FARMUR

The Urban Farmer's Guide

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Graduate School of Web Design & New Media
Midpoint Proposal

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Motion Graphics/UX Design

"I know the pleasure of pulling up root vegetables. They are solvable mysteries."

– Novella Carpenter, Farm City: The Education of an Urban Farmer

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Thesis Abstract

In the United States, there is a growing number of people working to reconnect to their food sources and get involved in the local food movement. However, over 80% of United States population lives in an urban environment not conducive to growing, or is uncertain about avenues for involvement.[1] Misconceptions exists, such as that food cannot and should not be grown in urban areas due to the nature of urban environments. Research also revealed a lack of rich, interactive media that educates about urban agriculture.

In an effort to educate the public about urban farming, my thesis will provide a variety of model urban farms to explore and a simple planning tool. All content will be aimed at introducing people to urban farming and how they can engage in both small and more significant ways.

My thesis will be presented as an app for the iPad and incorporate 1 motion graphic video on the history and future of urban farming, 4 interactive urban farming environments, over 20 urban farm elements to learn about, and a tool to save content users discover while they explore.

"All content will be aimed at introducing people to urban farming and how they can engage in both small and more significant ways."

The content presented in the app will provide easy to understand information about urban farms and present many different forms the urban farm can take. The app encourages interaction and exploration by allowing users to rotate the camera between environments with a swipe gesture. Each new environment will be a unique angle of the city block, but with a different size urban farm and what is typically found on these farms. This shows the user the broad spectrum of possible ways to engage in urban farming.

Statement of Interest

I chose to pursue my MFA because I thought it would better prepare me to tackle the types of problems I want to solve. I've never been interested in producing products that make lots of money, but instead help in an inexpensive or creative way. When I've finished this program I plan to continue working with organizations that are trying to take on social problems but may not know how to utilize new media to realize their objectives.

Two summers ago I volunteered at a botanical gardens, and participated in their gardening initiative that both donated to local shelters and informed the local community about gardening on their own land. I also grew my own garden and, at one point, considered switching into a horticulture track for my future. However, given my background in media production, I decided to pursue a track that would allow me to hone those skills in order to support non-profits and organizations working for causes that I believe in.

My first goal for the program is to build a motion graphics portfolio that well-positions me in a field that prizes the work I have done over what I say I can do. Second, I want to bolster the "call to action" portion of my media.

Since my goal is to ultimately inspire social change and push for people to act, I must come out of the program with an interactive and modern approach that motivates a user to act. With my ipad app explaining urban farming, using motion graphics and interactive media, I will be utilizing my skills to educate and inspire action. My thesis project reaches my goals through: motion graphics that will inform the public about urban farms; a mobile app that provides interaction with rich media; and tools that will allow people to understand urban farming in more depth.

"My goal is to ultimately inspire social change and push for people to act..."
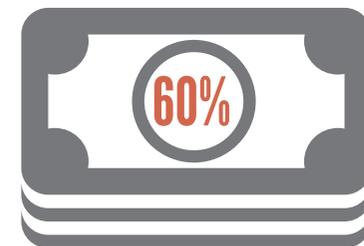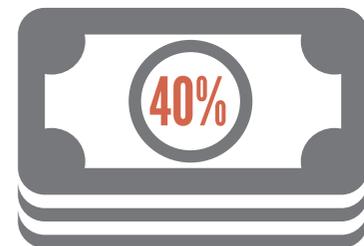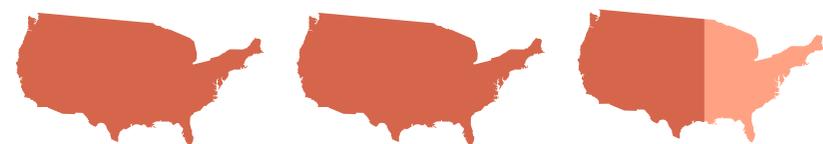
Research

52%

It's estimated that over 52% of the world's population lives in cities, and is only increasing rapidly.[2]

800 million people are involved in urban agriculture world-wide and contribute to feeding urban residents. The population of the United States is just 311 million. That's 2.5 times the population of the USA.[3]

40%

60%

Low income urban dwellers spend between 40% and 60% of their income on food each year.[4]

6,600

Tons of food that must be imported each day by 2015, when 26 cities are expected to reach populations of 10 million or more.[5]

30-40%

The amount a family's produce needs can typically be offset by eating food grown in their own garden.[6]

Thesis Project Proposal

The project I am developing is, first and foremost, an educational experience that compels a user to learn through action and reaction. Through my research on urban farming I found a persistent lack of rich media to educate people on basic concepts and how to get started on their own. This thesis seeks to fill a need in an area that is yet to be developed. Intended as a iPad app, my project will offer an interactive introduction to urban farming in order to educate and inspire people to get started on their own. The content will be based on common practices in urban farming as well as new ideas that have emerged. Users will be able to save elements they find intriguing or inspirational into a list with their own notes. If the user wants to share their ideas, or start work on their own urban farm, they can print or email the list they created. There will also be a motion graphic to illustrate the history and future of urban farming.

Concepts will be explored through an interactive 3D rendering of a city block. Users will be able to use natural multi-touch gestures to navigate through the model and the content. Utilizing the Corona SDK to handle the creation and deployment of the app, I will be using pre-rendered motion graphics to enable the navigation between the four urban farming sections and the main menu. When a user swipes left or right, the appropriate animation will play and the view will rotate to adjust to another angle. If a user pinches to zoom, the appropriate animation will play to take the user in or out of the scene. Tapping on an item in a scene will open an overlay with an image and a text description. If users wish to save items for later viewing, they will tap the save icon and access it in the "Idea Board."

While exploring other gardening apps and researching urban farming I noticed a complete lack of rich-media material to explore. While there are apps to help track and grow the plants in a garden, there are no apps explaining the basics of what is appropriate to grow the plants in. My app aims to offer vision, inspiration, and support to people in urban environments that want to grow their own food, or at least desire to learn about the concepts. Offering visual models of various scale urban farms will hopefully energize users to start at any level they feel comfortable.

"My app aims to offer vision and motivation to people in urban environments that are wanting to grow their own food"
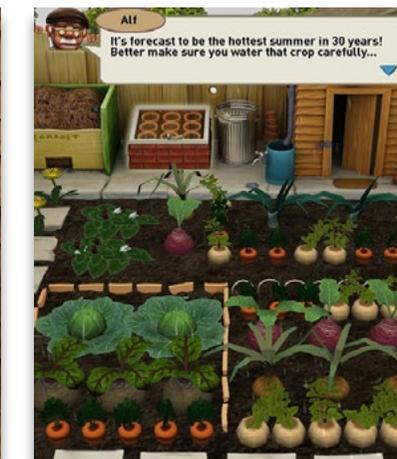
Competitive Analysis

Here are Farmur's five major competitors. All bring the topic of gardening to life in different ways and for different reasons.

My Veg Plot

iPad Game

Highly interactive and engaging, this app explores gardening in a backyard through an approach that is closest to my own design. Aimed at educating the user through interactive garden games, My Veg Plot is informational and fun to use. The concepts covered are mostly aimed at learning to grow and tend a garden, not at designs of gardens.
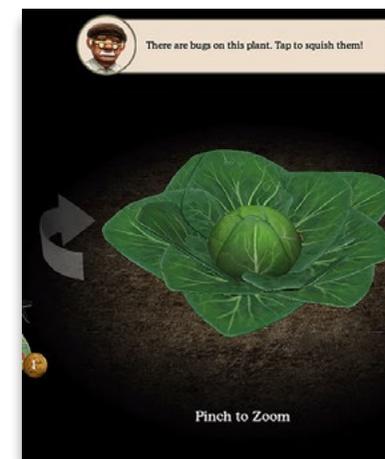
Pros:

- Interactive learning
- Mini-challenges that earn rewards
- Unlock tips as you play

Cons:

- Very basic information
- Slow moving, and costs to speed up
- UI is a little hard to tell which parts are interactive at times

Competitive Analysis

Gardening Toolkit HD

Gardening Toolkit HD is an educational tool on gardening and growing vegetables and other plants. The design is attractive and well thought out, but the majority or the content is text. There is a large searchable database and gardening tracking feature that could use a better visual layout and more interactivity.
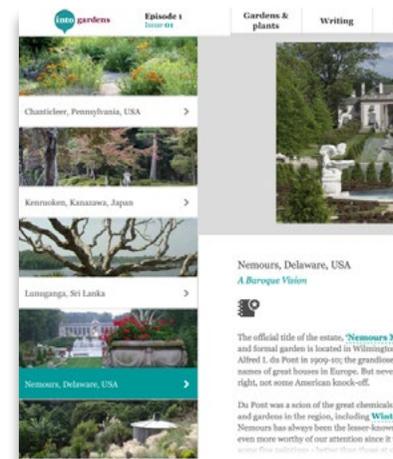
Pros:

- Garden tracking
- Large database to search
- Planting instructions
- Sharing features

Cons:

- Static content mainly
- Design has limited interactivity and aimed towards reading most content

intoGardens

An iPad magazine has lots of information and imagery focused on gardening and learning. Educational and attractive in its simplicity, this app has plenty to explore. Being a magazine, new issues can be purchased as they are created for the user to download and read. This app is informative and well thought out.

