

# **Homes to Domes**

## **An Exploration in Interactive Heritage Interpretation**

<http://ourcommunity.is/domed/>

*by*

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## 1. Intro

Vine City and English Avenue are two of the most prominent African American neighborhoods in Atlanta with a diverse heritage spanning more than a century. The neighborhoods, once a thriving middle class, have since fallen into disrepair. As a result, the City of Atlanta often targets the neighborhoods as sites for redevelopment, new developments, and economic enhancement programs that result in negative effects on the neighborhoods. This project, entitled Homes to Domes, is the story of urban development and the community responses to them through interviews and community narratives. The final artifact, an interactive digital exhibit, contextualizes these stories with historical analysis and archival material to paint a picture of how the community has evolved and been affected by various development projects. Homes to Domes is an exploration of interactive storytelling in cultural history exhibiry. The main thesis question asks: How can interactive storytelling be used to empower community members and educate citizens for the benefit of underrepresented communities?

Homes to Domes is a contribution to the field of interpretation design and interactive storytelling through the use of multi-sequential narrative structure as well as structured exploration between semantically segmented items applied to cultural history and heritage interpretation. The project draws influence from data visualization techniques for content exploration, interpretation design for user experience design, and reflective design for community involvement throughout the evolution of the project. The final artifact invites users to read through the stories like sequential narratives, but situates the narratives into a context that can be easily explored.

### 1.1 The Problem

Vine City and English Avenue are often judged without proper understanding, or “black boxed” as the ghetto. They are left out of the dialogue of urban development and are adversely affected by development projects that are conducted without knowledge of the community’s needs or desires. This project is an exploration in trying to unbox the ghetto black box. In doing so, these research questions are considered throughout the project:

1. How can digital media and interactive storytelling be used for understanding and education for the benefit of underrepresented communities?
2. In telling the heritage and cultural history of these locations, how can I delivery a century long community narrative while still portraying individual voices in a way that accurately portrays the spirit of the time and place.
3. How can Vine City and English Avenue benefit from digital exhibiry?

## 2. Theory

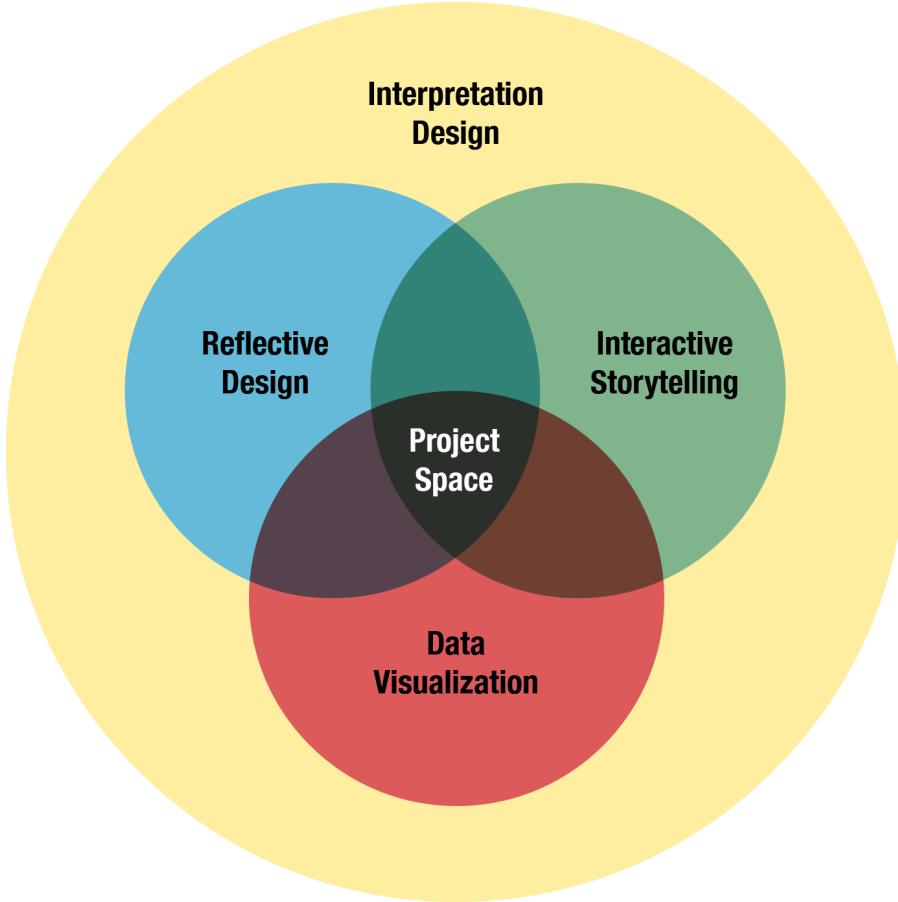
This project looks to expand the field of interpretation design by contextualizing it as a design practice alongside interactive storytelling, data visualization, and reflective design. The theory that informed this design project is examined through the lens of interpretation design. First, interpretation design must be unpacked before considering reflective design, interactive storytelling, and data visualization.

### 2.1 Interpretation Design

Interpretation design, as a design practice of informal education, is rooted in the design of heritage interpretation, which includes exhibit design, signage, wayfinding, and interpretive systems for cultural heritage sites, museums, and more. Dr. Toni Roberts, lecturer at the Royal Melbourne Institute of Technology in Media and Communications offers a concise definition of interpretation design. She writes:

*“Interpretation design is the strategic application of one or more design forms to shape visitor experiences that communicate specific ideas, values and messages. Interpretation design seeks to engage visitors through cognitive, affective and physical means; visitors co-create their individual experiences through prior knowledge, motivations and actions to learn and make meaning over time. Interpretation design aims to coordinate and integrate elements into a holistic, coherent visitor experience.”* (Roberts 2014, 205)

According to Roberts, the role of the design in interpretation design is to guide the user's experience, although the experience is ultimately determined by the decisions made by the visitor. In interpretation projects, the role of the design is often poorly articulated and encompasses a wide breadth of design techniques to implement the vision of the client and part of this project is to show what interpretation design can entail, specifically when applied to digital media. The National Association of Interpretation offers a definition to complement the definition by Roberts as to who interpreters are and what they do. They write, “Interpreters connect visitors to important natural, cultural, and historical resources at parks, nature centers, historical sites, aquariums, zoos, and anywhere that people come to learn about places.” (NAI 2016) There are many parallels between interpretation design and user experience design, and this project tries to connect interpretation design to the design principles taught in digital media. All the theory considered in this project is viewed through the lens of interpretation design and looks to integrate the theory and practice into interpretation design. The interactive storytelling theory comes from my time studying under Dr. Janet Murray, the data visualization theory comes from my time studying under Dr. Yanni Loukissas, and the Reflective Design theory comes from my time studying under Dr. Chris Le Dantec.



*Figure 1, Diagram indicating the theories of design taken into consideration*

Figure 1 indicates the space in which this project looks to apply the theoretical context. It examines the overlap of interactive storytelling, data visualization, and reflective design through the lens of interpretation design. This project looks to primarily be a contribution to interpretation design, but interactive storytelling stands to benefit from being augmented by interpretation design.

## 2.2 Interactive Storytelling

Ultimately, this project should show a mastery of the medium of interactive storytelling. The foundation of this project draws on Dr. Janet Murray's database model for segmentation and juxtaposition of information. In chapter 8 of *Inventing the Medium*, Murray says "The key task for the designer is to provide access to semantically segmented information, to information that is chunked into meaningful units" (Murray 2012, 223). While there are several approaches to interactive storytelling, the most important aspect in this project is semantic segmentation in order to allow users to navigate the material in coherent meaningful ways. By breaking down the material into meaningful units, the stories can be navigated through different paths chosen by the

user, adding to the user's agency of participating in the story. However, the design limits the user's navigational agency in order to maintain the overall structure of the story. There are several levels of stories to be told at several different granularities. There is a century long chronology narrative about the evolution of the community, the narrative of how the community responds to adversity per decade, and individual story items from individual community members and historical references. The individual story items are valuable in and of themselves as well as the high level narrative. Therefore the design necessitates access to individual units as well as connections to larger stories. By connecting the granular narratives, the user can better understand the communities to varying degrees depending on the user's level of participation. Murray writes "The finer grained an information structure, the more powerful it will be for accessing information" (Murray 2012, 229).

### *2.3 Data Visualization*

Using Murray's database model mentioned above as a starting point, this project treats the segmented story items as data in a corpus of stories. In doing so, the project turns to the paper by Edward Segel and Jeffrey Heer entitled *Narrative Visualization: Telling Stories with Data* which examines data as a form of rhetoric that can be used for delivering stories. Data is subjective in its collection and dissemination and can be used rhetorically in crafting an interactive narrative structure. Segel et. al. divides narrative visualizations into two categories: author driven stories and reader driven stories (Segel 2010, 1146). An author driven story tends to be uni-sequential and follows a set path with limited user interactions and exploration. A reader driven narrative presents data in a way that the user must craft their own narrative through exploration of the material. An extreme version of author driven narrative would be a book or film where the entire narrative is decided by the author and the reader plays a passive role. An extreme example of reader drive narrative would be an interactive data visualization that offers no contextualizing narrative. It would be completely up to the user to extract meaning and understanding from the visualization. There is a continuum between the author driven and reader driven approaches. A narrative visualization that is closer to an author driven narrative is an interactive slideshow that has a linear structure with a low level of interactivity in the visualization such as the Welcome to Pine Point project shown in figure 2. A narrative visualization that falls closer to a reader driven narrative is called a drill-down story and allows for user exploration. Segel et. al. write "The Drill-Down Story visualization structure presents a general theme and then allows the user to choose among particular instances of that theme to reveal additional details and backstories." (Segel 2010, 1146) Homes to Domes, while not strictly a data visualization or interactive narrative, is a drill-down style narrative that tries to fall in the middle of the reader and author driven styles by offering a

narrative structure determined by the author but allowing users to reveal details, dive in deeper into the content, and move between narrative segments. These divisions build off of Murray's distinction between uni-sequential and multi-sequential narrative.

