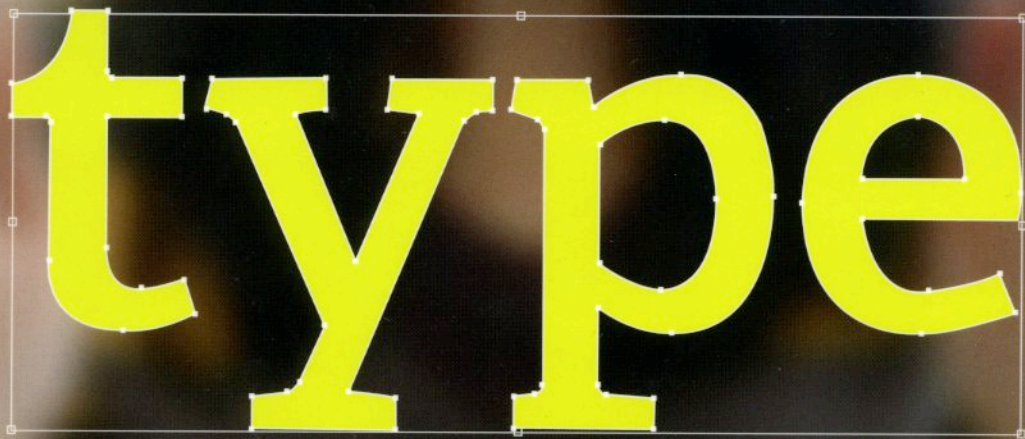**Ellen Lupton, editor**

type

on screen

**A critical guide
for designers,
writers, developers,
& students**

CHOOSING A SCREEN SIZE

At the beginning of any project, the designer thinks about who its users are and how to best reach them. How will content be delivered, and how much space will it occupy? Until recently resolutions and screen sizes were relatively consistent among users. Now desktop monitors are getting bigger and bigger, while mobile browsing has stolen the lead in accessing the Internet, and tablets hope to replace everything in between. How can designers account for a landscape that won't stop changing?

Even in the fast-moving world of web design, we can work with helpful standards. Influential designer Khoi Vinh, in his comprehensive 2010 book *Ordering Disorder*, recommends a screen size of 1024 × 768 pixels as a starting point for web designers. At that resolution smartphones can keep up while the project is scalable enough for larger displays. In practice 1024 × 768 is the approximate size for the entire screen. A host of interface elements nibble away at the edges of this basic slab of real estate. The designer needs to account for the space occupied by system menus as well as the space needed for the tools, bookmarks, and status bars employed by modern browsers. When all these elements have been subtracted, what is left for the website itself is a modest parcel of about 960 × 650 pixels. Subdividing that space into a rational column grid is the designer's next task.
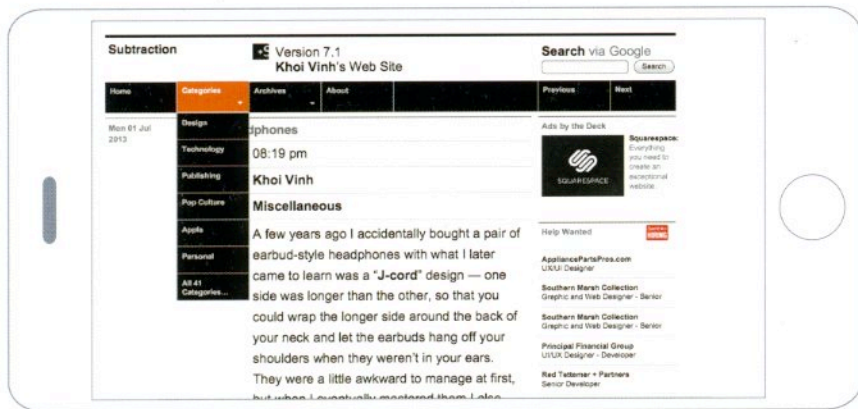
SUBTRACTION Vinh has long advocated for the application of grids to web design. Subtraction.com, a brilliant repository of Vinh's ideas about design and technology, uses a strong grid and elegant black-and-white typography to translate the theory and spirit of Swiss rationalist typography to the fluid, ever-changing world of the web. Design: Khoi Vinh, 2008.

READ MORE >> Khoi Vinh, *Ordering Disorder: Grid Principles for Web Design* (San Francisco: Peachpit Press, 2010).