Pros:

- Garden advice and tips
- Pictures and locations to inspire the gardener
- Insightful articles
- Educational, while remaining fun to use

Cons:

- No garden planning or building feature
- No rich interactive media
- No motion graphics to explain topics

Competitive Analysis

## My Potager   iPad App

A garden planning app designed to help learn about vegetables, herbs, fruits and how to plant them. A basic planning function is included to help plot out the garden. A calender function is useful for knowing when to harvest different items in the garden.

Garden Plan Pro   iPad App

G arden Plan Pro is a strong application for planning and tracking a garden plot. It assumes there is an interest in gardening and is marketed at the user who is serious about gardening. At $20 this app is seating itself at the higher end of the market. This app is focused on use as a utility, and serves this purpose well.
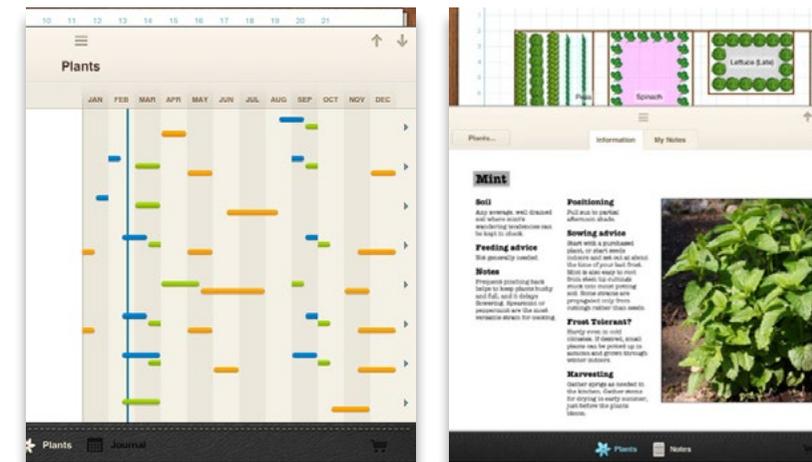
Pros:

- Database to learn about fruits, vegetables, and herbs
- Calender to track harvest times
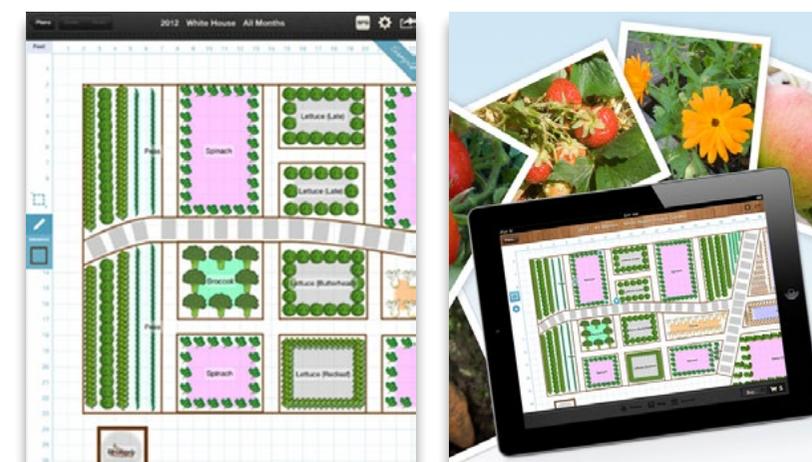- Plotting maps

Cons:

- Very basic toolset
- Features are not very useful without outside information
- Very little interaction

Pros:

- Garden mapping
- Garden tracking
- Location adaptable
- Planting reminders
- Intelligent advice

Cons:

- No rich media or motion graphics to explain concepts
- Design style is lacking

Competitive Matrix

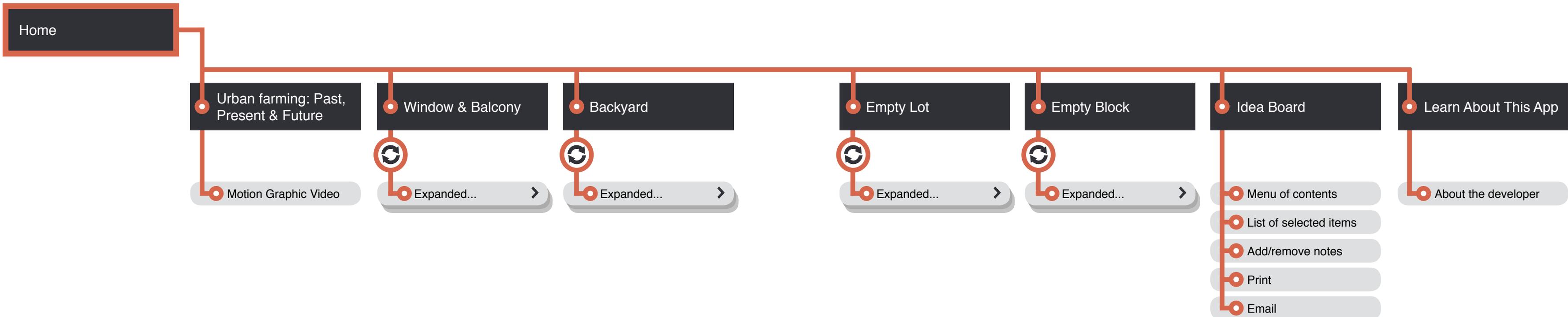|	Garden Plan Pro iPad app	The Gardening Toolkit iPad app	intoGardens iPad App	My Potager iPad App	My Veg Plot iPad Game	Farmur iPad App
Educational motion graphics					🌿	🌿
Interactive model garden(s)	🌿	🌿			🌿	🌿
Urban farming history						🌿
Print/email ideas & notes	🌿	🌿	🌿	🌿		🌿
Urban agriculture focus					🌿	🌿