## 2.4 Reflective Design

The final design of the exhibit artifact was largely determined by involvement with the communities of Vine City and English Avenue including user testing and designing for specific events. Details of how the community was involved are included in Section 4 on Process. My involvement with the community throughout the duration of the project was informed by theories of critical human computer interaction, most notably critical reflective design. The theories approached here are primarily from the paper by Phoebe Sengers et. al. entitled *Reflective Design*. In this paper, Sengers et al introduce critical design as a mode of design for generating conversation and critique on real world situations from which the design artifact originates. They write "A critical designer designs objects not to do what users want and value, but to introduce both designers and users to new ways of looking at the world around them and the role that designed objects can play for them in it." (Sengers 2005, 3) In this way, the designed artifact, specifically the earlier prototypes of this project, were used not as a final design piece, but as a conversational object that served as a mode of communication between the Vine City and English Avenue, and the Participatory Public Lab at Georgia Tech. As the involvement with the community happened over the course of the project, the design developed based on the fact that much of the design happened in and with the community, drawing influence from participatory design. Sengers calls this reflection in action and defines it as "reflection as an active, in the moment, and almost intuitive, visceral process as opposed to a detached cerebral analysis occurring pre or post engagement." (Sengers 2005, 4) The community involvement was the primary guiding factor in the project's design evolution.

The project as an evolving piece also draws influence from Daniel Fallman's paper entitled "The Interaction Design Research Triangle of Design Practice, Design Studies, and Design Exploration." Specifically the project looks at Fallman's design exploration. He writes "design exploration is a way to comment on a phenomenon by bringing forth an artifact that often in itself, without overhead explanations, becomes a statement or a contribution to an ongoing societal discussion" (Fallman 2008, 8). In this way the project lived in the present moment within the community as dialogue and critique of the society and context into which the subject matter of the design takes place. Reflective Design approaches helped shape the design not just for its aesthetics, but how it functions in the community from which it represents.

The project is meant to start a dialogue that doesn't end when the user steps away from the exhibit. According to Associate Professor at New York University John Kuo Wei Tchen, museums should be dialogic. He writes that exhibit design "...meant learning how different people learn in different ways and helping to facilitate that processes. And it has meant taking what we learn from these dialogues and further improving the planning and development of the organizations." (Tchen 1992, 291) Exhibits should reach people and invoke empathy as well as action. For this reason, Homes to Domes was created as an installation that exists in more than just cyberspace, but physical space as well. Interpretation design already leverages many of the affordances mentioned above. It is primarily about visitor engagement, telling a story, serving as informal education, and focuses on the whole user experience.

### *2.5 Place, Space, and Limitations of Interactions*

The final Homes to Domes artifact contains authorial narrativity alongside moderate levels of user agency. In doing so, the user agency is limited to a set of interactions determined within the design of the artifact as a part of guiding the user experience. Part of the purpose of this project is to give users agency over how they navigate the content. However, as a design project, it is important to limit the interactions of the user as a part of guiding their experience. This is a design principle used in interpretation design in order to maintain a cohesive experience within the set narrative, and to allow users to create their own experience through exploration. Roberts writes "The designer's role involves balancing, coordinating and strategically employing a range of media and methods to generate holistic visitor experiences suited to the target audience." (Roberts 2014, 203) The idea of the effectiveness of limited and simple interactions has been studied more generally outside of interpretation design. Professor of Psychology at the University of California, Santa Barbara Richard E. Mayer and Dean of Education at the University of Wollongong Paul Chandler explore the benefits of simple user interactions in digital experiences. They write "[Simple user interaction] reduces the learner's cognitive load on working memory, thereby enabling the learner to progressively build a coherent mental model" (Mayer 2001, 390 - 391). According to Mayer et. al. the interactions are just a way to navigate the content which is less important than the content itself. The user interface should only be an instrument to enable users to navigate the content.

The final digital artifact exists in two spaces, online and as a location based installation. A part of the exploration of the design of this project was to find out how to have the greatest level of impact while still being fundamentally a product of digital media. In doing so, it was essential to explore the power of place and how memories and context associated with location can elicit stronger empathy and understanding of the

material. Geographer Yi-Fu Tuan writes about the power of location in his book *Space and Place: Humanistic Perspective*. In his book he says that place can have spirit and personality. (Tuan 1977, 409) The personality of a place comes from the relationship of the place to the people associated with that place. This personality has the power to evoke affection, which played a role in the impact of this project on the community members and visitors in general.

Based on the above research questions and theory, the project explored and iterated on different types of interactive storytelling solutions to see how each promoted understanding for community members of Vine City and English Avenue. The design exploration involved different form factors, technologies, limitations of interactions, venues, audiences, and more. Throughout the duration of the project, the evolution was driven by community involvement and localized contexts. The final design leverages principles of interactive storytelling applied to interpretation design.

### **3. Precedences**

Interactive storytelling has been used for cultural history and informal education in many different ways. Most projects focus on a uni-sequential narrative, like an interactive documentary, or on content exploration, like data visualization. In designing the Homes to Domes exhibit, exemplary precedences were examined for how they achieved their goals of storytelling. The precedences were gathered and compared to see how their strongest aspects can be combined and their weakest points eschewed.

### 3.1 Welcome to Pine Point

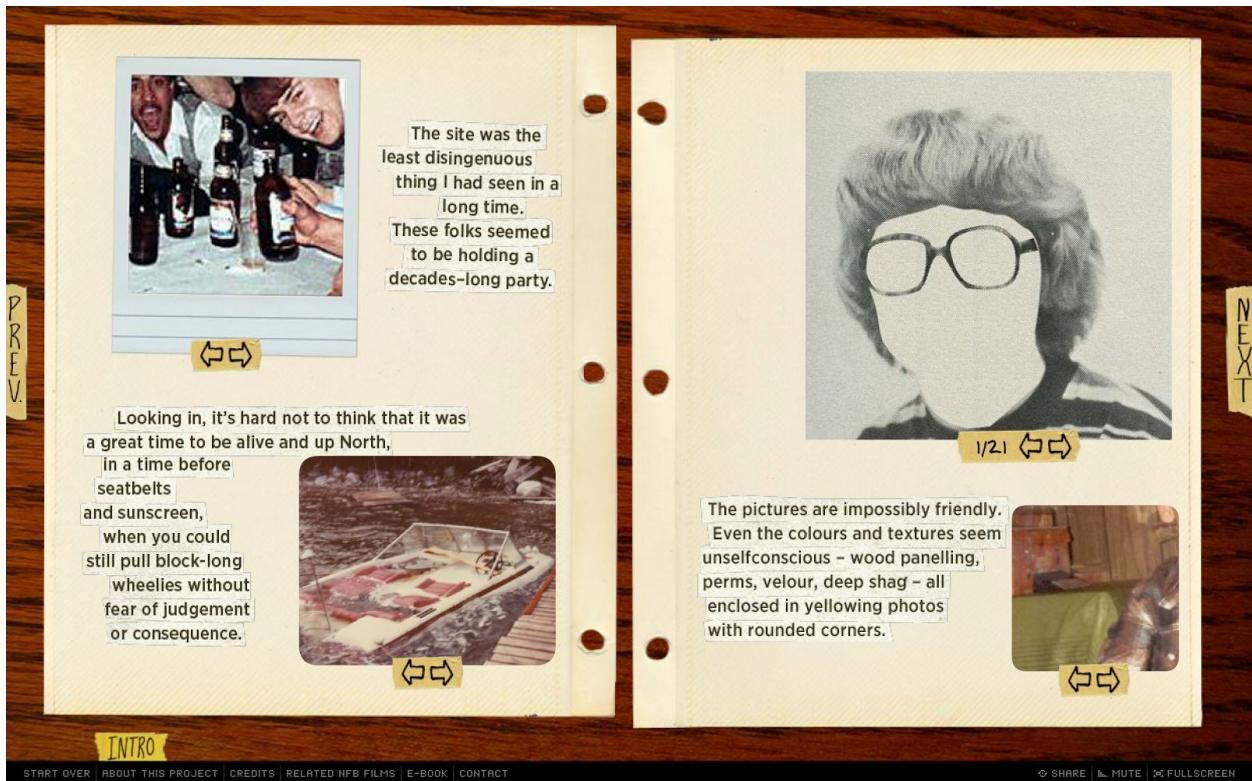


Figure 2, Screenshot from the PinePoint interactive documentary interface

Welcome to Pine Point is an interactive documentary that commemorates the existence of a small town in Canada that has since been raised (Shoebridge). The documentary tells a uni-sequential narrative, but invites users to interact with cultural artifacts as the story progresses. The interaction does not affect the narrative, but encourages deeper understanding of the culture. The Homes to Domes project draws influence from this project in that it showcases a localized cultural story as well as allows users to examine individual media artifacts relevant to the culture of the place. However, Welcome to Pine Point has limitations in that it does not encourage exploration of the media and the user can only follow the one narrative offered by the author as opposed to following threads or creating their own narrative, which is included in the Homes to Domes project.

### 3.2 Object: Photo

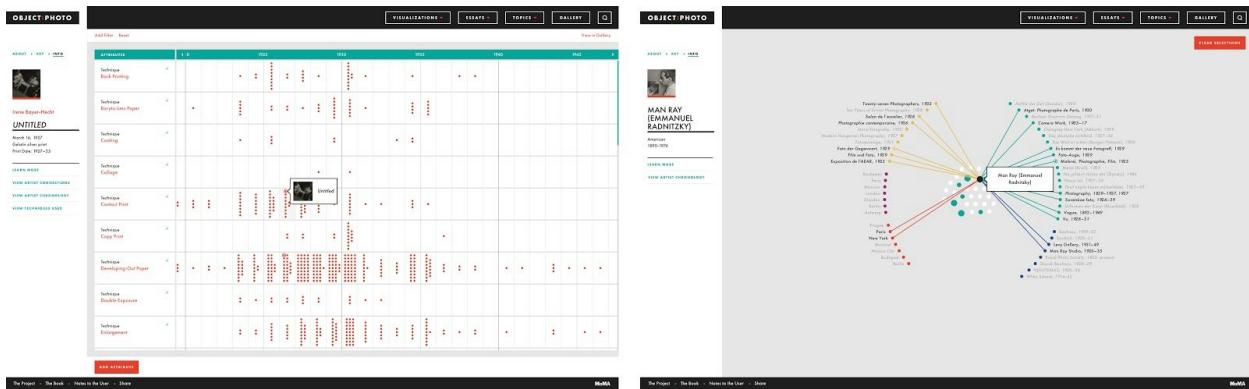


Figure 3, Screenshots from the Object Photo visualization interface

Object: Photo is an interactive exhibit at the Museum of Modern Art featuring photography from Thomas Walther (Second Story 2014). The exhibit networks together photographic material from Thomas Walther to show how individual photographs relate to other photographs in the context of location, time period, and technique. The techniques used by this exhibit encourage exploration of the material by allowing the users to jump between items and to find threads between the content. However, the exhibit lacks an overall narrative that prevents the users from having a big picture understanding of the photography or Thomas Walther by excluding an author driven narrative. The Homes to Domes project draws influence from the hyperlinked nature of the artifacts presented in Object Photo, but differs in that it maintains an overall narrative structure.