960PX

650PX
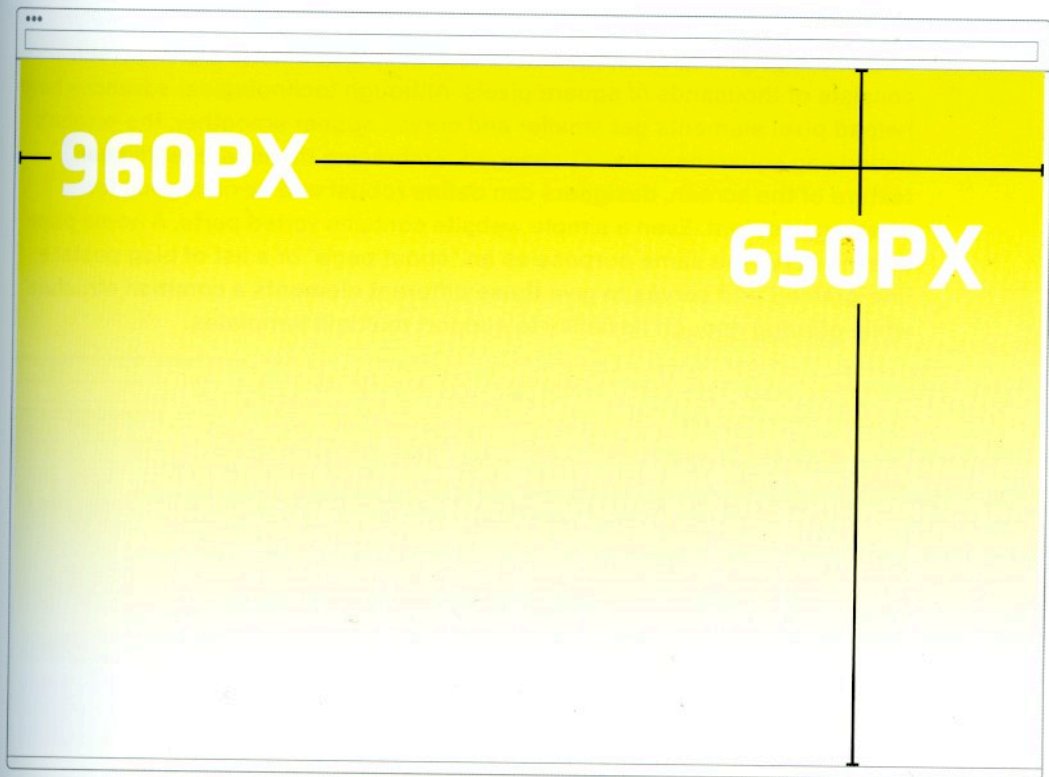
SEARCHING FOR A STANDARD A screen dimension of 1024 ×
768 offers a useful, though not absolute, standard resolution. In
a typical browser, roughly 80 percent of that space is available
for the page content, leaving 974 × 650 pixels for the designer
to work with. Adding some breathing room to the left and
right edges of the content area reduces the active real estate
to approximately 960 × 650 pixels. Diagram based on the
guidelines established by Vinh in *Ordering Disorder*, 2010.

THE GRID

Since the 1950s print designers have used ==grids== to organize the empty void of the page into columns and rows of "white space." A digital screen consists of thousands of square pixels. Although technological advances have helped pixel elements get smaller and curves appear smoother, the screen's underlying squareness hasn't changed. Embracing the innate rectilinear texture of the screen, designers can define robust and flexible grids for arranging content. Even a simple website contains varied parts. A home page doesn't serve the same purpose as an "about page" or a list of blog posts; a fine-grained grid serves to give these different elements a common structure while offering enough flexibility to support multiple templates.
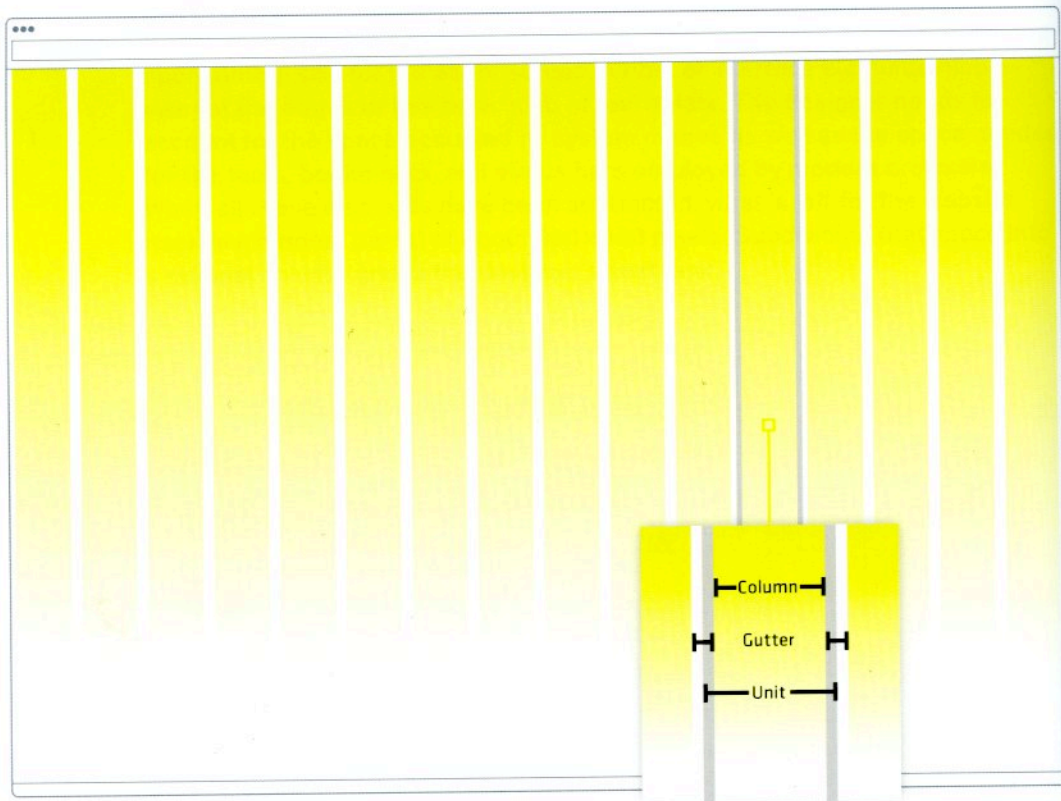

MAKING THE GRID Working with 960 pixels of screen width, we have subdivided our real estate into sixteen equal units, establishing the basis for a flexible, adaptable grid system.

Each unit contains a 50-pixel column with a 5-pixel gutter on either side. Principles adapted from Vinh, *Ordering Disorder*, 2010.

