaces 1500.2 cubic meters of water, or 1500.2 metric tons.



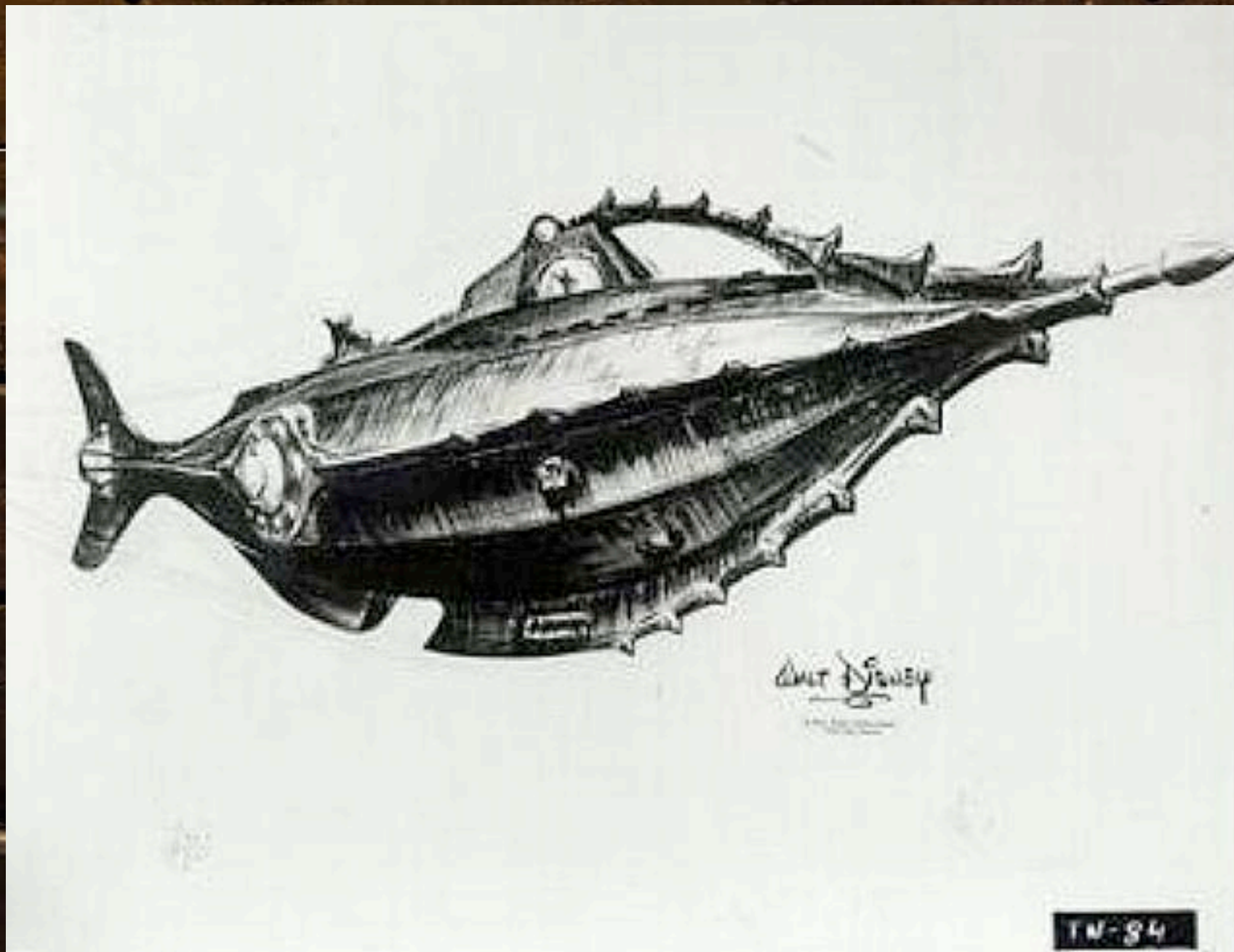
Level 5

RESPONSIVE MEDIA

1. Save out larger images



Level 5



640 x 490



Level 5

RESPONSIVE MEDIA

2. Use max-width

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

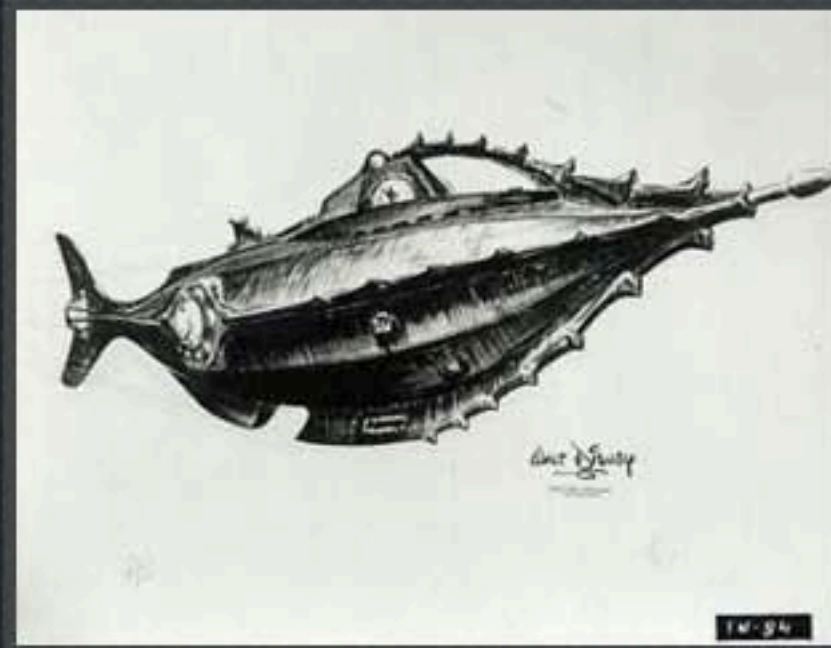


Level 5

RESPONSIVE MEDIA

2. Use max-width

```
about img {  
  width: 29.6875%;  
}
```



The Nautilus is a masterpiece containing... It is an elongated cylinder with conical e... in several constructions of the same sor... and its maximum breadth is eight meter... but its lines are sufficiently long, and its... oppose no obstacle to its passage. Ther... surface and cubic contents of the Nautil... cubic meters; that is to say, when comp... metric tons.



Level 5

RESPONSIVE MEDIA

```
img,  
embed,  
object,  
video {  
    max-width: 100%;  
}
```



Level 5

RESPONSIVE MEDIA

No IE6 support

See: <http://clagnut.com/sandbox/imagetest3/>



Level 5

RESPONSIVE MEDIA

Responsive Media on Windows

- *Prior to Windows 7, poor max-width support*
- *Specifically on Firefox 2 & IE7*
- *Use AlphasImageLoader*

<http://msdn.microsoft.com/en-us/library/>



Level 5

RESPONSIVE MEDIA

More Robust Options

- **FitText** to make font-sizing flexible: [<http://fittextjs.com/>]
- **Lettering.js** for more robust control over your typography: [<http://letteringjs.com/>]
- **FitVids.js** for flexible, responsive videos: [<http://fitvidsjs.com/>]



Level 5

RESPONSIVE MEDIA

Responsive Images

Retina Images



Level 5

RETINA IMAGES

Retina Images = $1.5x - 2x$ the pixel density

Double the image size?



Use Media Queries



Level 5

RETINA IMAGES

```
@media
```

```
only screen and (-webkit-min-device-pixel-ratio: 1.5),
```

```
only screen and (min-device-pixel-ratio: 1.5) {
```

```
    /* Styles */
```

```
}
```