### 3.3 Churchill Lifeline Table

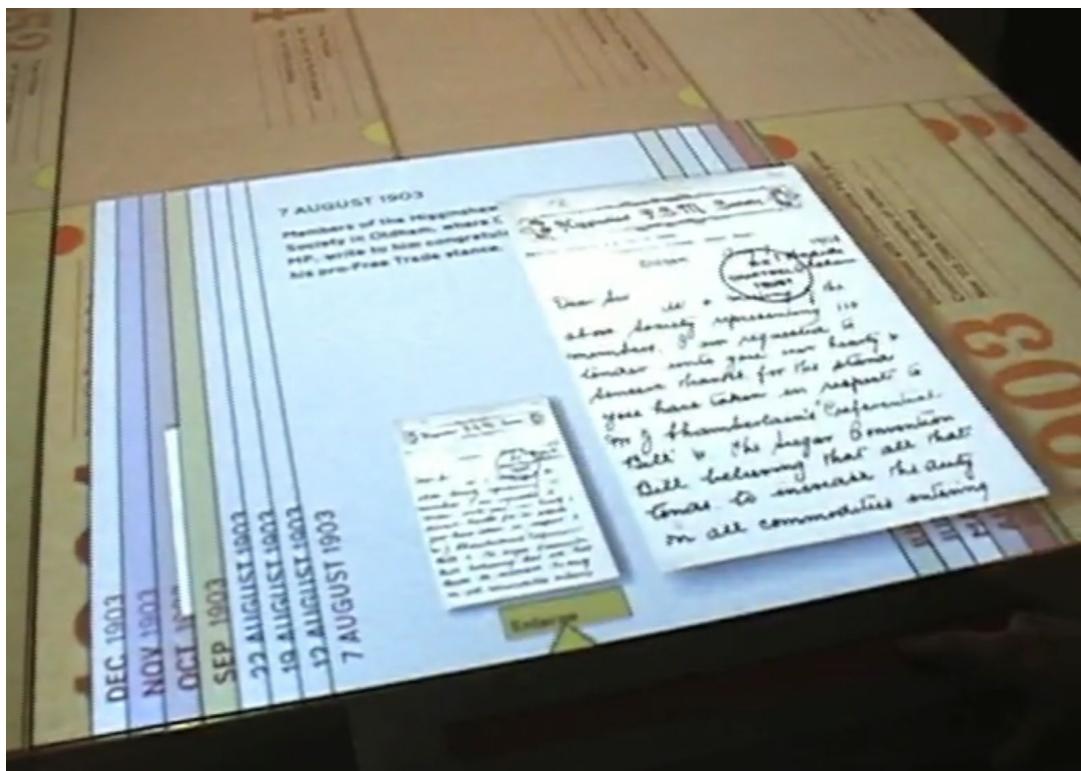


Figure 4, Photograph of the Churchill Lifeline Table Interactive Digital Exhibit

The Churchill Lifeline Table (Small Design Firm 2005) is an interactive digital installation at the Churchill Museum in London that commemorates the life and accomplishments of Winston Churchill. The exhibit is a timeline, or “Lifeline” of Churchill from 1874 until 1940 embedded in a long interactive table. The exhibit invites multiple users to interact and view media that is organized over time. My project draws influence from this piece in that the content is separated by time and users can choose to explore different timeframes. However, the Churchill Lifeline Table only exists as an installation and therefore can only make impressions on those who are there. Also, it does not offer any tagging or anything to encourage exploration for finding relationships between content.

The final Homes to Dome exhibit artifact is in a space between data visualization projects such as Object Photo and interactive narrative, such as Welcome to Pine Point by combining uni-sequential narrativity with exploration in the context of interpretation design. Homes to Domes extracts the most impactful elements from these precedences as well as many others and builds upon their effectiveness for the specific needs of the project.

## 4. Process

The design process involved in the Homes to Domes exhibit was heavily dictated by the process of involvement with the communities of Vine City and English Avenue and the Historic Westside Cultural Arts Council. The Homes to Domes project comes from a larger project in partnership between the Participatory Public Lab (PPL) at Georgia Tech and the Historic Westside Cultural Arts Council (HWCAC). The larger project involved working with community members to document their stories, primarily lead by Katherine Diedrick, a researcher, and Tracy Bates, the president of the HWCAC. The stories gathered through their work became the initial corpus for the Homes to Domes project. The Homes to Domes project was then used by Bates and Diedrick as a form of further engagement with the communities of Vine City and English Avenue.

The project uses work started by Katherine Diedrick, a public researcher and organizer with the Solidarity Research Center. Her project, while working with Dr. Chris Le Dantec, involved collecting community interviews and juxtaposing them with a different set of oral histories collected in 1988 and 1989. The project was also about helping the communities of Vine City and English Avenue define themselves with their own voices as opposed to being stuck with how they are identified by politicians and journalism. My project uses the corpus generated by her as a starting point for the content of the exhibit. Similarly, my exhibit aims to showcase the voices of the community members and to show that their local knowledge is worthy of being showcased in an exhibit, which addresses part of my research question of the benefit of exhibitory to the community.

### 4.1 Historical Context

The corpus of material used as a starting point for the project was generated by Katherine Diedrick, a researcher at the time with the Participatory Public Lab at Georgia Tech, and Todd Michney, a historian at Georgia Tech. Diedrick worked directly with the HWCAC and community members to gather interviews and cultural material. Michney then contextualized the collected material with archival material spanning over 100 years. The content and narrative was written by Diedrick and Michney specifically to be situated into the Homes to Domes exhibit project. The corpus of material was organized and refined as the project took shape in collaboration between Diedrick, Michney, and myself. The corpus is semantically segmented to allow users to explore the content.

The prototyping done throughout the first semester of the project was meant to target the community members as the primary audience. The first prototype of the project was used by Diedrick and Bates to show the community members how the stories

being gathered by the community were being used and contextualized in a digital media project. In doing so, the first two prototypes of the Homes to Domes project were distributed to community members for feedback during community events such as a church service at the Lindsay Street Baptist Church and the annual Festival of Lights. During these events the prototypes were set up and available for viewing by interested parties and their feedback. On some occasions, community members would be specifically asked to interact with the prototype to gain their feedback. When a user interacted with the prototype, their reactions and interactions were informally noted, such as noting if they had confusion around navigating the interface, or if they had opinions on how the community members were being portrayed in the prototypes. This process of community involvement uses Sengers' idea of a critical design object for introducing a unique perspective to the community members as well as a unique perspective to me as a designer by seeing how community members respond to the designed object. Through these methods, the community was a part of the design process.



Figure 5, Feedback session from the community

One notable example of critical and formative user feedback came from several community members being shown an early version of prototype 2 at a community food bank (figure 5). The users were broken up into groups of 3 or 4 and given an ipad and asked to interact with the prototype, which included navigating the user interface, reading text, and watching videos. The community members responded positively to the flow of the content and its curation and generally reacted well to the gesture based user interface despite the lack of technological proficiency by most of the users. However, most community members were not willing to play and pause the videos on their own, even though the play/pause button was prominently displayed and clearly marked with established conventions. When a group was ready for another video, they would call a facilitator over to begin the next video. This informed the design of the next prototype that videos should auto-play when the user swiped to the next page of content so that the user could more independently interact with the interface. This type of informal user feedback setting was the primary environment for user testing and feedback on the prototypes from the community. Throughout the duration of the project, sessions like these dictated the evolution of the design and it's relationship to the community from which the content was gathered.



*Figure 6, Tracy Bates addressing the Lindsay Street Baptist Church congregation with the Homes to Domes prototype project for the congregation to view.*

The finished version of the second prototype (figure 6) was used by Bates as a rhetorical piece to encourage further engagement by community members in the church service in the Lindsay Street Baptist Church. In this scenario, the prototype was projected on a screen for the entire congregation to view. Instead of asking individuals to interact with the interface, the system was demonstrated and talked over to show the value of the archival material being collected by the community. In this way, the designed artifact was used as a conversational piece to advance the initiative of Bates that also feeds into the design of the Homes to Domes process. By allowing Bates to use the design in such a way, the design served as a critical object of conversation in ongoing societal discussion as proposed by Fallman.

#### *4.2 Change in Audience*

Throughout the duration of the project, the target audience has changed as the needs of the project changed. Initially, the project was to be targeted towards a civic relationship between audience community members and audiences members. However, the project evolved to become an interactive storytelling piece with its rhetoric focused on representation and elucidation of the communities' cultural history than on communication to policy makers. An ancillary project and other research was created that directly addressed how to effectively communicate between disadvantaged citizens and policy makers. However, that projects falls outside the scope of this project but a link to details is included in the appendix.

The target audience shifted for the second semester of the project . The objective was no longer to face back towards the corpus source (ie. Vine City and English Avenue), but to face outwards towards an audience of museum goers and Atlanta citizens in order to promote understanding of the communities. The new audience also demanded a stylistic shift in interaction and graphic representation. With the new audience, venues were approached for a more outward facing exhibit, including the Center for Civil and Human Rights and the Herndon Home Museum as potential sites for public display of the exhibit. However, the venues' exhibitions are planned considerably further in advance than for the scope of this project. Therefore, the Center for Civil and Human Rights serves as a hypothetical venue for concretizing the project's design for a specific location. The design was driven by their aesthetics and mission. The project incorporated more visual graphics and framed the development issues as human rights issues. The interactions were also modified to accommodate for an audience that may only be passively interested, as well as allowing drilling down for more deeply interested visitors. The various target audiences helped to build the breadth of the project and to allow various perspectives to be considered in the design thinking processes, although not all these audiences are represented in the final

artifact. The involvement with the community helped dictate the design process of the project during the first semester. In the second semester, the design was advanced by targeting venues and their specific needs and values.

#### 4.3 Implementations

The final project artifact is implemented as an installation as well as on the internet. The web interface is the primary interface that is most accessible. The project is hosted on ourcommunity.is, the website created for all projects undertaken through the Participatory Public Lab. The project is situated amongst other projects centered around Dr. Chris Le Dantec's research with Vine City and English Avenue. The web interface is accessible through both desktop computer as well as tablet browser.

Although the project is completed in terms of being an academic project, there are plans to have the project installed in venues at later dates. Specifically, the Center for Civil and Human Rights and the Alonzo Herndon Family Home. The project is available for future showings with to the Participatory Public Lab as well as those in collaboration of the project; Todd Michney, Katherine Diedrick, Tracy Bates, the Historic Westside Cultural Arts Council, and the communities of Vine City and English Avenue. This project is meant to have life beyond my involvement and ownership of the project is not meant to be contained, especially considering this project was only possible through deep collaboration with the many groups of people.