**BREAKING IT DOWN** The sixteen units easily regroup into two, four, or eight larger units.
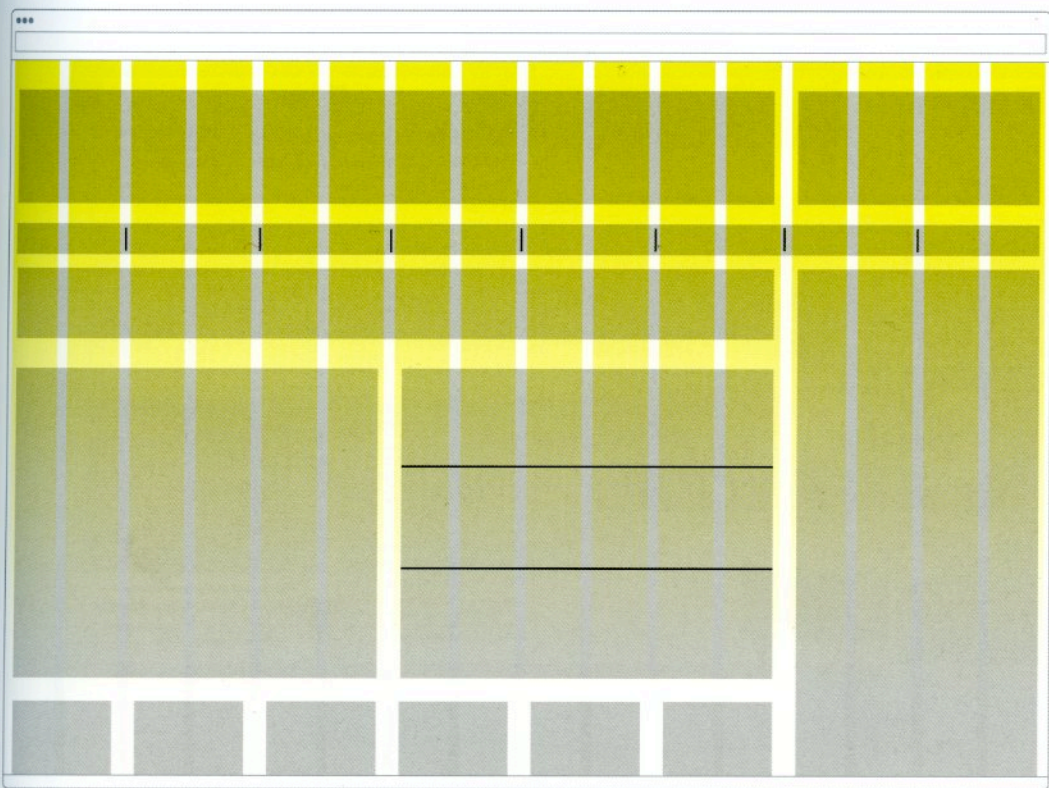
A well-defined grid offers a great deal of flexibility for laying out content.

THE FLOW OF CONTENT

Different modes of publishing afford different modes of reading. Linear, selective, consultative, or informative reading each thrive best within certain kinds of systems. A novel reads better within the linear flow of a Kindle app than in the busy framework of a web browser. Conversely, an in-depth news report relies on supporting articles and media to fill out its narrative. Slides work well for presentations and children's books because they usher the audience gently forward through a story.

By organizing the flow of reading, the designer can push users toward active searching, passive receiving, or spontaneous wandering. Designers understand that layout and structure play a role in how one reads; for readers the effect may be more subconscious. Shown here are various models for structuring the flow of content in different digital media.
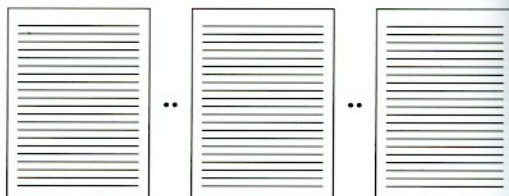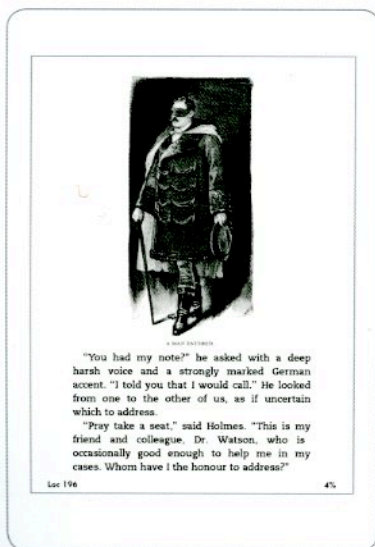

PAGES Static digital pages, like those in a PDF or a fixed-layout ePub, provide an obvious analogue to the printed page. The hard frame of a Kindle or other reading device keeps readers immersed. A status bar showing the percentage of the book already read can help orient readers within the whole.

READ MORE >> Gerard Unger, *While You're Reading* (New York: Mark Batty Publisher, 2007).

WIM CROUWEL CATALOGUE 1

wim crouwel
posters

DPS Adobe's Digital Publishing Suite enables speedy production of applications for mobile and tablet devices. The resulting content is available as a downloadable app, either as a single unit or in a newsstand of sorts that allows publishers to release multiple issues over time. Individual apps can be as rich as a webpage and don't have to adhere to a standard template or look. A diversity of interesting applications is being created today with DPS. As Adobe continues to evolve the DPS tools and more stunning examples appear in app stores, the technology could gain real traction with designers and publishers.