Unique Positioning Statement

My thesis is positioned to inform my target audience about urban farming through rich interactive media, with a focus on the design of different gardens and urban farms. Using the multi-touch capabilities of the iPad, the information will incorporate many natural gestures already familiar to mobile users. My app will focus on introducing the many different growing methods, designs, and innovative solutions that modern urban farms have learned to use. Whereas most of the competition is focused on growing and tracking plants in a garden, my focus will be on what these plants are being grown in. Along the way users will learn about historical urban agriculture and its growing future.
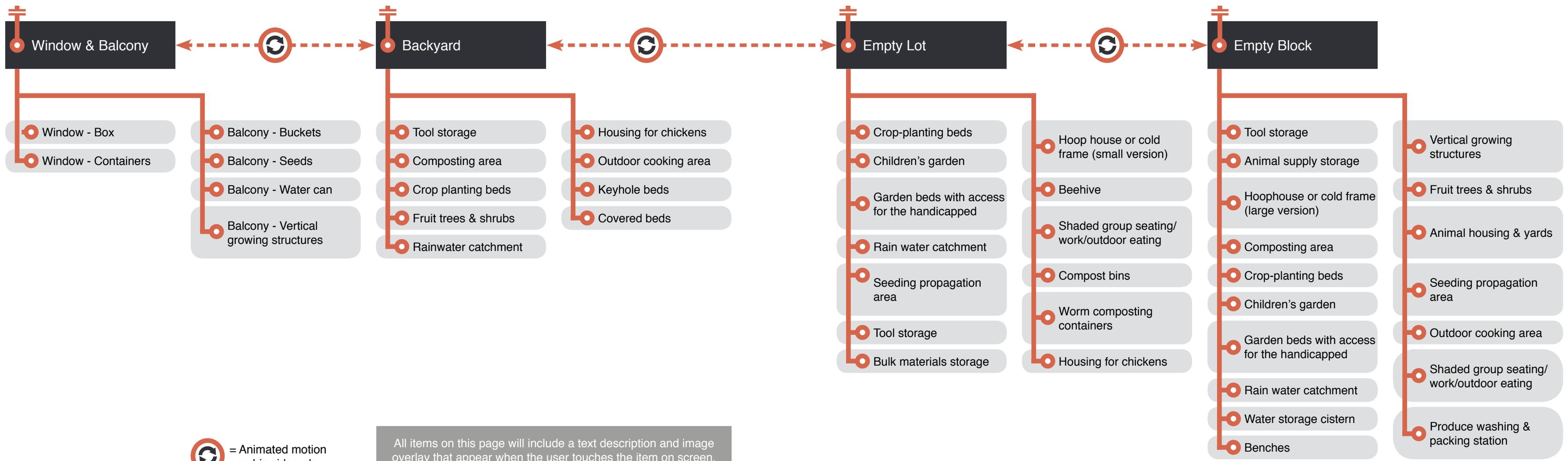
Throughout the motion graphics and interactive model, users will be learning about urban farming concepts and be allowed to save these inspirations for later use. By educating the public on the concepts behind urban farming my thesis will attempt to inspire people to get involved in the food supply chain within their community. Although there are sites and apps that explain gardens with tips and techniques, my thesis will go further to create an rich and interactive environment that makes the concepts come to life.

"My focus will be on what these plants are being grown in."

Information Architecture 1/2

Home

- **Urban farming: Past, Present & Future**
  - Motion Graphic Video
- **Window & Balcony**
  - Expanded... ›
- **Backyard**
  - Expanded... ›
- **Empty Lot**
  - Expanded... ›
- **Empty Block**
  - Expanded... ›
- **Idea Board**
  - Menu of contents
  - List of selected items
  - Add/remove notes
  - Print
  - Email
- **Learn About This App**
  - About the developer

= Animated motion graphic video plays

Information Architecture 2/2

Window & Balcony

- Window - Box
- Window - Containers
- Balcony - Buckets
- Balcony - Seeds
- Balcony - Water can
- Balcony - Vertical growing structures

Backyard

- Tool storage
- Composting area
- Crop planting beds
- Fruit trees & shrubs
- Rainwater catchment
- Housing for chickens
- Outdoor cooking area
- Keyhole beds
- Covered beds

Empty Lot

- Crop-planting beds
- Children's garden
- Garden beds with access for the handicapped
- Rain water catchment
- Seeding propagation area
- Tool storage
- Bulk materials storage
- Hoop house or cold frame (small version)
- Beehive
- Shaded group seating/ work/outdoor eating
- Compost bins
- Worm composting containers
- Housing for chickens

Empty Block

- Tool storage
- Animal supply storage
- Hoophouse or cold frame (large version)
- Composting area
- Crop-planting beds
- Children's garden
- Garden beds with access for the handicapped
- Rain water catchment
- Water storage cistern
- Benches
- Vertical growing structures
- Fruit trees & shrubs
- Animal housing & yards
- Seeding propagation area
- Outdoor cooking area
- Shaded group seating/ work/outdoor eating
- Produce washing & packing station

= Animated motion graphic video plays

All items on this page will include a text description and image overlay that appear when the user touches the item on screen.

Technical Specifications

I intend to employ several different technologies to finish my thesis project. The target platform will be an iPad with access to WiFi to download the app. Corona SDK will be used to code the app and interaction. Maya will be used to create and render the 3D city block, while Cinema 4D & After Effects will be used to create the motion graphic on the history and future of urban agriculture.

Proposed Medium

- Adobe After Effects, Illustrator, Photoshop & Fireworks
- Cinema 4D
- Maya
- Corona SDK (Lua)

Technical Specifications

- iPad 2-4
- iOS 6+
- WiFi

Data Sources

Resources I intend to use in order to offer the most relevent and accurate information to my users.

Buildings, Structures & Plans

- USDA National Agricultural Library
- USDA The People's Garden
- Let's Move Campaign Website
- EPA Urban Agriculture Resources
- Cornell Gardening
- University of Maryland Extension

Plants & Growing

- Ontario Ministry of Agriculture and Food
- Gardenology
- We Farm America

Target Audience

The primary target audience for the motion graphic and tools are 18-30 year olds familiar with mobile devices, live in an urban environment, interested in local communities, food deserts, food supply, and are potentially curious about starting a garden or a community farming initiative. This app will provide information to newcomers, but also seek to inspire those already gardening to try new things within their farm. Although the toolset can be used for a broader audience, the main users will fall within these categories and have access to an ipad.

Althea Kemmer   Nick Smith   Darryl Gilland

Persona 1/3

"I've gardened before, but I don't know what methods are different in an urban environment. I love learning, and if you make it fun, I'm sold!"

Name:
Althea Kemmer

Age:
26

Gender:
Female

Occupation:
Middle school teacher

Location:
Detroit

Education:
Masters

Hobbies:
Gardening, Photography

Apps:
Garden Pro, Craigslist, Pintrest

Althea is a teacher and always looking for new ways to excite her students to learn. She's involved in gardening and very interested in new apps that cover the topic. She's heard of urban farming, but she wants to know more about the topic. This app provides her a crash course in the topic, but in a fun and interactive way.

Althea's Need

Window & Balcony

Window - Containers

Idea Board

Remove Item

Backyard

Empty Lot

Empty Block

Althea has been looking around the internet for information on urban farming. She's going to be starting an afterschool gardening club for any student interested, but she's looking for a way to make the concepts easy to understand and fun for the students. She was starting to believe that only farm games and gardening apps exist when she runs across "Farmur" in the app store. She downloads it and decides to look for ideas in the "Backyard" section.

View animated proof of concept here

1. Althea is presented with the main menu.

2. She selects, "Window & Balcony."

Althea's Need

3. Althea selects the containers sitting on one of the window sills.

4. An overlay menu appears, and Althea reads about container gardening. She then adds this item to her "Idea Board."

5. Althea closes the overlay.

6. Althea drags up the "Idea Board."

Althea's Need
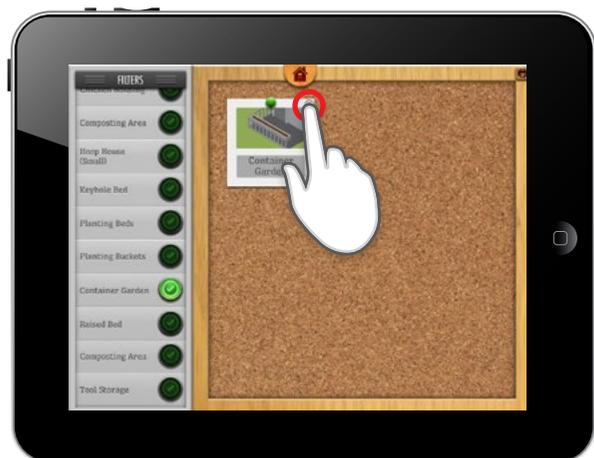
7. Althea sees her last selection is in the idea board, but she no longer wants to remember this. She removes the item from her "Idea Board."
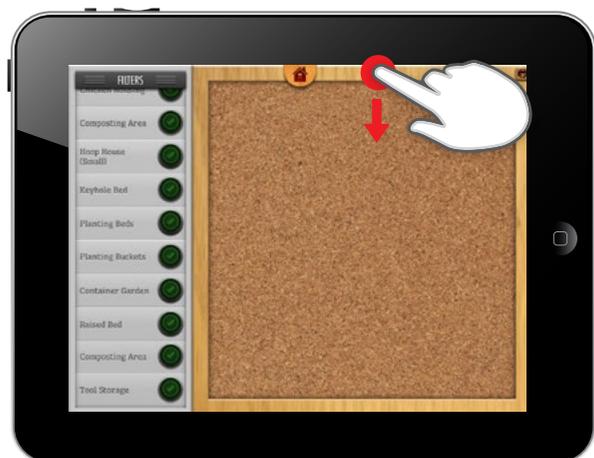
8. After this, she drags the "Idea Board" to make it dissappear.