At the beginning of the second semester of the project, the target audience shifted from being reflexive towards the community from which the archive was generated, to being public facing for the benefit of the community. In doing so, venues were contacted that would have the most impact on the community in terms of exposure and empathy. I approached the Center for Civil and Human Rights and generated a proposal for an exhibit for them in their mezzanine space. Although there is no guarantee to have an installation there, using their location as a hypothetical scenario for the installation helped concretize the design. The project was made more specific and concentrated on catering the project to their aesthetic as well as mission statement. The figure 11 rendering was a part of the proposal to the Center for Civil and Human Rights. The rendering shows the two screen interface that became the final design. If the project is implemented at the Center for Civil and Human Rights, the mural would be projected and the content viewer put in a secured stand. The proposal also included a bill of materials for price overhead of the installation.

A second venue for the project is Herndon Home Museum. The Herndon Home is situated at the south end of Vine City and is an historic location that welcomes tours

and is of importance to the civil rights and african american history of Atlanta. The project uses the Herndon Homes as a rhetorical starting point for the story, so having it installed at their location would be a good fit. The Herndon Home Museum wants a simple kiosk version of the interface that would be an installed version of the current web interface that would be situated amongst their other exhibits.

## 5 Design.

The corpus was crafted into the final artifact by leveraging narrativity with exploration in interactive storytelling. The final piece is presented as a digital exhibit, fitting into the field of interpretation design and how interactivity can be used alongside interpretive storytelling. The primary methods of exploration between storylines is through tagged themes and time. The themes have been added to the stories as metadata and time placement by decade was used for the temporal aspect. The project situates each individual storyline in the context of the time in which they happened, but allows users to drill down the individual storylines, allowing users to get a zoomed out understanding while also having access to the individual stories. Before arriving at the final artifact two fully functional prototypes were generated, as well as many other sketches and prototypes of various fidelities.

### 5.1 Prototype 1: tablet only interface

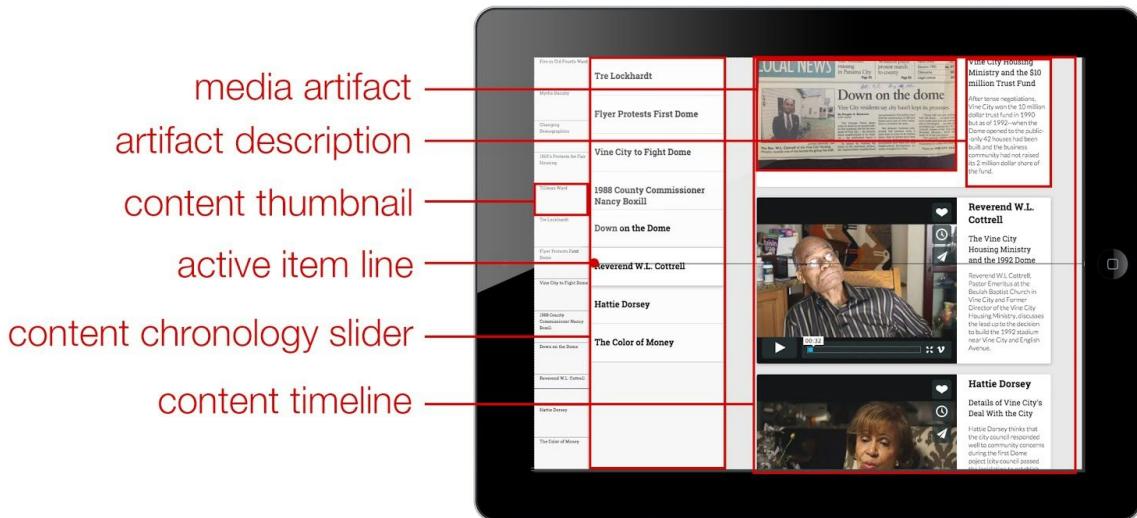


Figure 7, Prototype 1 interface on ipad

The first prototype served as a proof of concept for parsing and navigating the content for feedback from the community members of Vine City and English Avenue. The interface presented the content as a chronology and included a granular navigation with three columns. The leftmost column was the most zoomed out and the rightmost column had the highest level of drill down. The middle column consisted of thumbnails

for the drill down column. This prototype was designed for tablet interface, which made it easy to carry to public events and get feedback from users. The prototype was created as a critical object for reflection from the community. There were some elements of granularity inspired by Murray's writing, but the purpose at this point was a conversation piece with the community.

This prototype features a subset of the media corpus. The rightmost portion of the screen features the media item with a title, subhead, and description. The middle and leftmost sections are thumbnails of the content used to navigate the content from a zoomed out position. The user scrolls through the timeline in order to navigate between the content items. Although the interface was simple, it served its purpose of communicating to community members how the content gathered by them would be used as a digital artifact. It also made getting their feedback easy on how they were being represented. However, the prototype had limitations in that the content was not broken down into any type of themes, nor did the prototype contextualize the content into a larger narrative.

## 5.2 Prototype 2: tablet and collective interface



Figure 8, Prototype 2 interface on four iPads and one large screen

The second prototype was the final deliverable for the end of the first semester of this project. This iteration featured a web interface version as well as an installation version, with the primary focus on the installation version. The web version is the same as the installation version except the web version is just the content viewer without the big screen interface. This section will talk primarily about the installation interface. The

content corpus was tagged with 4 different themes (racism, activism, housing, and development) as a way of semantic segmentation of the content. The installation featured four ipads, one for each of the four themes that were tagged within the story, and one large screen that connected to the four ipads to show the collected content's relationships to each other.

The tablet interface was the primary content viewer from which the user interacted. The content on the tablet interface included each media item with a title, subtitle, and a description. The content can be swiped through and videos can be played or paused from the tablet interface. Exclusively on the web interface, buttons along the bottom of the screen indicated the four different themes which could be toggled between for the different narratives. On the installation interface, each of the four tablets was used for a different theme.

The large collective screen showed each of the four themes as rows of thumbnails. Many stories were tagged with multiple themes and were therefore contained within more than one story row. The rows of thumbnails helped show how the various individual stories cross between narratives. When a user swiped between items on the tablet, the large screen shifted the highlighted content of that row to reflect what content is now active on the ipad. All four themes on the screen are controlled by separate tablet devices that show their individual stories as a part of a bigger picture on the larger screen. The addition of a large screen promoted an understanding of the zoomed out narrative as well as a sense of collective contribution to the story by allowing multiple users to manipulate the interface simultaneously.



*Figure 9, Prototype 2 interface projected on wall and used for conversation with group of users*

Prototype 2 was installed at the Lindsay Street Baptist Church in late November of 2015. It was presented to the congregation while Tracy Bates from the HWCAC addressed the crowd. The designed artifact was used as a reflection in action by letting the congregation view it within the dialogue of the HWCAC project needs. The installation was then moved to another location within Lindsay Street Baptist Church where the congregation was invited to participate and interact with the artifact. At this point, the prototype became a dialogic artifact used for critical discussion. The community interacted with the artifact but the majority of the time at the event was spent discussing broader community affairs and using the prototype for talking points.

While the interface served as a good reflective design object and talking point during presentations by the HWCAC, there were a couple of drawbacks that would be addressed in the final artifact. The interface only alluded to the fact that the themes were connected, but no explicit connection was made. The slides within each row on the big screen were set up chronologically, but as a timeline it was impossible to tell when events occurred compared to each other, because the timelines moved individually. The users could explore content, but it required them to physically switch tablets, which was not a salient interaction to individuals. The interface mostly enables

uni-sequential narrativity. These limitations partnered with successes informed the final artifact's design.

### 5.3 Final Artifact: Web and Installation Interface

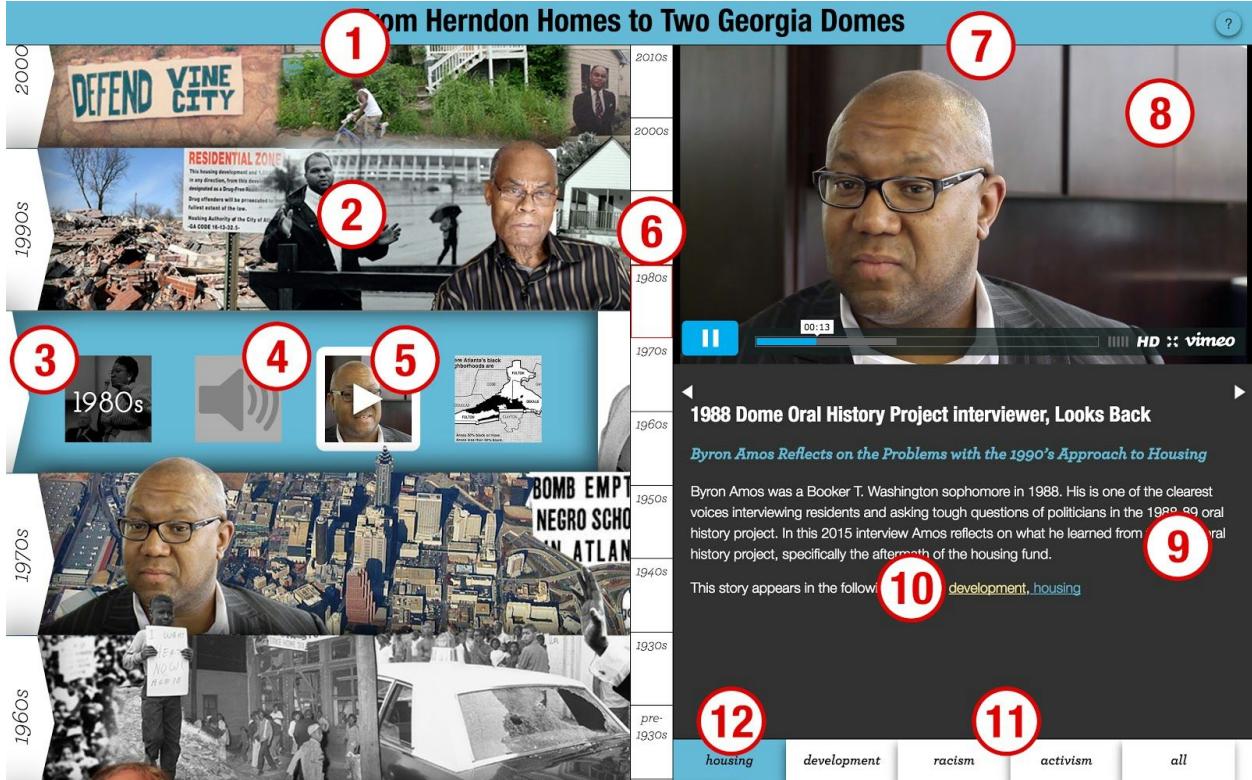


Figure 10, Final Design web interface

Figure 10 shows the web interface of the final artifact. The artifact is designed to be fitted for an installation with a slightly reworked version of the interface. The artifact was designed to work in multiple form factors with the same core functionality and design. Below is a list of features and functions.

