Thesis Proposal

You Are Here

-Seattle's Pioneer Square as an Exploratorium

Kennith Allan Camarata
Thesis Proposal

Part 1: Scholarly Framework

1. Title: "You are Here: Seattle's Pioneer Square as an Exploratorium"

2. Thesis Statement:
Throughout history man has been explorative. We've explored new continents, the oceans, and space. As children we explore and take delight in the simple discoveries of our surroundings. It is in this spirit of exploration that this thesis will show that through man's explorative nature and an understanding of our senses, virtual and physical environments can not only coexist, but can also complement and define each other.

One modern version of this explorative nature exists in tourism. We are exhilarated by travel. We wander the streets in search of an understanding of the place. We take pride in "finding" a "hidden café" off of the beaten path where we sit and marvel at our surroundings. This thesis will take these "tourists" and, through the use of historical information and the senses, engage them in a conversation about their surroundings that encourages them to explore it more thoroughly.

In the tradition of exploration, the virtual environment is a continuation of our attempt to graphically recreate our surroundings, dreams, and possibly fantasies. Although it is sometimes likened to other media such as photography or film, the one true distinguishing feature is user interaction. The user is able to explore and interact with the virtual environment much like one would a physical environment. This thesis will construct a virtual environment and install it in a physical place as a means of connecting the "tourist" with that place.

3. Theoretical/Conceptual Framework:
We gather information about our surroundings through a variety of sensory interactions. Although a lot of senses enable us to experience
our surroundings, there are five basic senses that we typically discuss. Seeing, hearing, touching, tasting, and smelling the physical world provides us with the means through which to organize and understand it. Architecture (historically) has been primarily discussed in visual terms. Visual information processing takes up almost half of the brain’s cortex. We rely on visual cues to provide a majority of the information about our surroundings. Interestingly, our eyes only see two-dimensional information (height and width). The rest of the information (the third dimension) is drawn from our brains processing of the information through visual cues and the comparison of data from the left and right eyes. Just as our bodies process visual information as a means of understanding the third dimension, they also process sound as a means of describing our surroundings. The reflection of sound off of the outer ear (allowing us to hear things twice) provides us with spatial cues that help orient us toward, and focus on, things of interest or potential danger. These spatial cues help us navigate the complex and rich physical environment. "Sounds have to be located in space, identified by type, intensity, and other features. There is a geographical quality to listening."\(^1\) The same visual and auditory cues hold true in a virtual world and can therefore be used to describe and/or understand a virtual place or virtual architecture. Currently, the virtual world is restricted to seeing and hearing. So, the supplemental information that we gather from smell, touch and taste is unavailable to us forcing us to rely on those two basic senses. The sense of touch can be arguably included through the way in which we interact with the virtual place (keyboard, mouse, pen and tablet, data glove…) and the sense of smell is being explored in examples such as the iSmell (a small device that heats various combinations of oils in order to reproduce smells. The smells could then be served via the internet or simply triggered through a program on your computer). However, this thesis will explore how an understanding of the senses of seeing and hearing, and how an understanding of our bodies processing of them, can serve as a

\(^1\) Ackerman, Diane.  *A Natural History of the Senses*. Vintage Books, 1990. 178
framework for design, and how that framework can translate into both the physical and virtual environments.

4. Methodology
1. Research - The initial stage of the thesis will be spent researching information design, interface design (In this thesis "Interface Design" is meant to refer to how the user interacts and/or navigates through the information being presented (a three-dimensional environment). The design of hardware and/or the formal writing of new software is not going to be explored.), virtual environments, Pioneer Square, our senses, and our bodies processing of them.

2. Develop Information Program - Based on the research of Pioneer Square, a collection of important historical information will be created. This collection becomes the programmatic elements of the Virtual Exploratorium.

3. Information Architecture - Understanding the interrelation of the information and how one concept can flow into another will help create a navigable space. In Architectural terms, this step in the methodology creates a bubble diagram and then possibly a programmatic massing which shows the relationships between the pieces of information established in step two.

4. Sensory studies related to the Information and a Virtual Environment - The goal of this section of the methodology is to find out what kind of sensory experiences can be drawn out of the information and the relationships between the parts?