9. She swipes from left to right. The view then rotates to the "Backyard."
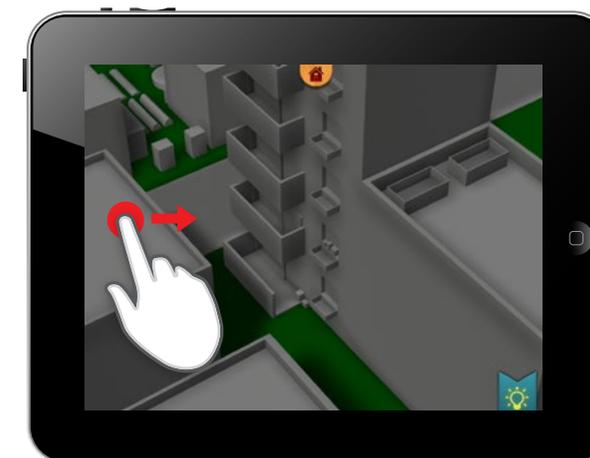
10. She swipes from left to right. The view then rotates to the "Empty Lot."
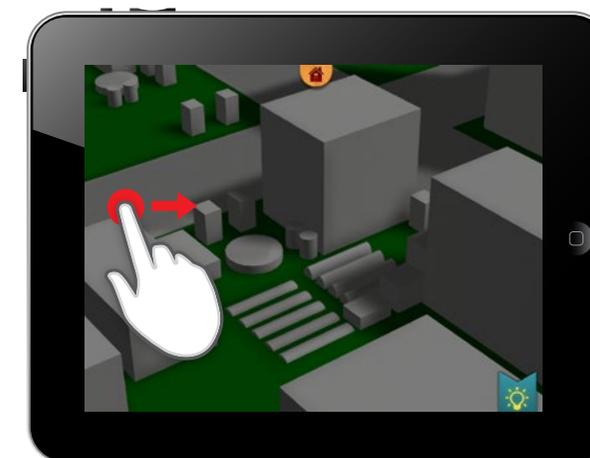
Althea's Need
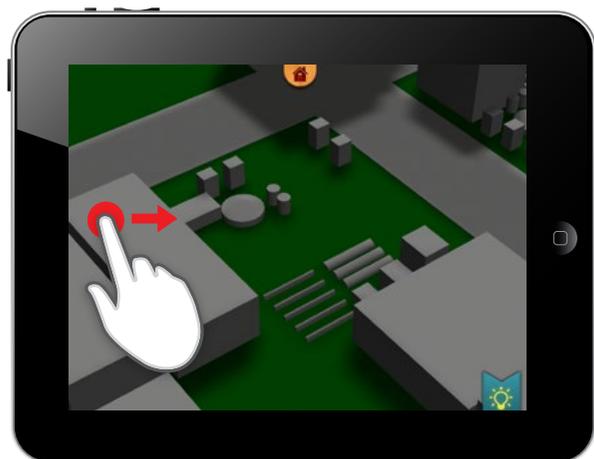
11. She swipes from left to right. The view then rotates to the "Empty Block."
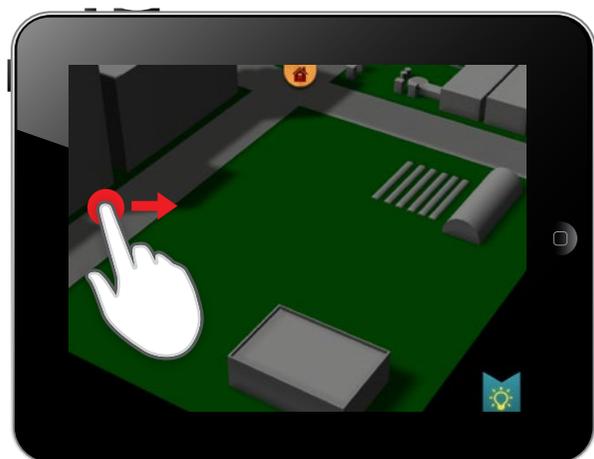
12. She swipes from left to right. The view then rotates back to the "Window & Balcony" section.

13. Althea pinches to zoom out to the main menu.
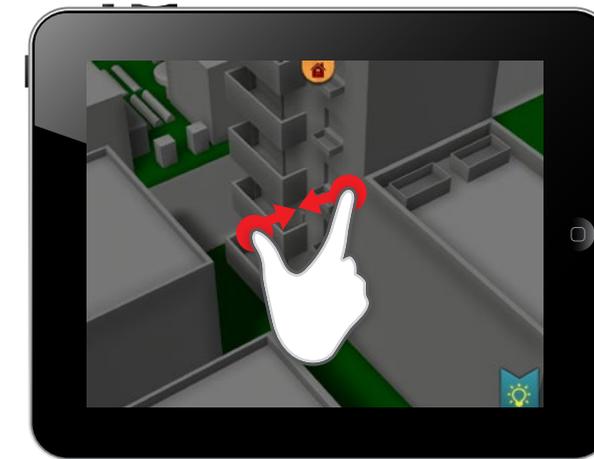
13. Althea is back at the main menu.

Persona 2/3

"I'm not sure growing food in a city is a good idea. I thought farming was best kept in rural areas."

Name:

Nick Smith

Age:

22

Gender:

Male

Occupation:

College student

Location:

New York City

Education:

Bachelors (In Progress)

Hobbies:

Video Games, Movies

Apps:

Hulu, My Veg Plot, Wonders

Nick is a college student and comes from a rural area of the United States. He's worked on farms before and has developed a fondness of growing his own food. He's heard a lot about urban agriculture but he's unsure if an urban environment is really a good place to grow food. What he'd like to know is more about the history of agriculture in urban environments, and if there is any precident for this.

Nick's Need

Home

Urban farming: Past, Present & Future

Nick is worn out and doesn't really want to do a lot of reading right now. He's been researching multiple papers for his college classes this semester and could really use a break from all school work. He finds gardening relaxing and has considered growing some plants of his own. He's from a rural area and always had plenty of space to grow things, but now he's unsure of what how an urban garden would work exactly. He just found the app "Farmur," and the description looked like something he could actually enjoy using to learn. He downloads it, and wants to first check out the video on urban agriculture's history and future.

View animated proof of concept here

1. Nick opens the app on his ipad to the main menu.

2. Nick taps the ticket labeled, "Urban Farming: Past, Present & Future." The motion graphic begins to play.

Persona 3/3

"I love to grow things, but I also want to go to a college in a major city. Is urban farming really a way I can do both, and what is involved?"

Name:

Darryl Gilland

Age:

19

Gender:

Male

Occupation:

Recent high school graduate

Location:

Los Angeles

Education:

High school diploma

Hobbies:

Hiking, Movies

Apps:

Netflix, Instagram, WWF Together

Darryl just graduated high school and loves the outdoors. He's always lived in the city and has worked at a local garden center for the last year He's excited to go to college and he'd like to get some ideas for growing vegetables in a city. He knows the campus housing he will move into has a balcony but he'd like to generate some ideas before he gets there.

Darryl's Need

Home

Idea Board

List Items

Add Items

Filter Items

Add Item

Explore Item

Add notes

Print

Darryl wants to have a few ideas ready before he moves into campus housing. He has already explored the app and added a few ideas to the "Idea Board." Now he needs to review that list and print it.