BOOKS AS APPS In order to gain more control of the look and layout of their digital publications, designers can create books as stand-alone applications instead of ePubs. In this example, readers reach the next chapter or article by swiping side to side; swiping vertically reveals distinct pages within that stack. Design: Elena Carl, Unit Editions, 2012. Design assistant: Liam Hine.
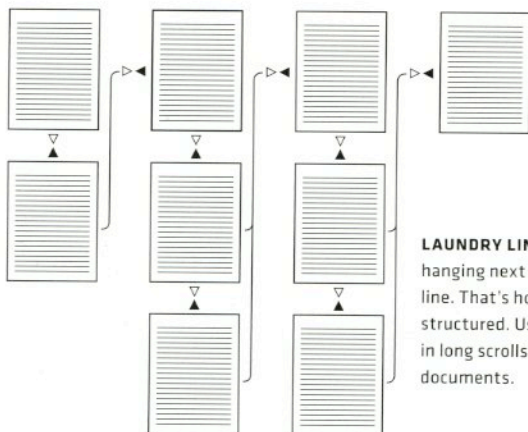

LAUNDRY LINE Picture a series of texts hanging next to each other from a common line. That's how a DPS publication is structured. Users can navigate up and down in long scrolls or side to side to move between documents.
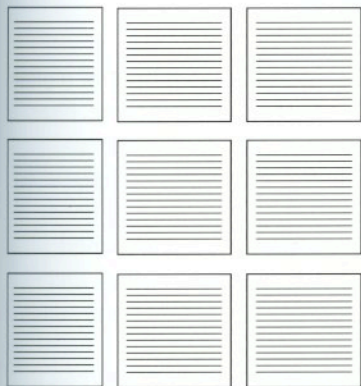
GRID A grid can be used to group elements in an equal but unconnected way. The social networks Flipboard and Pinterest are prominent examples.
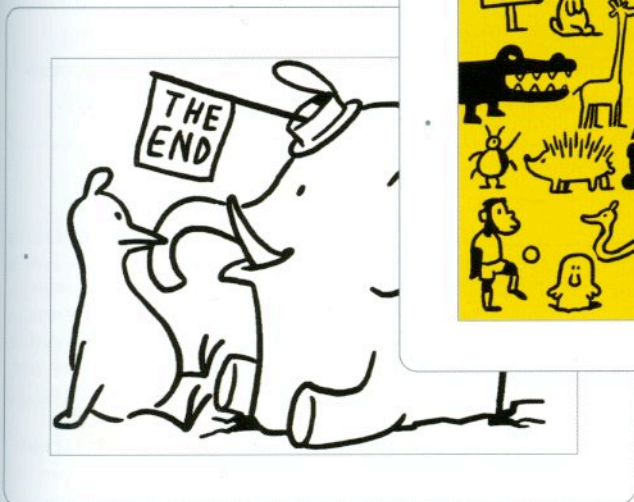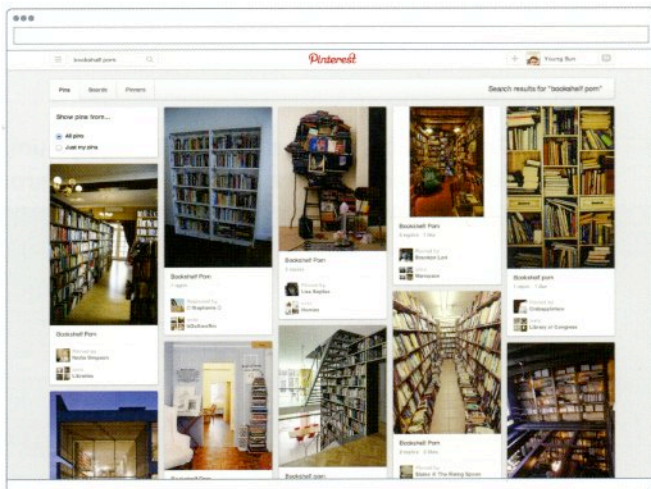
SLIDES A slideshow is like a movie: One neatly composed frame comes after another. The sequence is linear, but the content is organized into uniformly sized chunks. A great example is Christoph Niemann's interactive picture book *Petting Zoo* (2013).
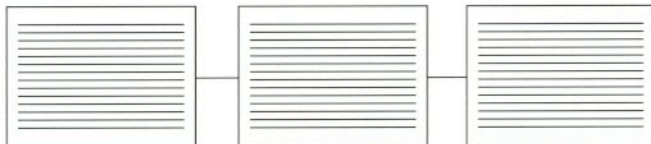
04 TYPE AND INTERFACE

JAVIER LOPEZ
ALICE HOM

An interface expresses the internal structure of a document (its heads and subheads, tables and lists) as well as the framework of menus, buttons, and links that guides users through it. Whether they are sending text messages or reading news sites, people encounter screen-based text in countless circumstances. A well-designed interface helps shape the meaning and function of this constant stream of content.

Digital users have become familiar with a range of interactions, from click, tap, and drag to pull, pinch, and swipe. Mouseover states and subtle animations make clear that interaction is available, as do basic typographic cues such as an underline or a change in color. Reacting to subtle depictions of light and shadow, users learn to anticipate how media will behave. Edges and planes that glow, bevel, cast a shadow, shimmer with transparency, or fade into light or darkness indicate doors to new information or events.

Interactive media projects are built in layers, yielding a complex three-dimensional space that allows content to move in and out of visibility. Constructing this architecture is a major task for the interaction designer, who creates an expanded canvas for the user to travel through and across, deep into and beyond the frame. The principle of hide and reveal allows designers to display more data—at larger sizes—within the limited window of a browser or device.