5. Design the Virtual Exploratorium - Using the sensory studies and the "programmatic massing" design the Virtual Exploratorium. The Language can include any combination of organizational information, spacial relationships, forms, and/or experiences (i.e. - sequence of events). The Virtual Exploratorium will be designed for use in a format that can be served via the internet. It will not include writing new software or creating new hardware. The point is to push my understanding of the current technology available to me.
6. **Record the Physical environment** - Through photos, sketches, and possibly even short film clips, gather information about Pioneer Square. These studies need to include the sensory experiences of the Pioneer Square district as well as simple materials and composition studies.

7. **Design the Kiosk** - Based on the Studies of Pioneer Square, design a kiosk which relates to the physical environment and expresses the contents of the virtual environment. (The Kiosk will support use by multiple people and will act as an information hub for Pioneer Square. The current plan for Pioneer Square calls for a manned information kiosk to be placed in Pioneer Place Park. After I finish reading through and evaluating the purpose of their proposed kiosk, their basic program may be added to this project.)

8. **Build a Full Scale Mock-Up of the Kiosk and/or it's important details** - The mock-up of the Kiosk needs to demonstrate the interaction and activation of the senses. Should the scale of the Kiosk grow to a size that makes a full-scale mock-up unmanageable, then mock-ups of important key details will serve the purpose.

9. **Presentation** - Preparation and presentation of the Project to a jury of critics.

10. **Documentation** - Documentation will be occurring at all phases of the process so that the final document can be easily assembled.

5. **Scope of Investigation**

   The design portion of this thesis will consist of two parts:

   1. **The design of a Virtual Exploratorium.**

      The program of the exploratorium is one that encourages the exploration of Seattle’s historically rich Pioneer Square as a means of learning and understanding it. The Virtual Exploratorium acts as a complement to the physical place and provides a means of finding insight through experiencing historical information through a three dimensional environment. In a virtual environment the information can take on a variety of forms (video, sound, text, photos, 3d models). A large portion of this process will be devoted to the study of three-dimensional information design and how the
user interacts and/or navigates through the information. The
dominant questions that need to be answered in this portion of the
thesis are: How can this information be organized to make it easily
navigated and understood, and What makes an effective interface
for a virtual environment? (typical VRML enhanced with simple
code hacking can enrich the interface making hot spots, sounds,
and movable pieces part of the experience.)

2 - The design of a multi-sensory Kiosk capable of engaging
multiple users in Pioneer Square’s Pioneer Place park.
Although other possibilities were discussed (i.e.-GPS enabled
PDA’s which feed information based on location, smaller kiosks
spread throughout the district…), the kiosk was chosen to act as a
link between the virtual and the physical environments. It provides
the "tourist" with a means of accessing the Virtual Exploratorium
and gives the Virtual Exploratorium a physical presence and
location. Being that the Kiosk acts as an interface to the virtual
environment, it should relate to both its surroundings as well as the
virtual environment that it serves. This connection becomes a
means toward understanding the kiosk in the physical environment.
If the kiosk only relates to the physical environment then how can it
be understood as a means of interfacing the virtual environment
and if it only relates to the virtual environment then how can it be
understood to be a part of Pioneer Square. It must respond to
both.
The main issue that the kiosk presents is how do you remain
sensitive to the historically rich physical environment while
designing a technology based kiosk that links to a virtual
environment.
6. **Preparatory Study**

**Arch 402 - Design / Build**

*Professor - Steve Badanes, Damon Smith*

We designed and built a pavilion and two small workstations at Klahanie's Highland Gardens. The experience gained by actually constructing a project is immeasurable.

**Arch 500 - Arch Design Studio**

*Professor - Grant Hildebrand*

The project for this studio was focused around designing a museum for the Klondike Gold Rush that was located in Pioneer Square. It provided an understanding of an important part of Seattle's history and gave insight into designing that type of facility.

**Arch 504 - Furniture Design Studio**

*Professor - Andy Vanags*

The learning potential of a hands on studio provided me with an opportunity to resolve a complex project and allowed me to understand my attraction to craft and the art of making.

**Arch 505 - Arch Digital Design Studio**

*Professor - Ellen Do*

My project for this studio was a physical exploratorium for Seattle. It provided me with a chance to explore the relationship between the physical and the digital environment in the design process.

**Arch 498 F - Web Weaving**

*Professor - Brian Johnson*

It gave an understanding of presenting information via the web and provided a place to discuss the types of interaction one would expect to take place in that type of media.
Arch 411 - 3d Modeling and Animation  
Professor - Brian Johnson  
This course is an introduction to the types of software needed to create three dimensional models and animations.