Level 5

RETINA IMAGES

logo.png

200px

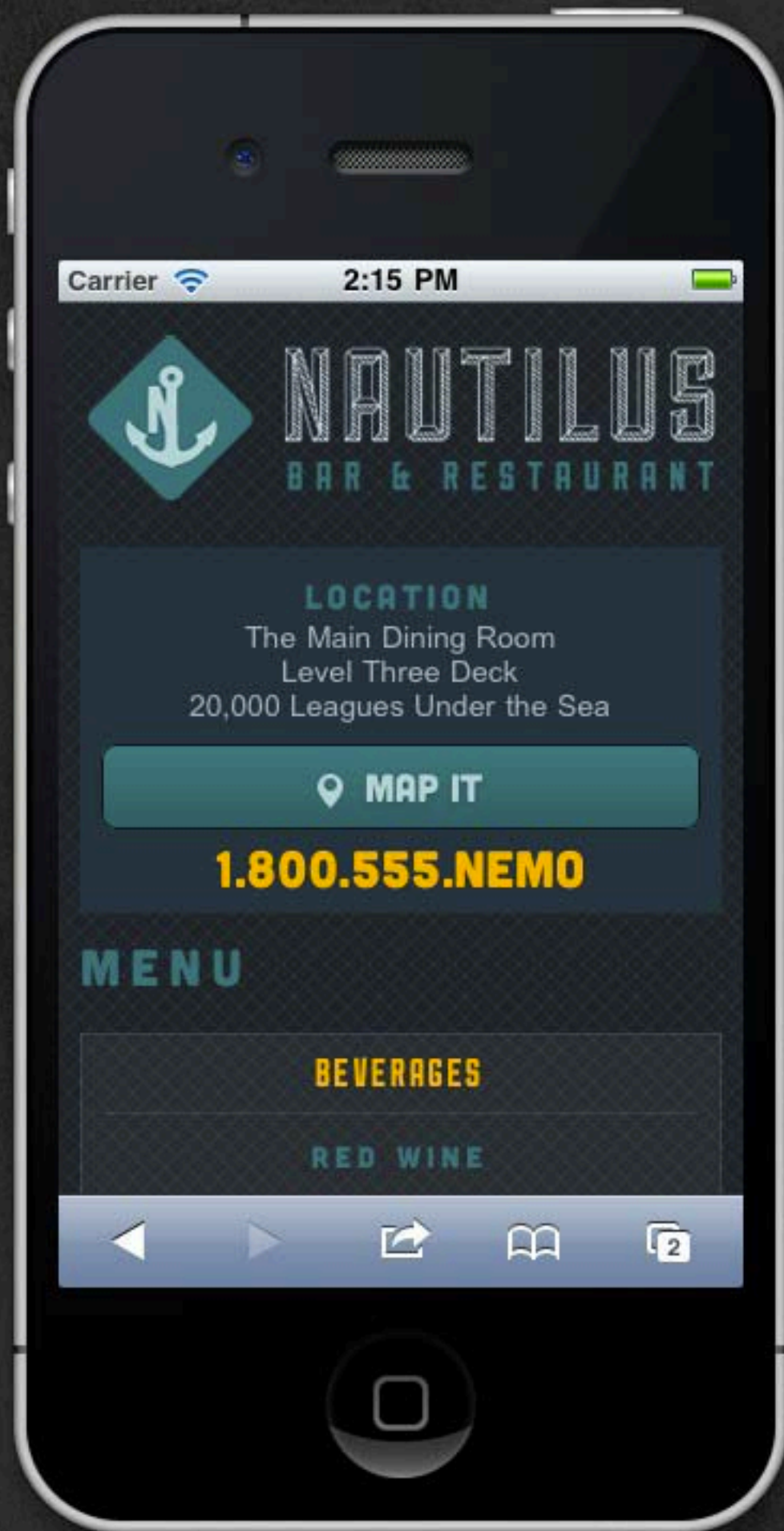


logo@2x.png

400px



Level 5



12px by 16px



24px by 32px

RETINA IMAGES

```
/* ORIGINAL CSS */
```

```
.logo {
```

```
    background-image: url(images/logo.png) no-repeat;
```

```
}
```



Level 5

RETINA IMAGES

```
@media
```

```
only screen and (-webkit-min-device-pixel-ratio: 1.5),
```

```
only screen and (min-device-pixel-ratio: 1.5) {
```

```
  .logo {
```

```
    background-image: url(logo@2x.png);
```

```
    -webkit-background-size: 12px 16px;
```

```
    background-size: 12px 16px;
```

```
  }
```

```
}
```

*background-size equal to the size of the original image
fills the container with the higher res image*



Level 5

 **MAP IT**



 **MAP IT**

BUT WHAT ABOUT FILE SIZE?

PictureFill - *created by Scott Jehl*

<http://scottjehl.com/picturefill/>

Creates <picture> element

specify different image sizes to be served by different devices



RETINA IMAGES

```
<picture alt="Our Alternate Text">  
  <!-- Smallest size first - no @media qualifier -->  
  <source src="content-image.jpeg" />  
  <!-- Large size - send to viewports 800px wide and up -->  
  <source src="content-image-lrg.jpeg" media="(min-width:  
800px)" />  
</picture>
```



<picture> doesn't exist

must include picturefill.js in your <head>

Level 5

RETINA IMAGES

```
<picture alt="Our Alternate Text">
  <!-- Smallest size first - no @media qualifier -->
  <source src="content-image.jpeg" />
  <!-- Large size - send to viewports 800px wide and up -->
  <source src="content-image-lrg.jpeg" media="(min-width:
800px)" />
</picture>
<!-- Fallback content for non-JS or non-media-query-
supporting-browsers -->
  <noscript>
    
  </noscript>
</picture>
```

when javascript is disabled

Level 5