Designing an interface for dynamic content demands considerable planning. Wireframes—diagrams of a project's basic elements—can help communicate the designer's intent to developers and clients. Wireframes are a form of prototype, an approximation of a product that explains its features and tests its functionality. Prototypes are crucial tools for designers in any field.

This chapter starts with a bird's-eye view of the overall structure of a site before taking a closer look at the details that invite human touch and agency.

MAX PLANCK INSTITUTES MULTITOUCH INSTALLATION
Design: Moritz Stefaner and Christopher Warnow, 2011.

WIREFRAMES

A <mark>wireframe</mark> represents the skeletal structure of a website or application. Also referred to as a <mark>page schematic</mark> or a <mark>screen blueprint,</mark> a wireframe uses simplified elements to represent basic content areas and the elements of page navigation. Designers keep the design simple and abstract in order to avoid getting involved too early in conversations about colors, fonts, and image choices. Bars, blocks, and fields of gray serve to communicate the essential structure and functionality of the site.

Initially, a team might work with pencil on paper, moving on to <mark>low-fidelity</mark> wireframes, which serve to quickly convey the different page types that might appear in a site. These simple diagrams explain the big differences and broad concepts. As work progresses, <mark>high-fidelity</mark> wireframes are produced, which provide more detail about specific content and the types of interactions that lead from one page to the next.

Log in

Job Dashboard

New Job Post: Step 1

New Job Post: Step 2

New Job Post: Step 3

LOW-FIDELITY WIREFRAME In addition to showing where basic blocks of information will fall, a low-fidelity wireframe can be used in site maps, user flows, and other UX (user experience) documents as simple depictions of page layouts. Design: Yvonne Weng, Barrel, 2013.

ACTIVITY SETTINGS

Will your activity use supplemental participant data for reporting? — No

When should this activity start? — Immediately

When should this activity end? — I Will Manually End the Activity

<mark>The black "Launch Activity" button is the key action in the wireframe shown here.</mark>

Save Draft   Preview Activity   Discard Activity

Launch Activity

Launching will make this activity ready for fielding.

GRAYSCALE Working primarily in grayscale allows the designer to clearly communicate hierarchy. Design: Yvonne Weng, Barrel, 2013.
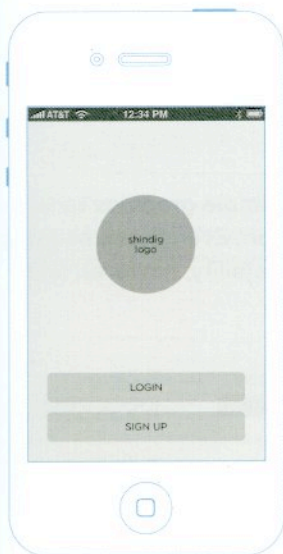
1A SIGN IN/ SIGN UP

On launch
Sign up with Facebook/Twitter/email or log in

2A DRINK DISCOVERY

Main screen after successful sign in for users to:
1. Rate drinks they've had to hone the recommendation engine to their taste
2. Check-in to a drink they're enjoying now
3. Find out more about drinks

2A.1 Field for search and narrowing by drink category
2A.2 Scroll horizontally to change results list to show: drink recs, friends' drink feed, your likes, dislikes, wants.
2A.3 List of drinks, sorted by level of recommendation
2A.4 Actions: rate drink (like/dislike), add to want list, check-in.
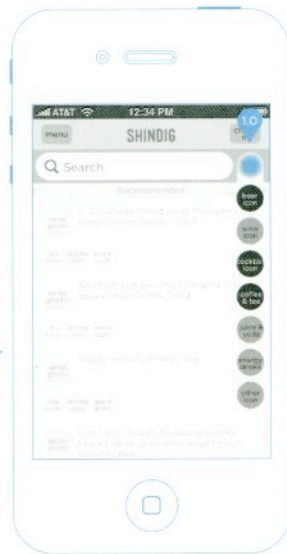
2B DRINK DISCOVERY (DRINK TYPE)

On tap, drink category filters animates down. Tap to select/deselect. User may choose multiple. Tap outside icons to hide icons.

On first-time use, Shindig should ask user which categories they're interested in, and automatically select/deselect filter to their preference.

Each drink category is color-coded—same coloration used throughout app

HIGH-FIDELITY WIREFRAME As a project develops, designers create wireframes with greater degrees of accuracy, including flowing in real content. The flowchart excerpted here describes the architecture of the app and the path a user might use to travel through it. Design: Meng He, 2012.

READ MORE >> Yvonne Weng, "Wireframes the Barrel Way," *Barrel* (blog), July 3, 2013, http://www.barrelny.com/blog/wireframes-the-barrel-way/.

1C NAVIGATION

Slide navigation to preserve as much screen real estate as possible for browsing. Allows user to quickly get to the core functions of the app.
1C.1   First search for drink on 2C Drink Discovery to check-in.