Arch 590 - Urban and Preservation Issues in Design  
Professor - Jeffrey Oschner  
Introduction to recent theory and practice in the fields of urban design and historic preservation primarily in North American urban contexts, including examples of recent projects presented by practicing professionals.

7. Annotated Bibliography
Ackerman, Diane, A Natural History Of The Senses. Vintage Books, 1990  
This book is a poetic look at our senses and how we understand our world as a result of them.

Not a typical travel guide, this book gives insight into Pioneer Square as a means of exploring and learning with children (as a family).

A travel guide for Seattle, this book provides both historical and current information about Pioneer Square.

This book documents the exhibits for the Interbuild Exhibitions.
Fink, Dr. Jeri, *Cyberseduction: Reality in the Age of Psychotechnology*. Prometheus Books, 1999

Through arguments that show that our lives have always been filled with "virtual reality", Fink explores our attraction to the computer based Virtual Reality.


"An Overview of the principles of space perception"


By understanding "visual intelligence" a large portion of how we perceive the world and how we can design virtual worlds will be understood.


Through introductions to various multimedia formats and their uses, this book provides an overview of the technologies available in the fields of multimedia and interactive displays.

*Theme-*
This book provides a strong historical look at interface design and provides insight into what may have made various interfaces successful. It also raises questions as to how an interface should evolve for future use.

*Specific Importance-*
As I develop a means of interaction between the user and the virtual environment, this book provides a means of understanding the processes involved.


*Theme-*
This paper presents a way of merging analog and digital information as a means of understanding and creating spatial relationships.

*Specific Importance-*
It provides me with a means of merging and organizing information from both the physical and the virtual environments.

This book presents information as to how we "perceive, process, and store visual information and [how it applies] to the viewing and interpretation of art."

*Theme*

Historical views, current trends, and the potentials for the future of Three Dimensional Information Design.

*Specific Importance*

This essay provides me with some important insight into how our bodies process three-dimensional data and therefore what makes virtual environments successful.

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**The White House is our house - a CD-ROM Visit.** Computer Software. Autodesk Press, 1998

*Theme*

This CD-ROM lets you explore the White House. Through that exploration, historical information about the Architecture, the Presidents, the first ladies, and their children unfolds.

*Specific Importance*

The ideas of using a variety of media and exploration as a means of learning will help guide me in the organization of the virtual exploratorium.

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8. **Supporting Material**

1 - Vicinity Map of Pioneer Square
2 - Site Map of Pioneer Square's Pioneer Place Park
3 - Related Web Pages
Part 2: Logistical Framework

1. Outline of Tasks:
   Research - Read books, articles, and papers on information design, interface design, the senses, and pioneer square's history
   Photograph and/or Videotape - pioneer square looking at materials, composition, and sensory experiences,
   Sketch - pioneer square as a means of understanding its composition and details.
   Case Studies - Perform case studies on museum exhibits and installations.

   Develop Information Program - Based on the Pioneer Square readings, define a set of historical Information to be used as the program.
   Organize and Study the Information - Study relationships between the pieces of information.
   Sensory Studies for the Virtual Exploratorium - What kind of Sensory information can be taken from the data.

   Design the Virtual Exploratorium
   Design the Kiosk
   Build a Mock-up of the Kiosk
   Create Final Presentation
   Present
   Compile the supporting document

2. Schedule:
   Fall '00:
   
   Research                Sept 25 - Oct 20
   Develop Information Program   Oct 21 - Nov 2
   Organize and Study the Information   Nov 3 - 16
   Sensory Studies for VE   Nov 17 - 25
   Design Virtual Exploratorium (VE)  Nov 26 - Dec 14
**Winter ’01:**

Design Kiosk Jan 2 - 19  
Build Mock-up Jan 20 - Feb 3  
Create Final Presentation Feb 4 - 18  
Presentations Feb 19 - 23  
Compile Final Document Feb 24 - Mar 9

3. **Available Resources:**

   **Supervisory Committee:** Ellen Do (Chair),  
   Brian Johnson  

   **Special Resources:** DMG (Design Machine Group) Research Lab,  
   DDS (Digital Design Studio)  
   CAUP Wood and Metal Shops  
   CAUP Slide Library  
   UW Library System  
   DCLU  
   Pioneer Square  
   Museum of History and Industry  
   Related Books (listed in bibliography)  
   Related Web Pages  
   (listed in supporting material)

4. **Space Support:**

I am seeking thesis space for both fall ’00 and winter ’01. If obtaining space in the DMG doesn’t work out, then I will need space in the thesis pit.