1. Darryl opens the app to the main menu.

2. He drags the "Idea Board" up to open.
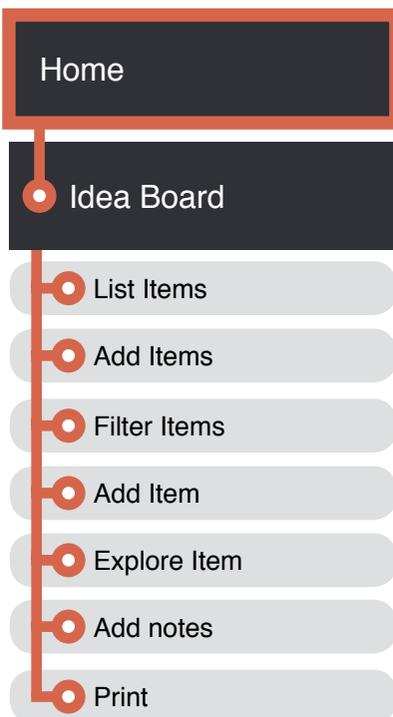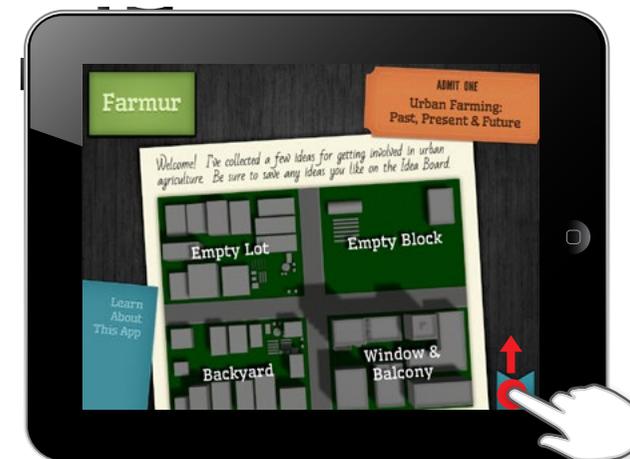
Darryl's Need

3. Darryl views the items in the list.
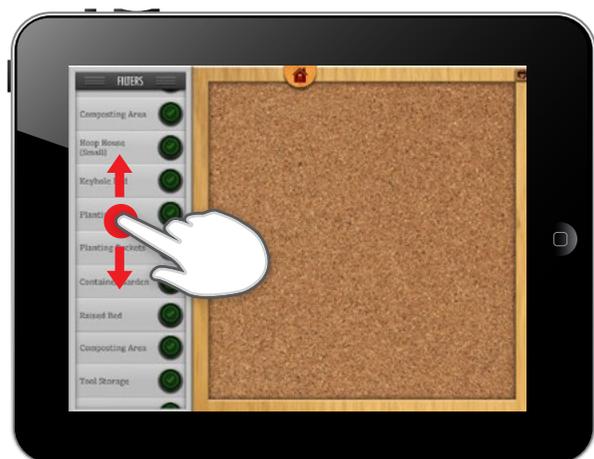
4. Darryl adds two items to his "Idea Board."
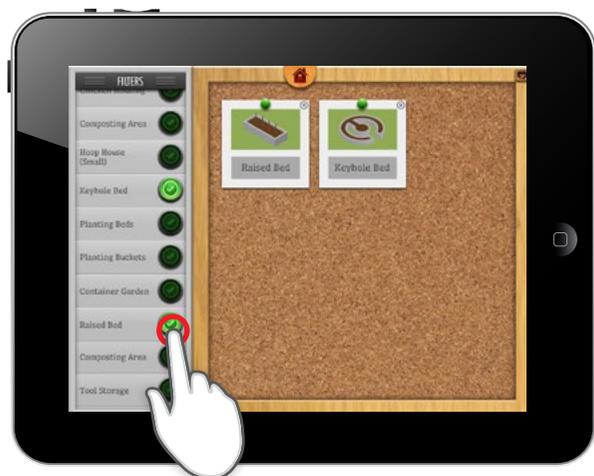
5. He drags the "Filters" tab down to narrow the list.
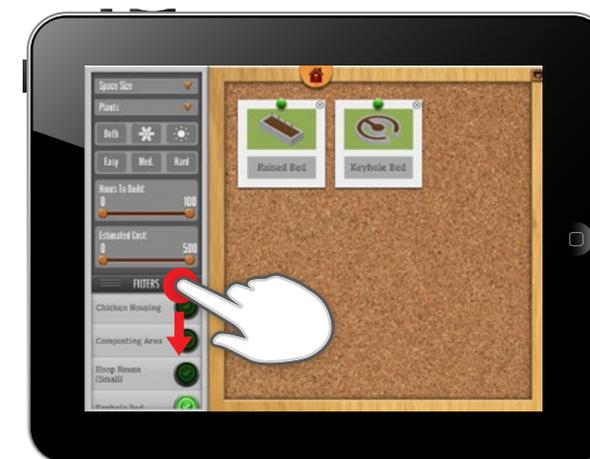
6. He chooses "Both" for temperature, and "Med." for difficulty level.

Darryl's Need
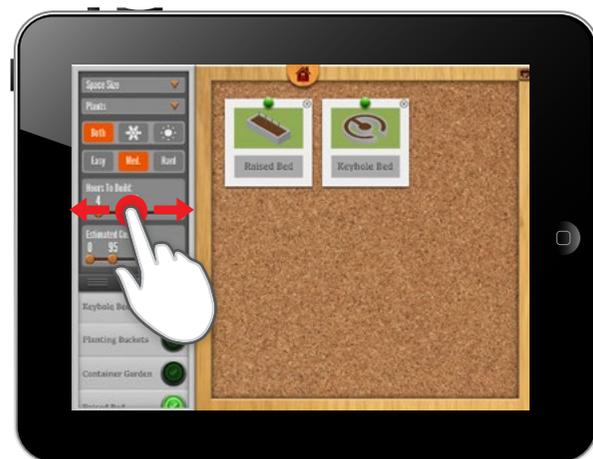
7. Darryl drags the sliders to set a minimum and maximum for his cost and hours to build.

8. He adds "Cotainer Gardens" to his "Idea Board."

9. He taps the "Raised Beds" item and opens up more information.
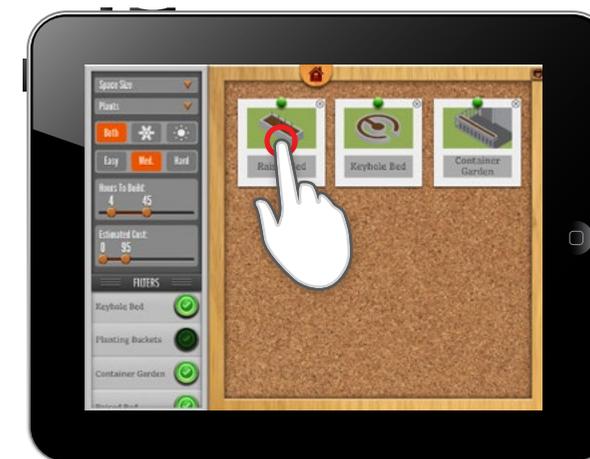
10. He taps the "Notes" section to add a note.

Darryl's Need

7. Darryl types in some seed information that he would like to add to his finished raised bed.

8. He closes the overlay.

9. He taps the print button to print his "Idea Board" with notes.

9. He drags the "Idea Board" closed.

Influences

Name:

J.R. Canest

Occupation:

Motion Designer

Inspiring and creative, J.R. creates motion graphics that tell stories through subtle animations. Much of his work is fast-paced and detailed, while informing the audience without losing them. His work shows how important it is to focus on telling a story, not just moving layers around.
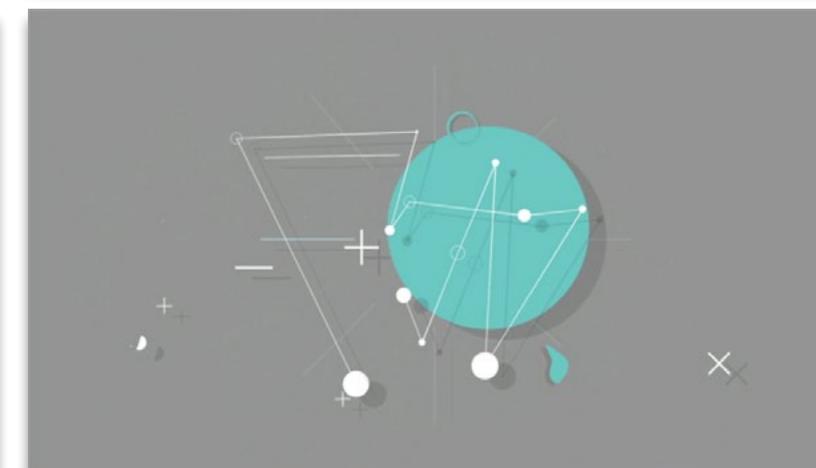
Influences
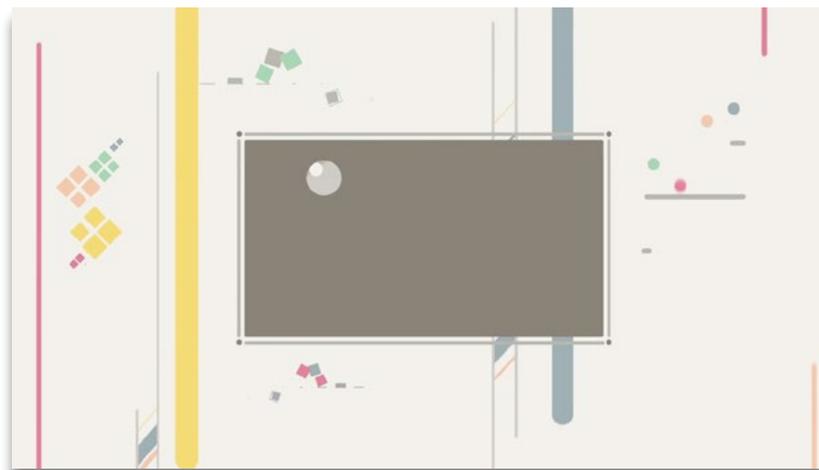
Name:
Phil Borst