1. Timeline Mural- The timeline mural is the left half of the screen and is a graphical representation of the storylines assembled by collaging the media artifacts within each decade with contextualizing visuals.
2. Decade Slider- The timeline mural is composed of ten decade sliders, one for each decade represented, that can be slid back to reveal the individual story items within each decade. The graphics of the decade slider represent the spirit of the times of that decade based on the story items of that decade, and help set up the context for the stories within that decade.
3. Active Decade- The decade slider that is active slides away to the right to reveal the stories within each decade. The background color of the active decade

reflects the active theme. All of the thumbnails within the active decade are the individual story items that pertain to that decade and active theme.

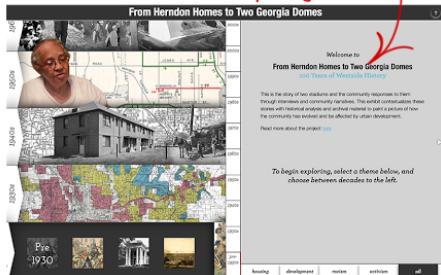
4. Story Items- Each decade contains story items as a thumbnail that represents the content in the content viewer. The story items in each decade are based on themes and chronology.
5. Active Story Item- The active story item is a content thumbnail outlined in white to indicate that it is the active story item currently being displayed in the content viewer.
6. Timeline Selector- The timeline selector is used to switch between active decades, and to highlight the decade that is currently active.
7. Content Viewer- The content viewer, the right half of the screen is used to display the active story items. This is where the primary user interaction occurs and allows users to read, watch, and navigate between story items.
8. Media Player- The top portion of the content viewer is the media viewer which contains the active media artifact. The artifact is either a photograph, video, or audio. If the media artifact is a video or audio, the user has the ability to play, pause, and scrub through the media as well as adjust volume.
9. Media Description- Each media artifact has text associated with it that contextualized the artifact and advances the overall narrative being told between the stories.
10. Theme References- Each story item is associated with at least one of the four themes along the base of the content viewer. The theme references indicate which themes the active story item is associated with. These references are clickable and will switch the exhibit to the new theme.
11. Themes- The base of the content viewer contains the four themes which each story has been tagged with as well as an “all themes” tab. At any time the user can toggle between these themes. The exhibit will switch the active theme in the content viewer and timeline mural. The active decade will reflect the new content and start at the beginning of the decade so the user can chronologically navigate through each item of the now active theme.
12. Active Theme- The active theme is the highlighted tab in its representative color and it indicates what stories are actively being displayed throughout the exhibit. Each theme has a color to represent that it is active. The active theme’s color is also used throughout the rest of the user interface to indicate that the active story item and active decade are referencing the active theme.



Figure 11, proposed installation format for the Center for Civil and Human Rights

The exhibit has had variations of the figure 10 design configuration for a few different venues and scenarios. There are minor differences in these variations, but the user interface is fundamentally the same as to what is described above. The primary variation is breaking down the content for display on two separate screens, as was in the design proposal for the Center for Civil and Human Rights (figure 11). This version shows the timeline mural on one large screen or projection, and the content viewer on a separate handheld tablet. With this orientation, the user does all the interaction on the content viewer. They still have the capacity to navigate between themes, decades, and individual story items, but can no longer directly interact with the mural. However, the mural still reflects the changes being performed by the user. The two-screen variation functions basically the same way with only these few modifications. The variations are still meant to be the same exhibit, just situated differently, so that they are as similar as possible and with only necessary modifications in place. The two screen installation version leans more heavily on interpretation design. The goal is to guide the user experience with the authored narrative more than to allow exploration. The user still has the ability to explore the story segments, but the user cannot arbitrarily jump between story items.

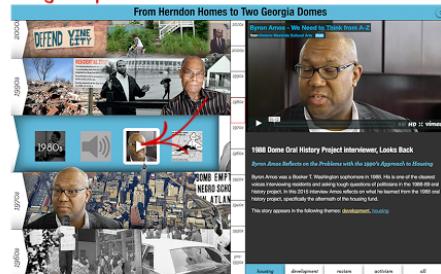
## 1. Introduction to project



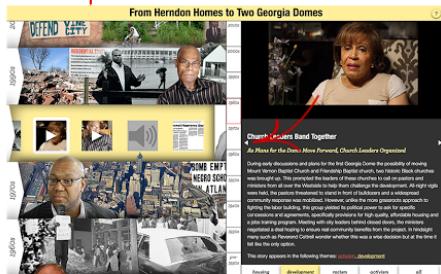
## 3. advance slide by swiping content



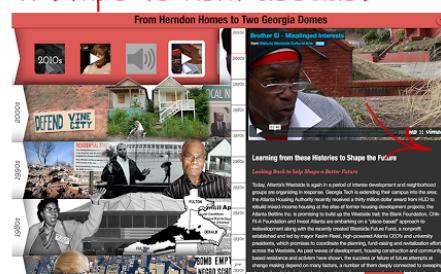
## 5. jump to slide



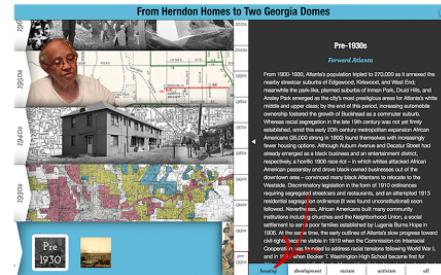
## 7. swipe to earlier content



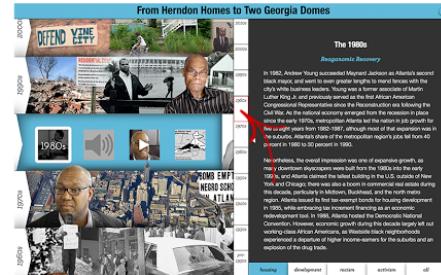
## 9. swipe to next decades



## 2. select theme



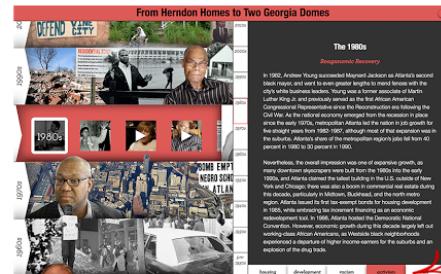
## 4. switch decade



## 6. switch theme context



## 8. switch active theme



## 10. story conclusion

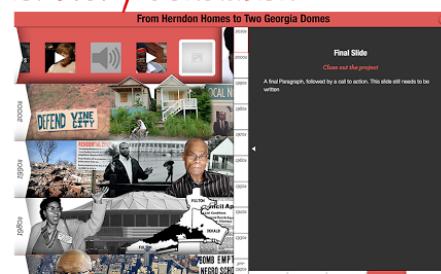


Figure 12, Final Design user flow example

The final project artifact leverages uni-sequential storytelling and multi-sequential storytelling through semantic segmentation. The user can navigate the artifact in several different ways. They can follow the story sequentially or by navigating between segmented story items by using filters, decades, or arbitrarily selecting story items of interest. Figure 12 indicates one method of navigation of the story from beginning to end.

1. This is the starting page of the artifact which includes the timeline mural to the left, and an introductory slide to the project in the content viewer that indicates how the user can interact, and a brief written introduction to the project. From here, the user can swipe right to start the story, select a theme for a subset of the story, or select a decade to jump to a different time period. These user interactions are consistently available to the user at all points in navigation.
2. When the user selects a theme, the user interface changes colors to indicate the active theme and the active decade adjusts the content to reflect story items that are contained in the selected theme. The decade also starts over at the beginning of the decade.
3. When the user swipes between story items, the content viewer updates to reflect the new active content. The thumbnail in the timeline mural highlights the new active story item. The user can use this swiping method to navigate between decades from the beginning of the story to the end. This method is the most uni-sequential method of navigating the exhibit.
4. The user has the option to navigate between decades by either clicking on a decade slider or clicking on a decade in the timeline selector. If the user is interacting with the two screen installation version, they only have the option to navigate between decades with the timeline selector.
5. The user can navigate between story items by clicking on thumbnails in the timeline mural. This is only available in the standard one screen orientation of the project as the two screen version only allows interaction through the content viewer. This allows the user to arbitrarily jump between story items without needing to swipe between stories and increases user agency for story navigation, but the ability to arbitrarily jump pushes back the authorial narrative structure.
6. Every story item contains a theme reference to the themes which contain that story. The user can click on these references to switch between themes to see the story in the context of the other available themes. The exhibit now reflects that theme and the user is now navigating within that theme until they choose to navigate to another theme.

7. The story progresses chronologically, but at any time the user has the option to navigate backwards in time to see prior stories. This is especially useful if they jumped between themes or decades and would like to better understand context that may have been missed.
8. The user can switch themes by tapping or clicking one of the theme buttons along the bottom of the content viewer. This can be done at any time.
9. The user can navigate between the stories in all decades and between decades with the swipe gesture.
10. When the user navigates to the end of the a story, they will arrive at a final slide that indicates that they have arrived at the end. This slide is the same for all themes and indicates a closing to the story narrative and includes a call to action if the viewer wishes to learn more about the project or become active in the project space or the affected communities.

#### *5.4 Variations of the final artifact*

The final project artifact is a digital exhibit that is hosted online for easy access as well as modified to be a physical installation. The two versions feature the same content and the same user interface, but the installation version has the content displayed on 2 screens (see figure 12). The primary interface is the web version, which features expanded functionality and easier access than the installation version. The differences between the web and installation versions stem from both pragmatic reasons as well as theoretically informed reasoning. From an interaction design theory, the installation is designed for more passive users who will be less familiar with the domain and interface. The installation tries to guide them through the experience more while still offering a full experience. The online interface is more familiar environment from which users willingly visit and therefore the user has a higher level of agency over of the material. From a pragmatic perspective, the exhibit was designed to be mobile, easily constructed and deconstructed, and cheap in order to be carried into the community for events. The two screen interaction allowed for existing hardware to be leveraged, as opposed to investment into expensive and heavy kiosk equipment.