INTERACTION ELEMENTS

To create wireframes efficiently, designers employ simple graphics to represent commonly encountered forms of interaction. Even these seemingly neutral components are designed with a certain sensibility, however, and express the designer's point of view.

control buttons

breadcrumbs

search form

buttons

bubbles

collapsible box

loading

drop-down
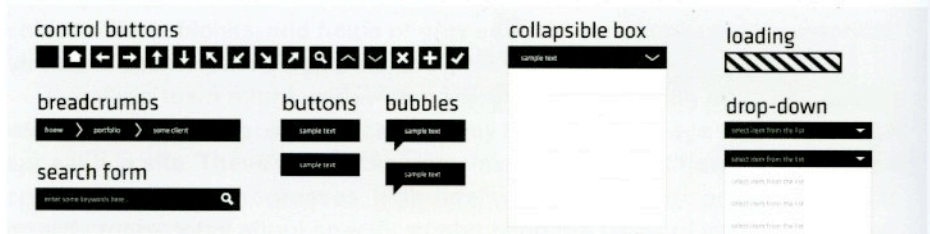
USER INTERFACE SET Offered for free download (with attribution), these interface elements have a clean, flat style. Design: MediaLoot, 2010, http://medialoot.com/item/massive-web-button-and-ui-set/.

MOUSE CURSORS IN CSS The cursor property in CSS specifies the type of cursor to be displayed when pointing to an element. Each cursor represents a different interaction.

cursor:auto
AUTO (DEFAULT)

cursor:crosshair
PRECISE POINTING

cursor:auto
AUTO (DEFAULT)

cursor:hand
GRAB CANVAS

cursor:e-resize
WINDOW RESIZE

cursor:help
HELP

cursor:draw
FREE DRAW

cursor:search
SEARCH

cursor:move
ELEMENT MOVES

cursor:pointer
LINK

cursor:move
ELEMENT MOVES

cursor:resize
DIAGONALLY RESIZE

cursor:progress
WAIT

cursor:text
INPUT TEXT

cursor:paint
FILL WITH COLOR

cursor:v-resize
VERTICAL RESIZE

WIREFRAME ELEMENTS When creating a wireframe, designers employ standard elements to represent how a user is expected to interact with the material.
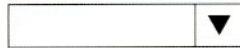
TEXT BOX A box in which to enter text or numbers.

BUTTON A virtual equivalent to a push button; the rounded corners imply dimension and have become associated with buttons.

HYPERLINK Text marked with underlining and/or color indicates that clicking it will take the user to another screen, page, or targeted location.

DROP-DOWN LIST A menu of items from which the user can select one. The list normally only displays its content when a special button or indicator is clicked.

**RADIO BUTTON** A list of items that allows just one item to be selected. The name derives from the row of mechanical push buttons on a car radio receiver. Selecting a new button from the list triggers the deselection of any previously selected button.

CHECK BOX This box indicates an "on" or "off" condition. More than one box in the list can be selected simultaneously. Sometimes it appears shaded or dashed to indicate a mixed or intermediate state.
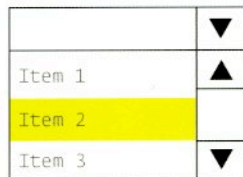
COMBO BOX A combination of a drop-down list and a single-line text box, which invites the user to either type a value directly into a box or choose from the list of existing options.
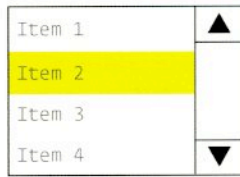
LIST BOX A list box allows the user to select one or more items from a list contained within a static, multiline text box.

MOUSE VS. FINGER During wireframing, designers must allow enough space for interaction to occur. A mouse pointer can accuratley interact with objects as small as 1px, while an average user's finger will need 50px in height to perform the same interaction when tapping a touch device.

Item Link

Item Link

Item Link   50px

OVER STATE Subtle changes when the mouse hovers over an object (over state) indicate that an element triggers an interaction on the web.

NO OVER STATE

MENUS

A menu is one of the most common navigation structures; it typically consists of an array of choices, each one serving as a link to different content. It can be vertical or horizontal, hidden or persistent. Type is an essential ingredient in the construction of a clear, concise, understandable menu, because most menus include lists of words. Images, icons, and design elements such as boxes, bubbles, and lines are also ubiquitous components of menus and other navigation structures. This language—both verbal and visual—must be edited for clarity and designed for readability. The styling, position, and behavior of navigation elements must make sense to users.

SHOWING INTERACTION
On screen, designers use underlines, color changes, and animation effects to indicate that a line of type is a navigation element.
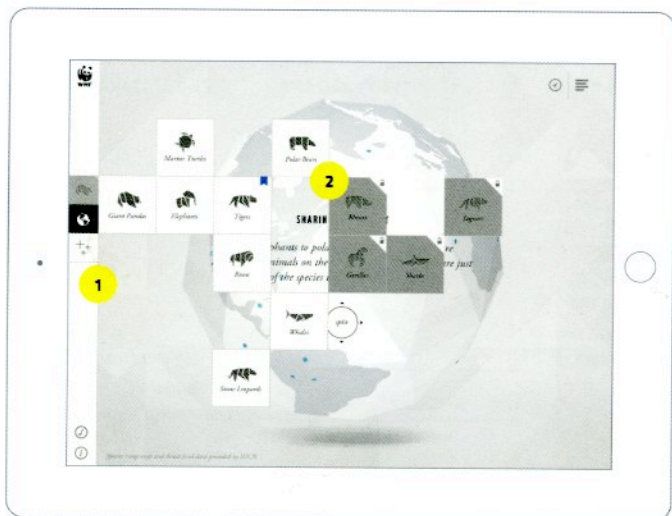
click to begin   link here   link here

VERBAL CALL TO ACTION   **COLOR**   **ANIMATION**

ICONS AS WAYFINDING This app is designed like a set of cards arranged on a table. The icons serve as navigation. The user can swipe left, right, up, or down to move from one screen to the next. Design: AKQA, 2013.