Occupation:
Motion Designer

Phil is another motion designer whose work speaks to the importance of paying attention to detail. Timing and pacing are both excellent in Phil's work, as well as his style. He is able to communicate a message in motion without the animation taking over the content.

PHILBORST.COM

Name:
Mike | Creative Mints

Occupation:
Illustrator/UI Designer

Mike produces some amazing detailed illustrations and user interfaces. Incredibly intricate and attractive, there is so much detail that his work can appear real. His work has inspired me to strengthen my design and illustration skills more.

Moodboard
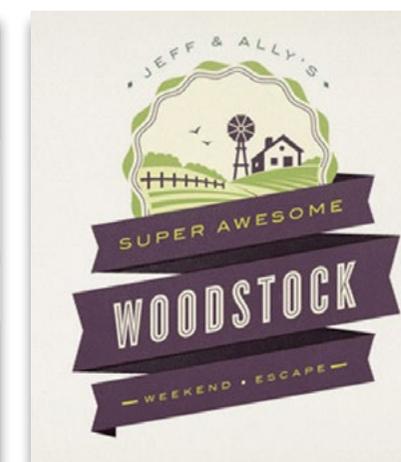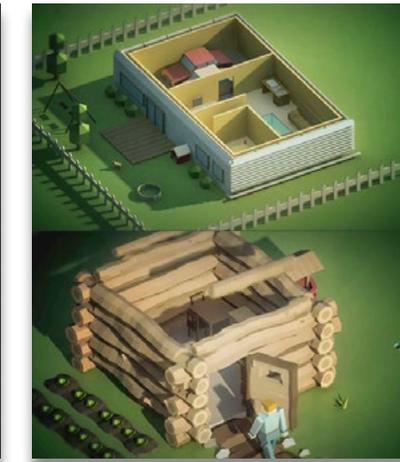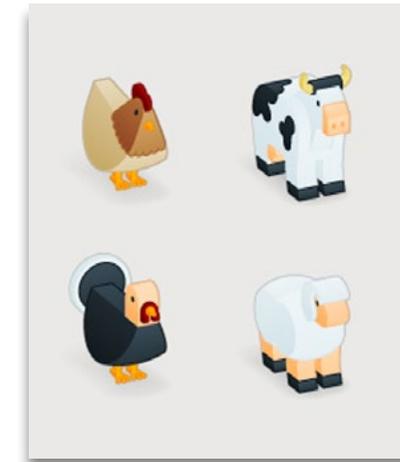
Typography & Colors

HEADLINE **League Gothic** **Aa** ABCDEFGHIJKLMNOPQRSTUVWXYZ
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SUBHEADLINE Wellfleet Aa ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789

Body Text Helvetica Neue Aa ABCDEFGHIJKLMNOPQRSTUVWXYZ
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Timeline

Summer 2011

● WNM 600 MS
Digital Applications
Ruben Mosqueda

● GS 603
Anthropology: Experiencing
Culture

Fall 2011

● WNM 606
Principles of Usability
Annie Choi

● WNM 605
Typography for Digital Masters
Lance Anderson

● WNM 601
Inside Programming
Joseph Elwell

Spring 2012

● GLA 602
Art & Ideology of 20th Century
David Riffert & Paul Delevati

● WNM 608
Web Technology 1
Ethan Wilde

● WNM 622
Digital Capture
Barbara Traub

Fall 2012

● ANM 623 MS
3D Mod.& Animation 1 (Maya)
Edward Kats

● WNM 613 MS
Topics in Motion Graphics
Tim Rice

● WNM 643 MS
Interactive Des. & Concepts
Ryan Medeiros

Spring 2013

● WNM 618
Web Technology 2
Ethan Wilde

● WNM 663
Adv. Topics in Motion Graphics
Meghan Newell

Summer 2013

● WNM 801-9
User Experience 1

● WNM 801-10
Visual Design

Fall 2013

● WNM 801-17
Responsive Web

● WNM 801-19
Motion Graphics

● GLA 610
Balancing Creativity &
Profitability

Spring 2014

● WNM 801-12
Scripting Interactivity & Web
Services

● WNM 801-3
User Experience 2

● GLA 676
Professional Practice for
Designers and Advertisers

Research

Design

Motion Graphics

Software Development

User Testing

Color Key

● Studio
● Elective
● Graduate Liberal Arts
● Group Directed Study

Autobiography

From a young age I have been teaching myself every piece of software I can load, and building/rebuilding every chunk of hardware in my possession. This led me to study Media Production and Business at Calvin College in Grand Rapids, MI. After graduating with my BA in 2008, I worked with various companies around the United States. One of which was a market research company, where I was given the opportunity to create a motion graphics marketing video. I realized that I enjoyed this much more than video production, and devoted more time to teaching myself motion design. Ever since that project I have been working in motion graphics.

Currently, I work as the lead UI/UX designer, web developer, branding, and marketing material designer for a start-up based in SOMA. I also continue to work as a freelance motion graphics artist, and plan to continue to focus my career around motion design.

I have a zealous energy for social justice and a passion for using technology to solve societal issues. My personal interests led me to pursue the realm of new media at the Academy of Art University. Offering a platform of limitless creativity, while allowing substantial messages to be broadcast to the masses, new media has helped me see the potential of interactive motion design.

Motion graphics to me is a way of creating an easily digestible message that makes people want to share and replay. Designing a message that carries the user through it, instead of simply throwing it at them, is a much more effective method. One of my goals is to harness the power of motion graphics to educate, while adding a layer of interactivity to keep the user engaged. If done correctly, this combination has the potential to provide not only entertainment but education as well.

"Designing a message that carries the user through it, instead of simply throwing it at them, is a much more effective method."

Resume

About:

Mark Teater

155 Pearl St. #105
Oakland, CA 94611

markteater@gmail.com

markteater.com

Skills:

- Adobe After Effects
- Adobe Fireworks
- Adobe Illustrator
- Adobe Photoshop
- Adobe Dreamweaver
- Maya
- Final Cut Pro 7
- Apple Motion
- HTML
- CSS3
- Basic JavaScript

Education

Master of Fine Arts, Web Design & New Media
Academy of Art University
San Francisco, CA
Expected May 2014

Bachelor of Arts, Interdisciplinary Studies
Representative Coursework: Media Production, Business, Economics, and Film Studies
Calvin College
Grand Rapids, MI
May 2008

Professional Experience

Spacebar.FM — San Francisco, CA
7/1012 - Present
Design Intern
- UI/UX design for three iphone apps
- Website design and coding
- Deck presentation design for funders
- Logo, social and print materials

Han's Media – St. Louis, MO & Ann Arbor, MI
3/2009 - Present
Motion Graphics/Video Editor
- Motion graphics for commercials, workgroups, schools, and web spots.
- Multi-camera event video editing
- Camera operator, steadi-cam, lights, sound, and teleprompter on location as needed