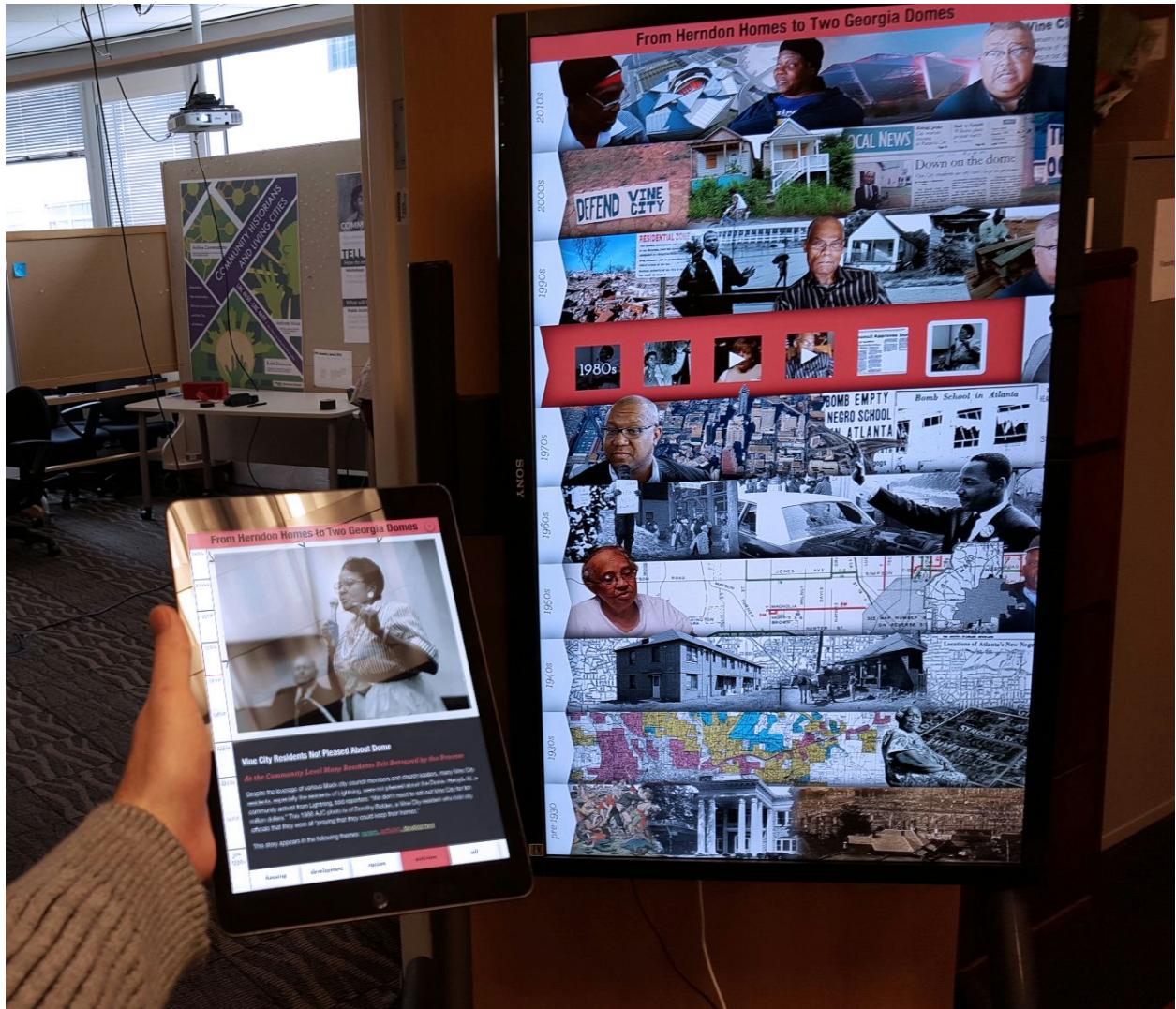


Figure 13, Final Design installation interface on 2 screens

The user can navigate the content in a few different ways that encourages exploration of segmented units as well as following an author driven narrative. The two main segmentations of the content are chronology and tagging by breaking up the stories into decades and assigned themes. These are the main two segmentations of the material that the user can use to jump between sections of the content. However, the content can also be navigated uni-sequentially by swiping (or clicking the next/previous arrow) to the next page of content on the content viewer. This method can be used to scroll through the entire story, starting with the first slide in the pre-1930 section, to the last slide in the 2010 decade. The interactions are meant to balance exploration within a uni-sequential narrative. In this way, users are free to determine their own experience, but that experience is still guided by an authored narrative and the segmented design structure.

The installation interface is intentionally restricted to leverage the interpretation design practice of guiding the user experience. The anticipated users of the installation version typically has a shorter interaction time and should be able to navigate the content without prior understanding of the domain. If the user wants to drill down deeper into the content, they have the agency to do so. Catering to these limitations, the user's interactions are restricted to the content viewer on the tablet. The mural reacts to the user's interactions on the tablet, but the user does not directly interact with the mural. The mural serves as a graphical big picture narrative for more passive viewing while the tablet allows users to intimately engage with the content by interacting with the ipad.

### *5.5 Future Design Possibilities*

The final artifact has advantages as well as room for further progress in future work. The primary advantage of the current system is the segmentation and granularity of access to the narrative. The system is also accessible in several different forms as both a public installation and web piece. The project features graphics and readable language for a wide audience. It would also be desirable to allow users to find micro-narratives or cross sections in the content that isn't evident in the current themes such as a narrative specifically about the newspaper coverage. The system has four themes hard coded, which each story item is assigned to. However, there are more themes that may be expressed in the text of the story item but not explicitly noted. Some simple text mining and word counting could show other themes currently not made explicit. A search feature could also shed light on a subset of story items determined by the user. These additions would increase would more fully utilize the semantic segmentation of the story already in place. As Dr. Murray writes, "Designers should look for ways to give end-users increasing access to the procedural power of the computer, allowing them to ask multiple questions based on multiple parameters of their own choosing, and to compare the results through meaningful views and juxtapositions." (Murray 2012, 237)

The form factor of the final design artifact could also be expanded for more traditional kiosk installations. It would be possible to migrate the current system to a large touch screen. A kiosk version would be similar to the current installation version, but the content viewer on the tablet interface would be made into a lightbox style content pullout on top of the timeline mural (see figure 14). If a venue specifically wanted a kiosk version, the details of the design modifications would be made at that time. These limitations could be addressed by expanding the current system if more time was available.

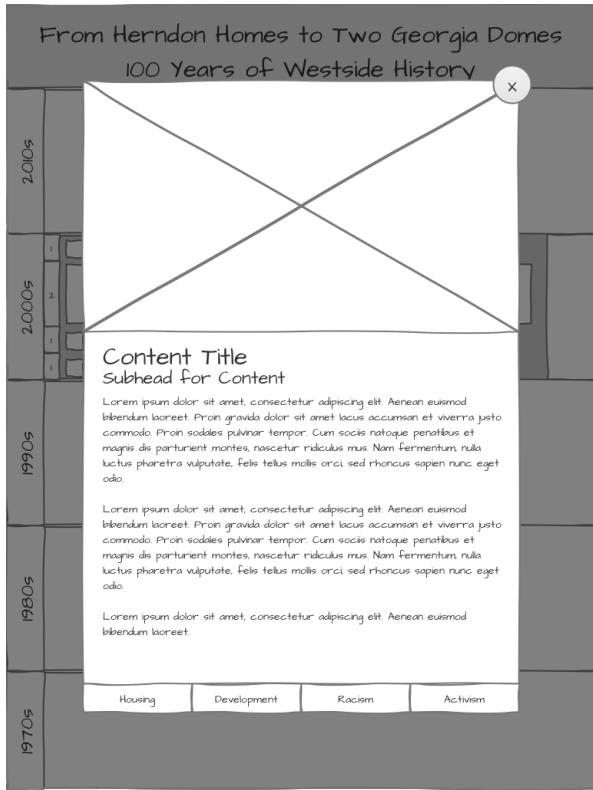


Figure 14, wireframe of a kiosk lightbox interface

## 6 Conclusion.

The final exhibit design of the Homes to Domes project is a contribution to the field of interpretation design as well as interactive storytelling. This project shows that fundamentally interactive narrative principles can be applied to heritage interpretation. It is a contribution to interpretation design in that it shows that exhibits can utilize semantic segmentation and exploration to encourage exploration in the cultural history storytelling process. In the field of interactive narrative, it shows that the database model for segmentation and juxtaposition of information can be applied to heritage interpretation.

The project, as an exploration, revealed some design insights for future projects. For this type of project, the individual datum, or story item, is more important than the big picture, which differs from the approach taken by such projects as Welcome to Pine Point that only tangentially use the individual cultural artifacts. Also, there is a zoomed out narrative used to guide the individual story, increasing meaningfulness to the user, unlike Object: Photo which exclusively gives users agency over navigating the content without offering a larger narrative for understanding the content as a big picture. Based on Tuan's theory of place, the project shows that location matters. While there are

distinct advantages of having an online exhibit, the location to which it is installed can elicit different reactions both as a critical piece for conversation as well as for eliciting emotional reaction from viewers.

The Homes to Domes project was a large multifaceted project with many different tangents and layers that culminated in the designed artifact detailed here. While this project was primarily a design project, the design decisions made throughout were researched and informed by different theoretical perspectives. By designing from a theoretically informed perspective, the design was able to answer the original research questions. In the beginning, three major research questions were posed. Below are those questions again, and how the project addresses each.

1. How can digital media and interactive storytelling be used for understanding and education for the benefit of underrepresented communities? By looking to interpretation design, an exhibit was created explicitly to create a user experience centered around informal education for the benefit of the communities.
2. In telling the heritage and cultural history of these locations, how can I delivery a century long community narrative while still portraying individual voices in a way that accurately portrays the spirit of the time and place. By looking at Murray's database model for segmentation and juxtaposition of information and Segel et. al.'s paper on narrative visualization, the story was able to be crafted for a zoomed out narrative as well as allowing the user to drill down into the segmented content.
3. How can Vine City and English Avenue benefit from digital exhibiry? By looking at reflective design, it was possible to use design to generate dialogue, critique, and mobilization from the community for the benefit of the initiatives in place by the Historic Westside Cultural Arts Council as well as the Public Participatory Lab at Georgia Tech. It also became evident that showcasing the communities stories in a exhibit form showed that their heritage is valued, despite the often oppressing notion of being overlook by policy makers and developers.