1

The persistent menu on the left displays a drop-down submenu that lets users pick an animal to explore.

2

Each card can be accessed from the drop-down menu, with the exception of a few that are unlocked after the user has visited others.

PERSISTENT This menu is always present, usually on the left side of a page. Typically exposing all options, its most common use is in a tabbed menu.
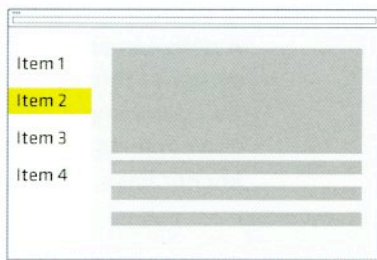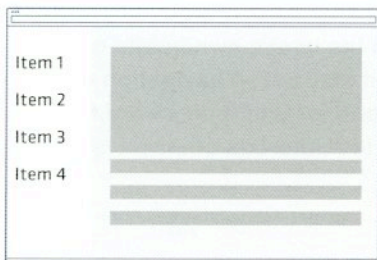
DROP-DOWN These menus commonly appear with horizontal navigation, providing deeper options beneath each section in the primary navigation.
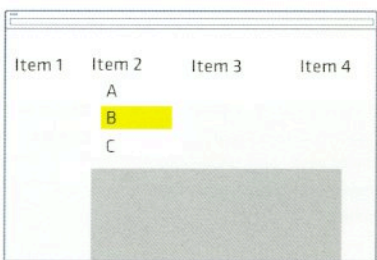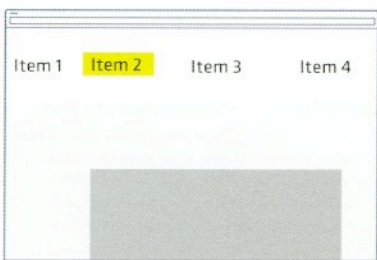
SLIDER This device functions like a drawer, sliding in and out of a hidden space anytime it is needed. It could be considered a variation of a drop-down menu.
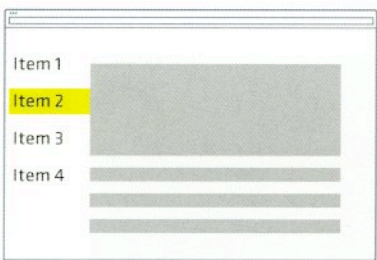
TABS Always present, tabs typically appear along the top edge of the screen. Usually exposing all options, tabs are based metaphorically on the stepped tabs of a series of file folders or tabs in a notebook.
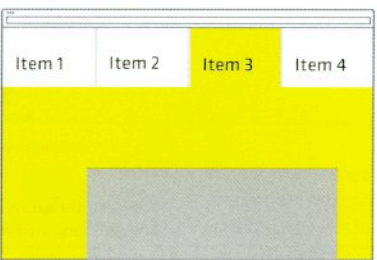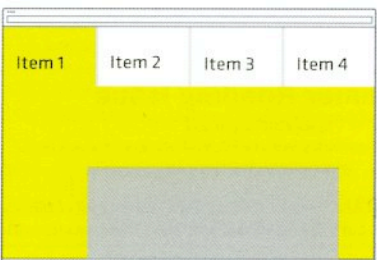
TYPE AS NAVIGATION

In a website, a <mark>path</mark> is a consistent, predictable route that connects content. A path can emerge from the user's own habits or it can be created by a designer through explicit text-based navigation elements. A breadcrumb trail depicting a path is one form of type-based navigation, but typography can serve as navigation in numerous other ways as well, including text links, anchor links, and tags.

Text links

TEXT LINKS A word or phrase surrounded by <a href> tags creates a link to another location. These can be styled with color, underlines, mouseover states, and other means.

Category1/**Article2**

BREADCRUMB A string of text shows the user their position within a path or sequence.

Anchor link

ANCHOR LINKS Named anchors take the user to a specific place on a page. These are usually styled like other text links.

Category 1, Category 2

TAGS Popular on blogs, tags apply categories to an article or entry, creating a kind of page-by-page index for the site. Tags are usually separated by commas and appear in simple lists.


ARTICLES   COLUMNS   BLOG   TOPICS

A LIST APART

Issue Nº
378

Summer Reading Issue

by **ALA STAFF** · *July 09, 2013*

Published in Browsers, Content Strategy, State of the Web, Mobile/Multidevice, Responsive Design, Interaction Design - No Comments (yet)

Presenting the second annual *ALA* Summer Reading Issue—a deep pool of editor's picks from the recent archives of *A List Apart*, sprinkled with some of our favorite outside links.

A LIST APART uses tags to categorize articles under more than one category. Creative direction and design: Mike Pick, 2013.

READ MORE >> Patrick J. Lynch and Sarah Horton, *Web Style Guide*, 3rd ed. (New Haven: Yale University Press, 2009), http://webstyleguide.com/wsg3/4-interface-design/2-navigation.html.