Emerse Research & Development – Grand Rapids, MI
6/2008-4/2009, 7/2007-9/2007
Video Editor
- Captured, cataloged, and sorted hours of video research into databases for presentations.
- Designed motion graphics for company commercials.
- Developed DVD menus and market research videos
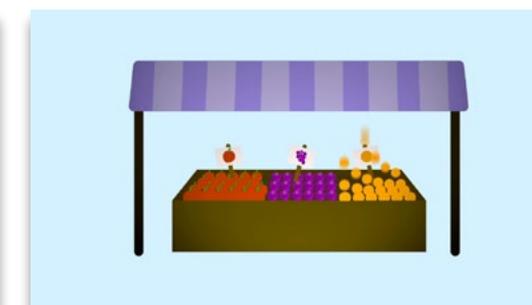
Portfolio

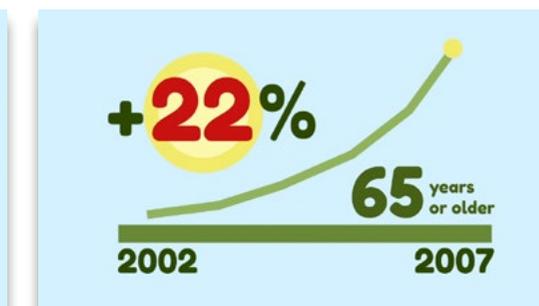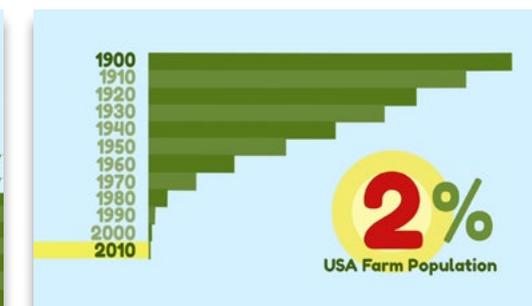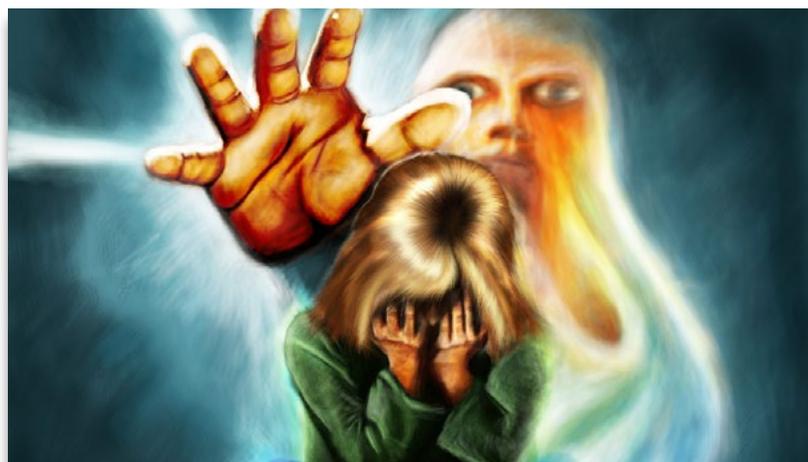**Project:**

MTV Station Identity - Link

Semester:

Fall 2012

Class:

WNM 613 Topics in Motion Graphics | *Tim Rice*

Application:

After Effects, Illustrator
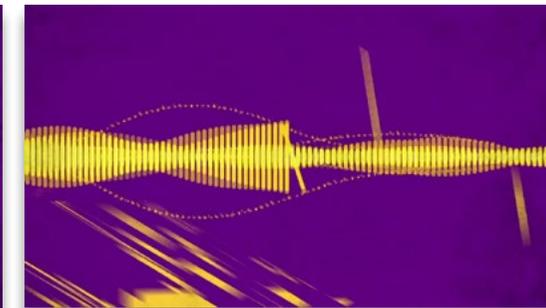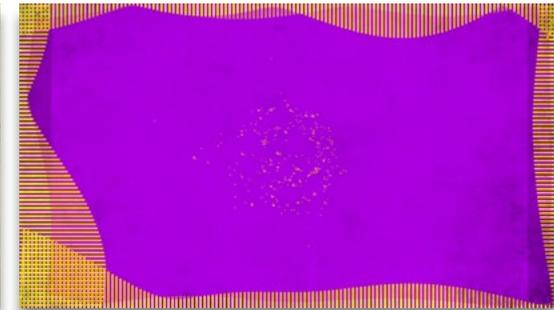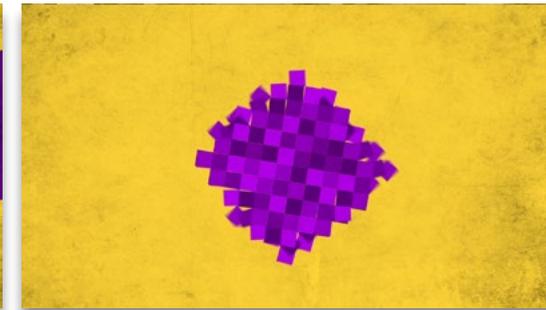
Portfolio

Project:

Final Project - iPad App Commercial - Link

Semester:

Fall 2012

Class:

WNM 613 Topics in Motion Graphics | *Tim Rice*

Application:

After Effects, Illustrator

Portfolio

Project:

Motion Infographic - Changing Face of Farming - Link

Semester:

Fall 2012

Class:

WNM 613 Topics in Motion Graphics | *Tim Rice*

Application:

After Effects, Illustrator

Portfolio

Project:
Illustrate a Poem - Things I Should Have Said - Link

Semester:
Summer 2011

Class:
WNM 600 Digital Applications | *Ruben Mosqueda*

Application:
Photoshop

Project:
Illustrate A Concept for an Organization - Amnesty International, Child Sex Trade - Link

Semester:
Summer 2011

Class:
WNM 600 Digital Applications | *Ruben Mosqueda*
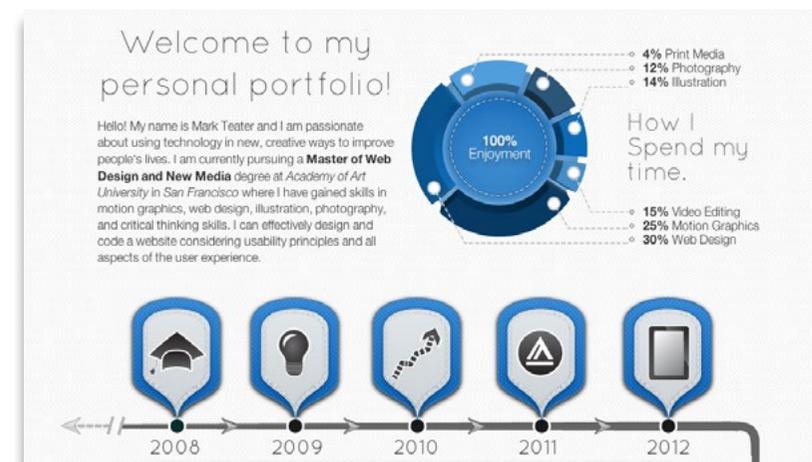
Application:

Project:
Personal Portfolio - Functional site here

Semester:
Spring 2012

Class:
WNM 608 Web Technology 1

Application:
BBEdit, Illustrator, Photoshop
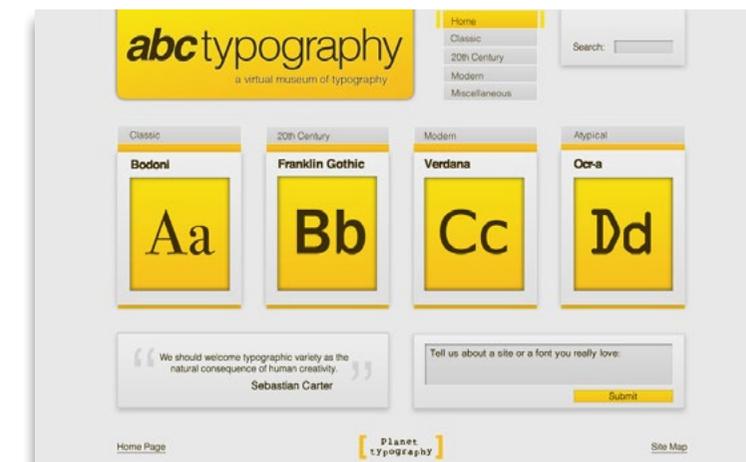
Project:
Redesign ABC Typography Web Site - Non-functional link