Homes to Domes was an exploration into these four different theoretical domains to see how the strengths of each can be leveraged to strengthen the way in which designers approach and execute working in heritage interpretation for the benefit and betterment of not just a design process or artifact, but for the people that are being represented.

## 7. Acknowledgements

This project was made possible through collaboration with several different people and parties working together for the greater goal of helping improve the communities of Vine City and English Avenue. The narrative content of the project was generated Katherine Diedrick and Todd Michney. The project was in partnership between the Participatory Publics Lab at the Georgia Institute of Technology in the School of Literature, Media, and Communication lead by Dr. Chris Le Dantec, and the Historic Westside Cultural Arts Council lead by Tracy Bates. Lastly, the project was informed by and for the benefit of the community members of the Vine City and English Avenue who were integral partners in this project. I am extremely grateful to have been brought into the broader project and to work with these wonderful people who helped shape this project and make it the rich experience it was for all parties involved.

## 8. Citation

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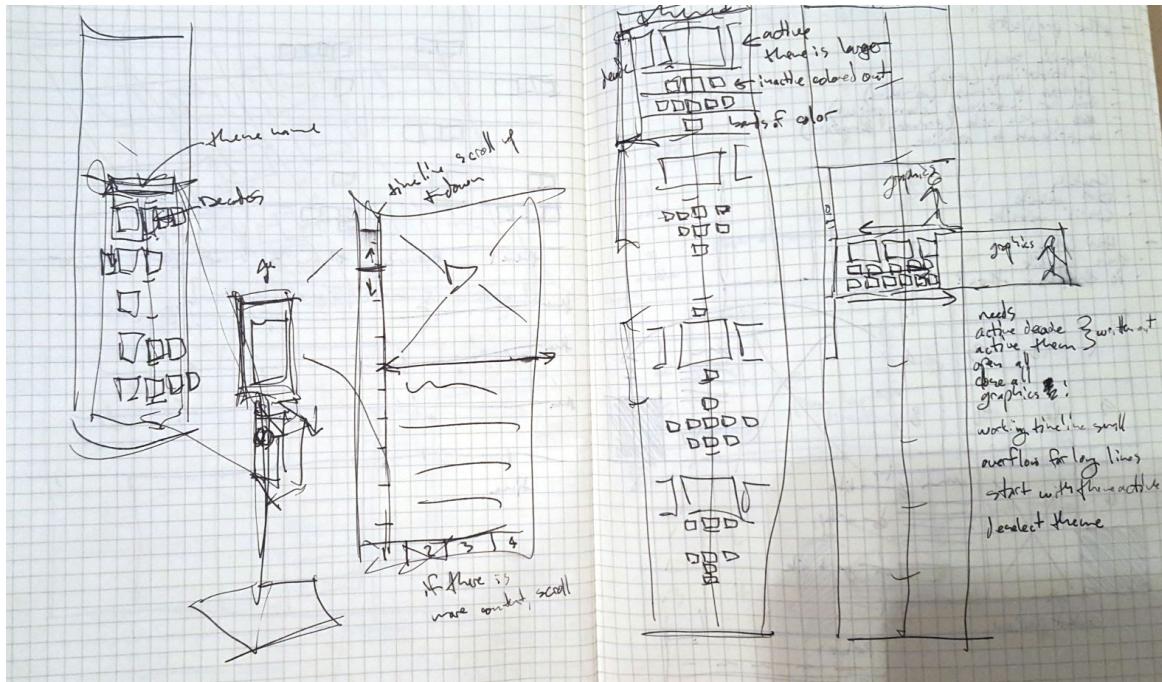
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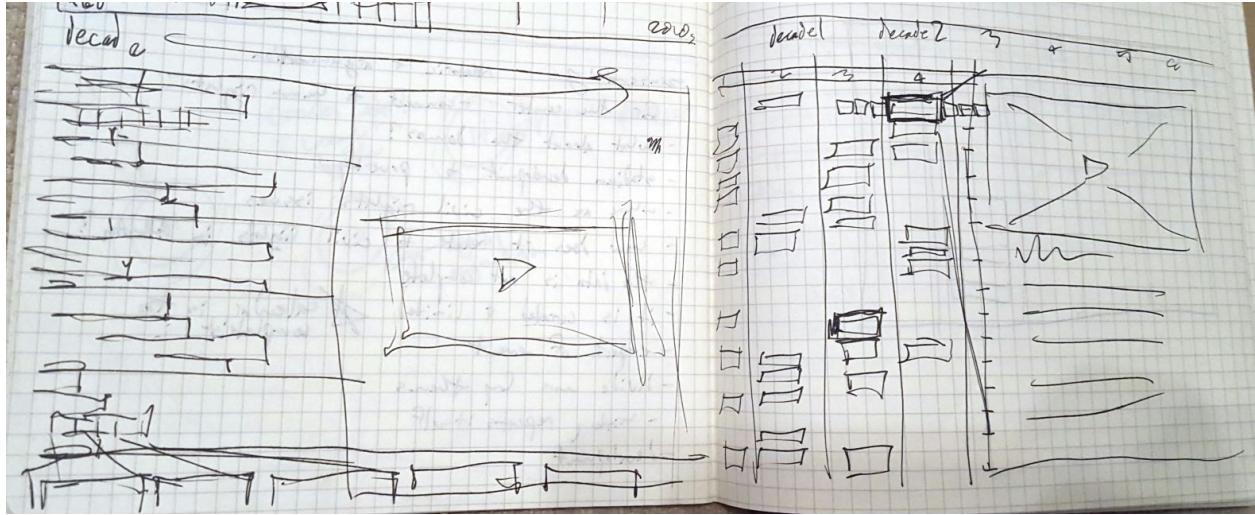
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<http://smalldesignfirm.com/churchill-at-a-touch-of-a-screen/>.

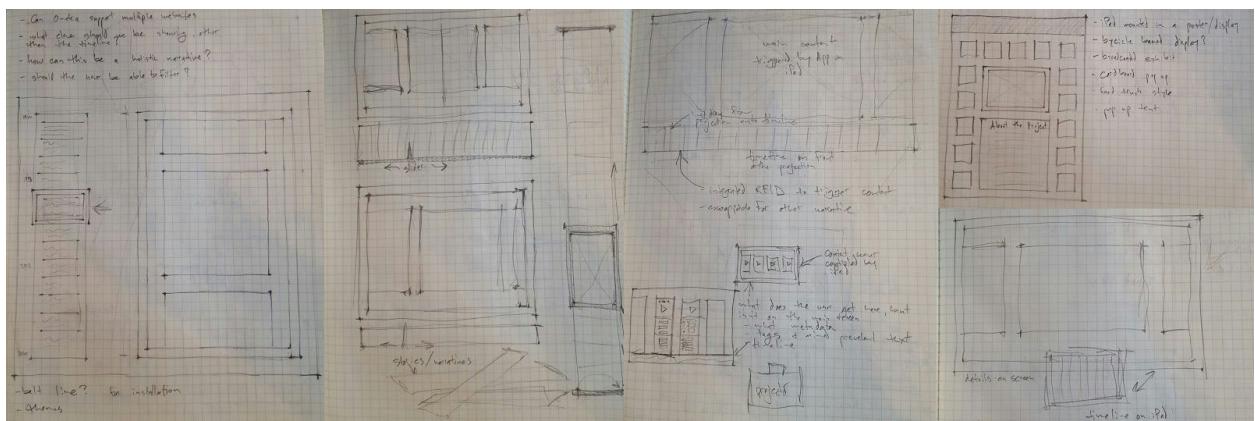
## 8. Appendix



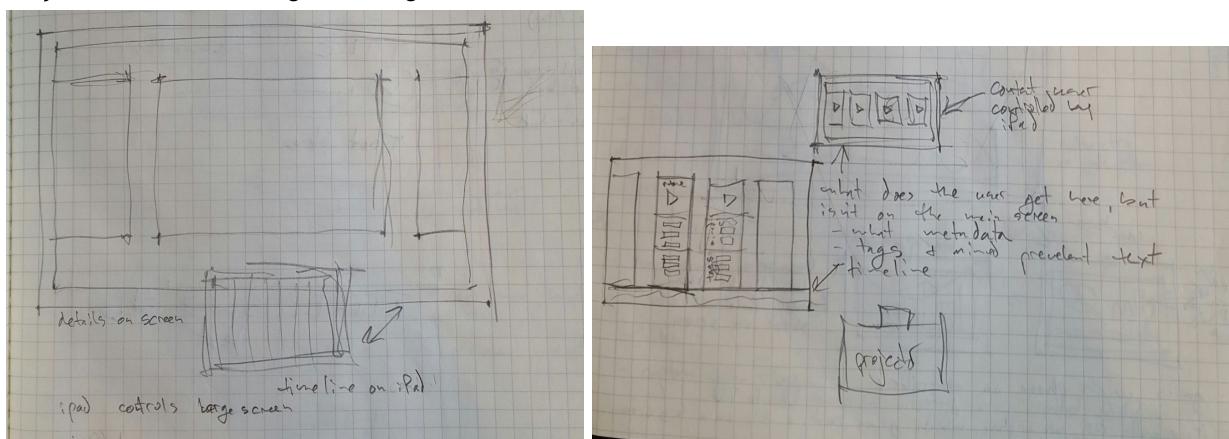
Sketch that developed into the final installation design