HIDE AND REVEAL

The principle of <mark>hide and reveal</mark> is at work in numerous contexts within interface design. The ability to display massive amounts of data in a small space by burying information and then bringing it to the surface is a fundamental feature of interactive media. Layering information and allowing the user to choose what content appears gives designers the opportunity to work with larger type than is possible on a static surface.
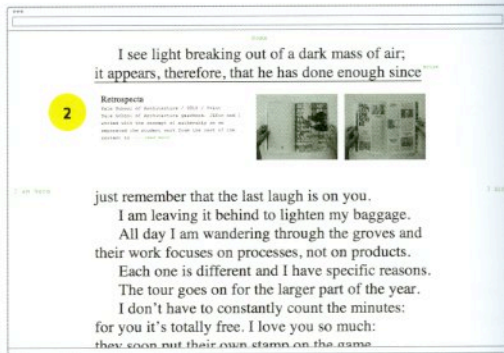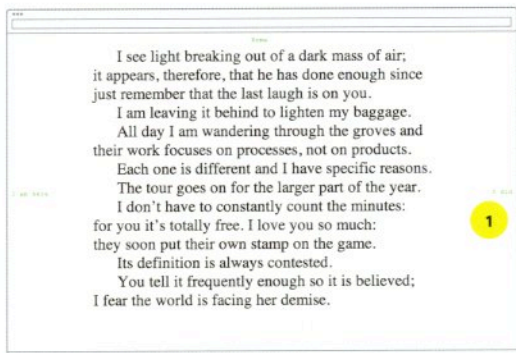
WRITING AS NAVIGATION This innovative portfolio website greets the user with a set of sentences that serve as navigation. Each line of text can be clicked and leads to a preview of a piece in the designer's portfolio that can be viewed in its own page after the jump. Design: Juan Astasio, 2011, http://www.astasiototal.com/astasiototal_2011/.

1 The green text on either side of the page creates two areas of navigation, leaving the center of the page open for reading.

2 Mouseover underlines the sentence and reveals a category for each portfolio piece. On clicking, the line spacing opens up to show an image and a description.
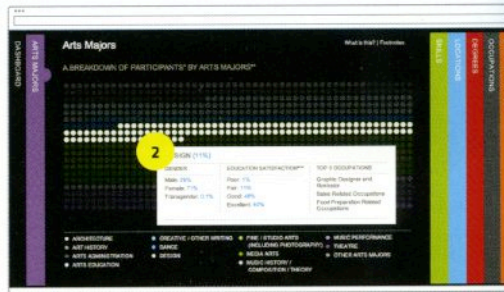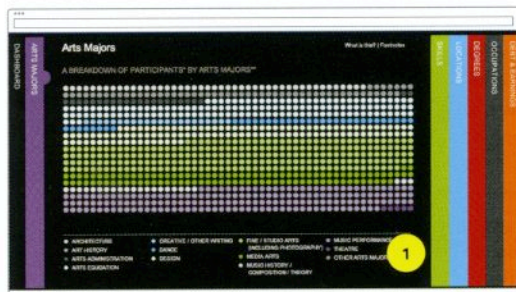
SNAAP The Strategic National Arts Alumni Project (SNAAP) looks at what art students do after graduation. These visual representations of the data are displayed in a compact space; information is revealed as certain areas are moused over. Indiana University, "SnaapShot 2011," 2012, http://snaap.indiana.edu/snaapshot_2011/.

1 The starting page shows 100 percent of the participants in the study, divided into color-coded percentages.

2 Mousing over a specific segment reveals a box with more information. Mouseover also darkens the other segments, which are not highlighted.
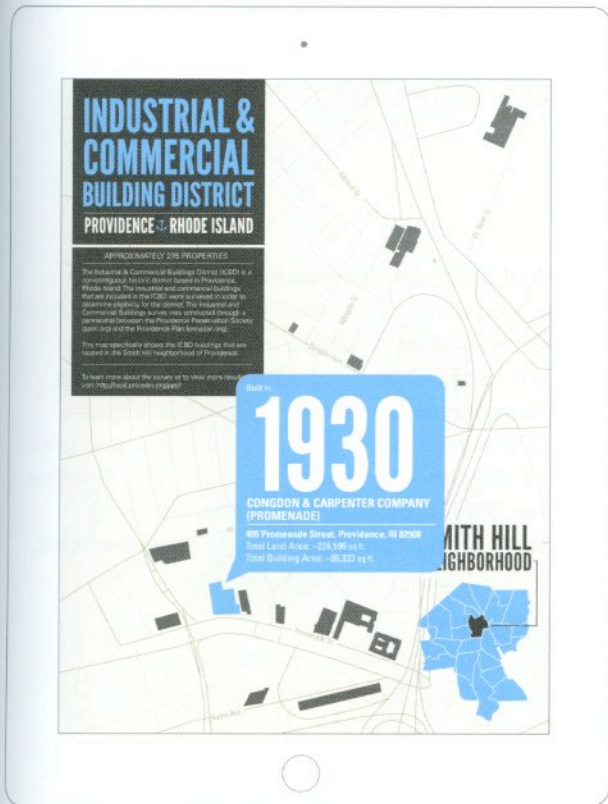
TOO MUCH INFORMATION If all of the content contained in this interactive map was displayed at once (above), the map would be impossible to read. Through the principle of hide and reveal, the designer is able to tell a story about every historic building on the map. Data source: The Providence Preservation Society and The Providence Plan, "Providence Preservation Society Industrial Sites and Commercial Buildings Survey 2001–2002," http://local.provplan.org/pps/. Design: Sarah Robertson, 2012.

BEHIND THE FENCE Chapter titles are revealed by tapping the chain-link fence in this iPad app about an adolescent's list of forbidden books. Produced with Adobe DPS. Design: Richard Blake, 2013.
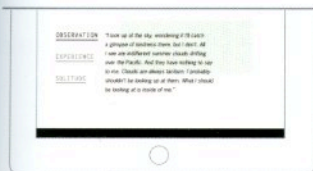
NOW YOU SEE IT Text is revealed when the user taps a title in this iPad app. Produced with Adobe DPS. Design: Amy Lee Walton, 2013.