Semester:
Fall 2011

Class:
WNM 605 Typography for Digital Masters | *Lance Anderson*

Application:
Photoshop

Portfolio

Project:
Typography poster - Link

Semester:
Fall 2011

Class:
WNM 605 Typography for Digital Masters | *Lance Anderson*

Application:
Illustrator

Project:
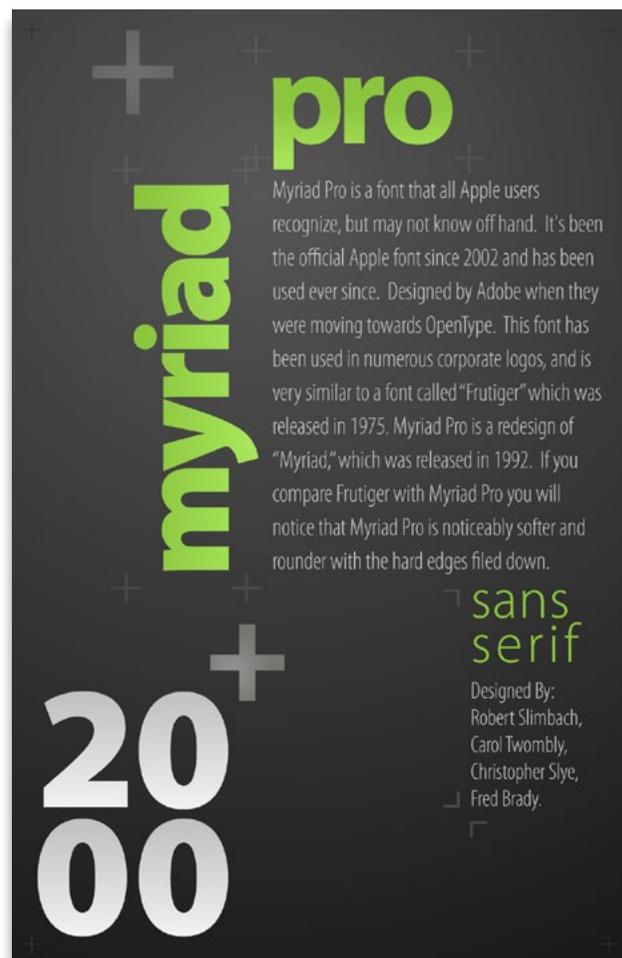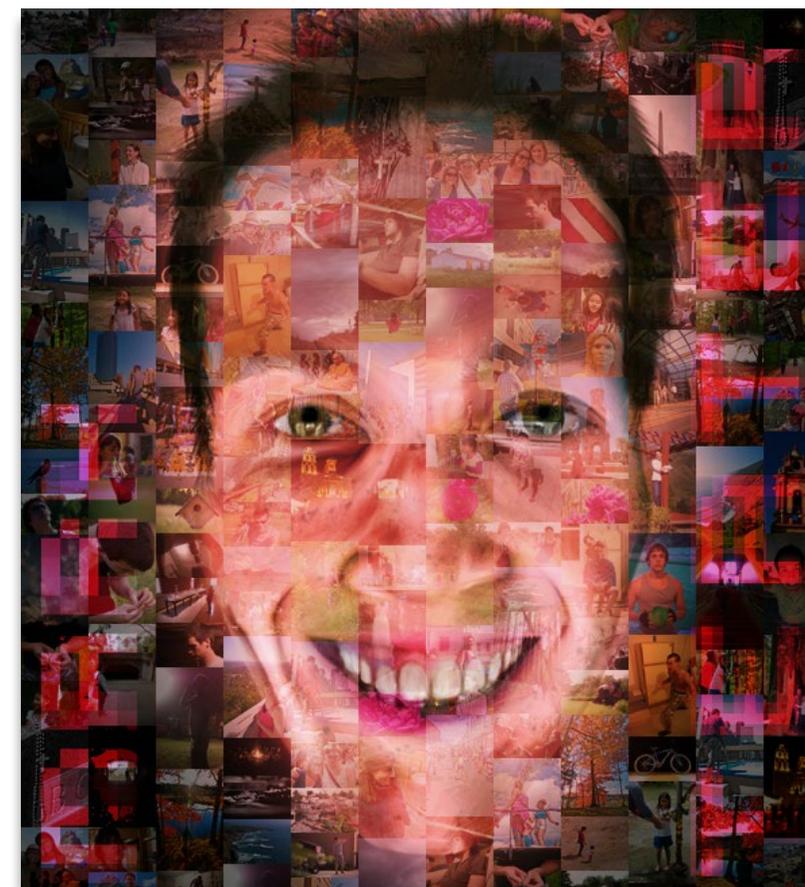Hand drawn illustration mixed with photography - Link

Semester:
Summer 2011

Class:
WNM 600 Digital Applications | *Ruben Mosqueda*
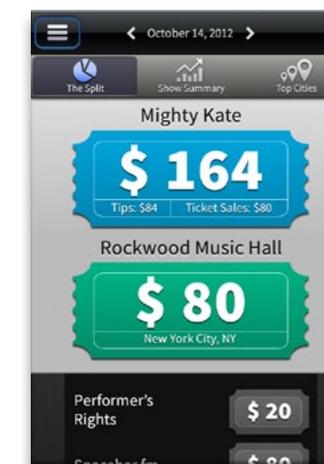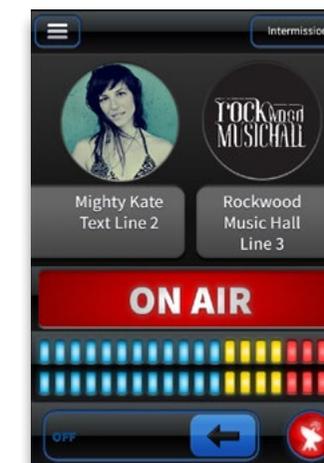
Application:
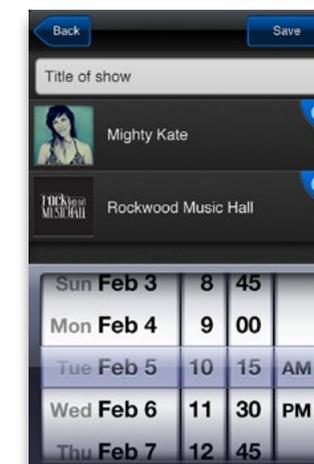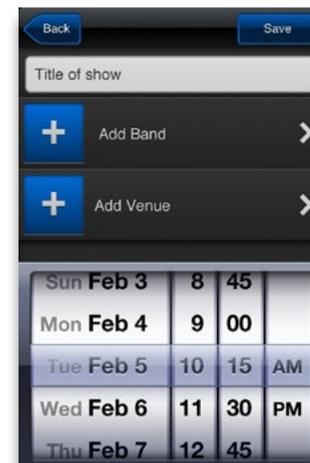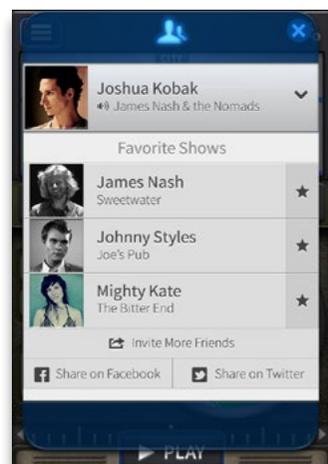Photoshop

Portfolio

Project:

Spacebar.fm - Design Intern

Role:

Complete UI/UX for three apps

Application:

Fireworks, Photoshop, Illustrator

Bibliography

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        Census Bureau, Geography Division, 26 Mar. 2012. Web.
        10 Nov. 2012. <http://www.census.gov/geo/www/ua/uafaq.
        html>.

2. "Urban Development." Data. The World Bank Group, n.d.
        Web. 26 Feb. 2013. <http://data.worldbank.org/topic/urban-
        development>.UNDP 1996, FAO 1999

3. IDRC/ UN-HABITAT".Guidelines for Municipal Policymaking on
        Urban Agriculture" Urban Agriculture: Land Management
        and Physical Planning (2003) 1.3

4. Issue brief. RUAF Foundation, n.d. Web. <http://www.ruaf.org/
        sites/default/files/Urban%20food%20security%20-%20
        UA%20response%20to%20crisis.pdf>.

5. Macdonald, Rich. "Program Thrives in Third Decade, but
        Challenges Loom." P-Patch Community Gardens
        l Department of Neighborhoods. City of Seattle, n.d.
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