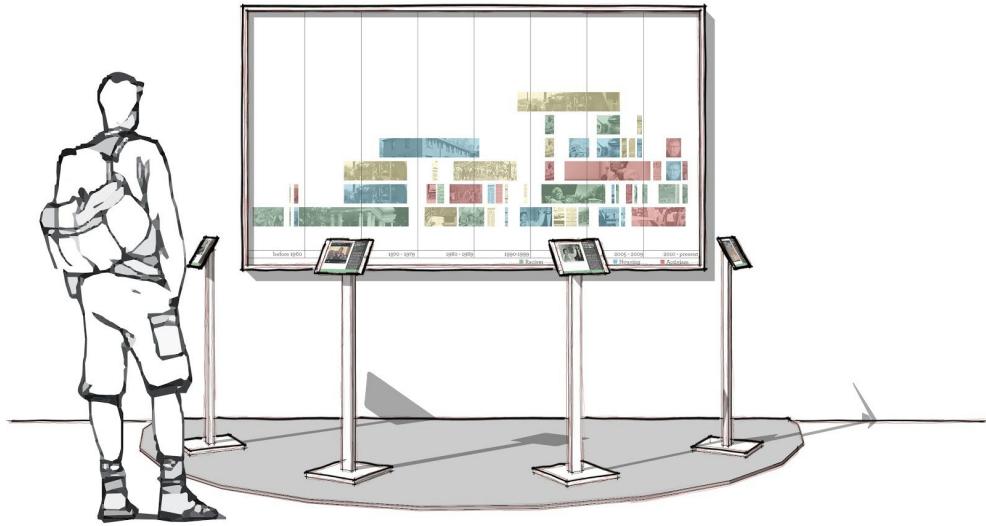
Early sketch for final user interface



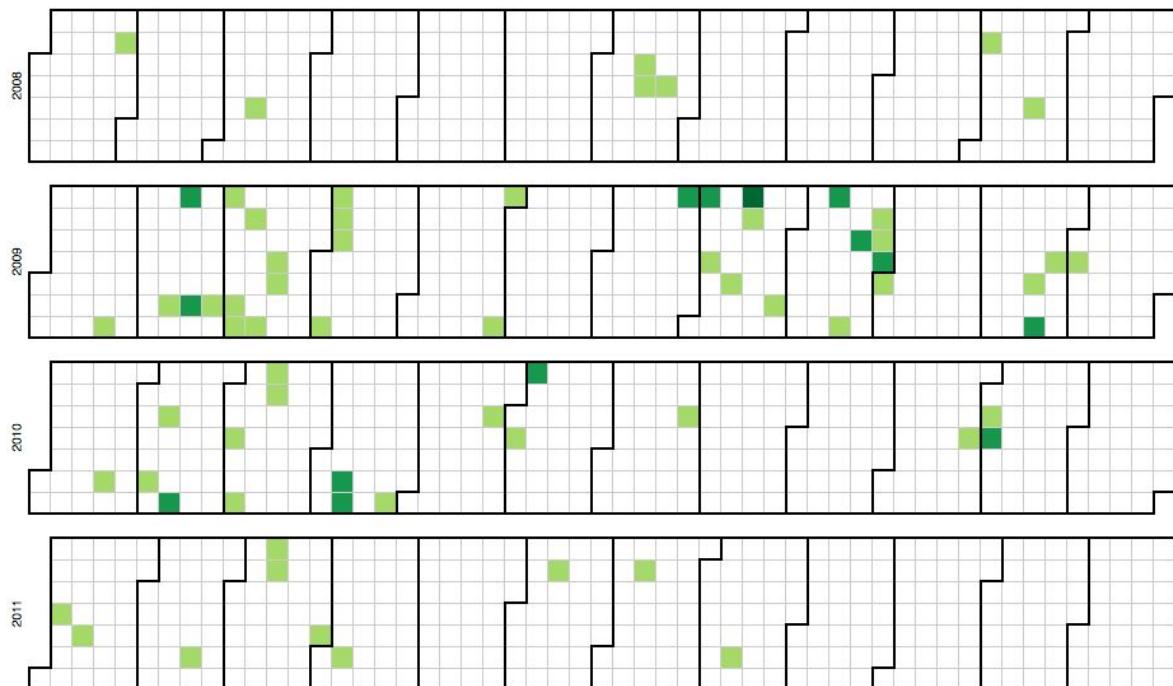
Early sketches for thinking about digital installation orientations



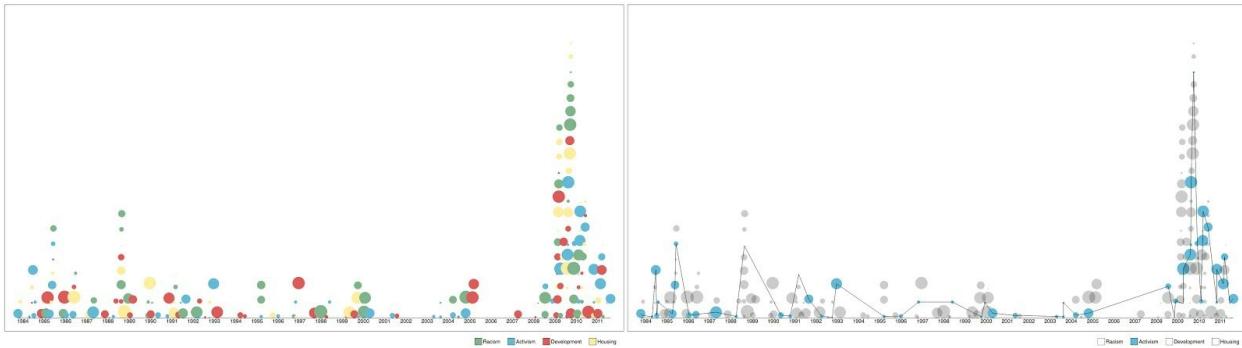
*Early sketches for thinking about multi-screen interactions*



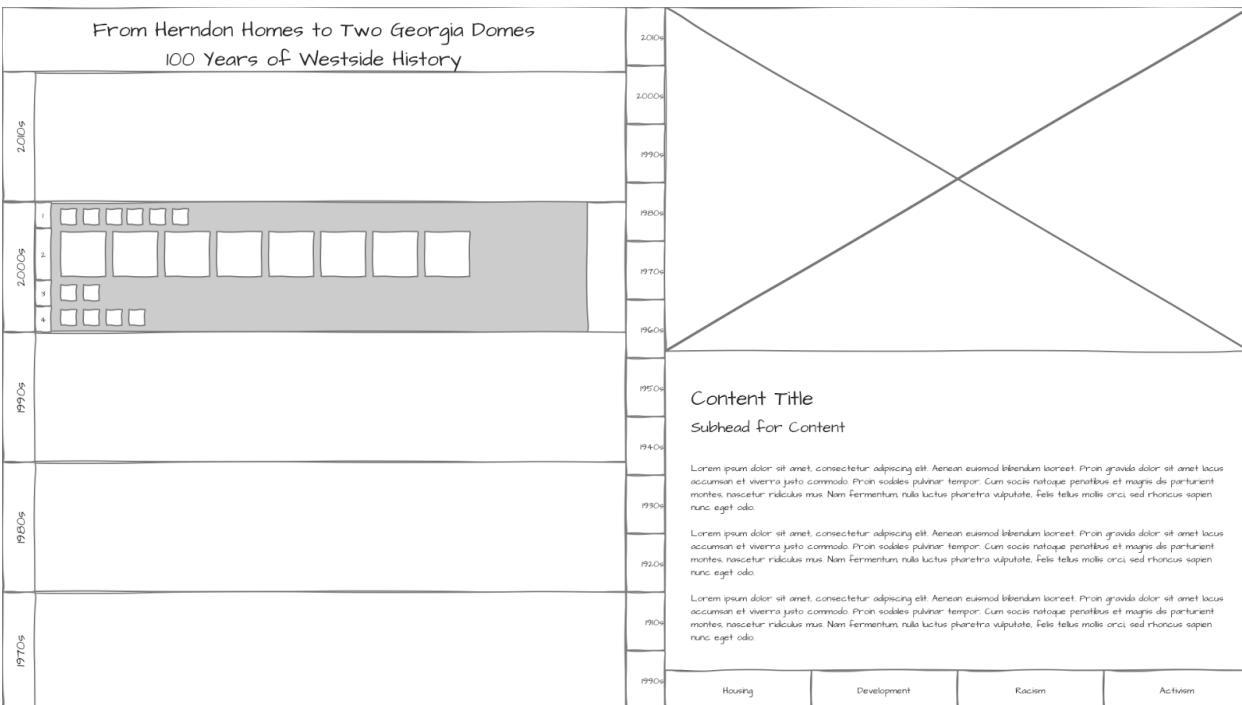
*Early rendering for digital installation with early user interface mockup*



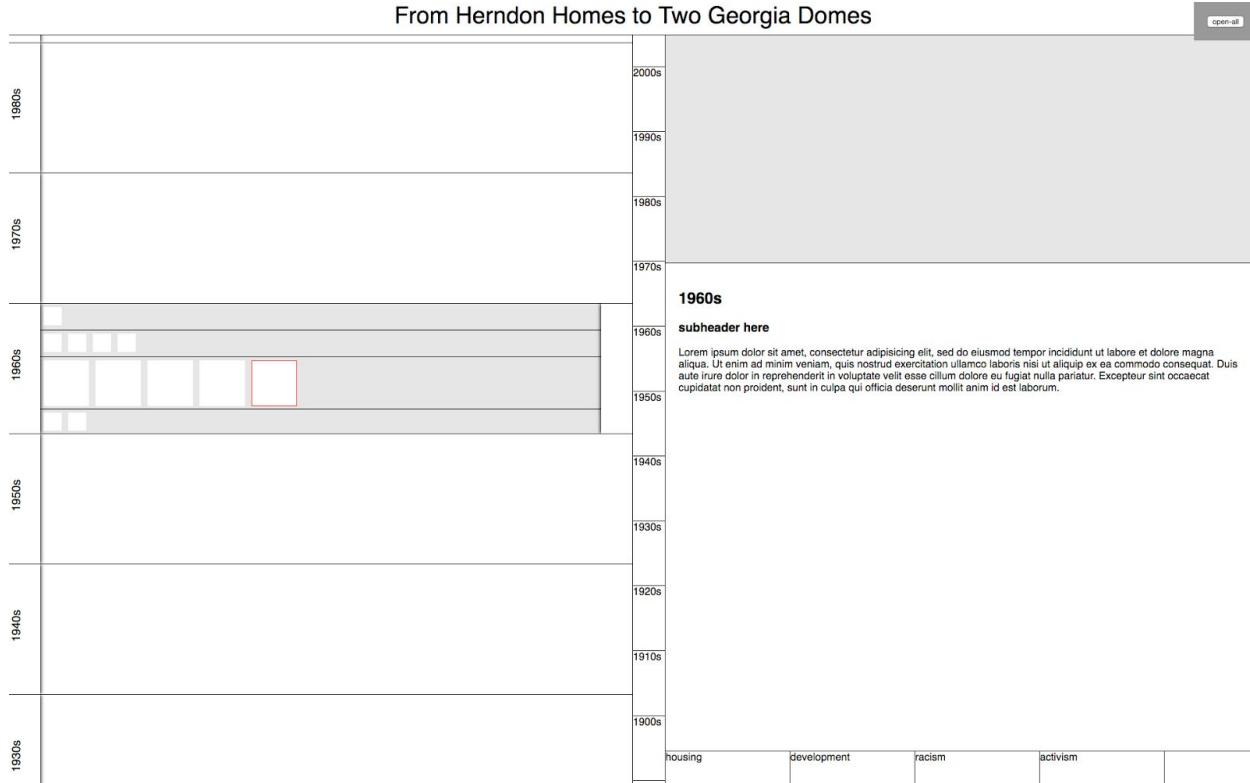
*Early prototype for story visualization techniques*



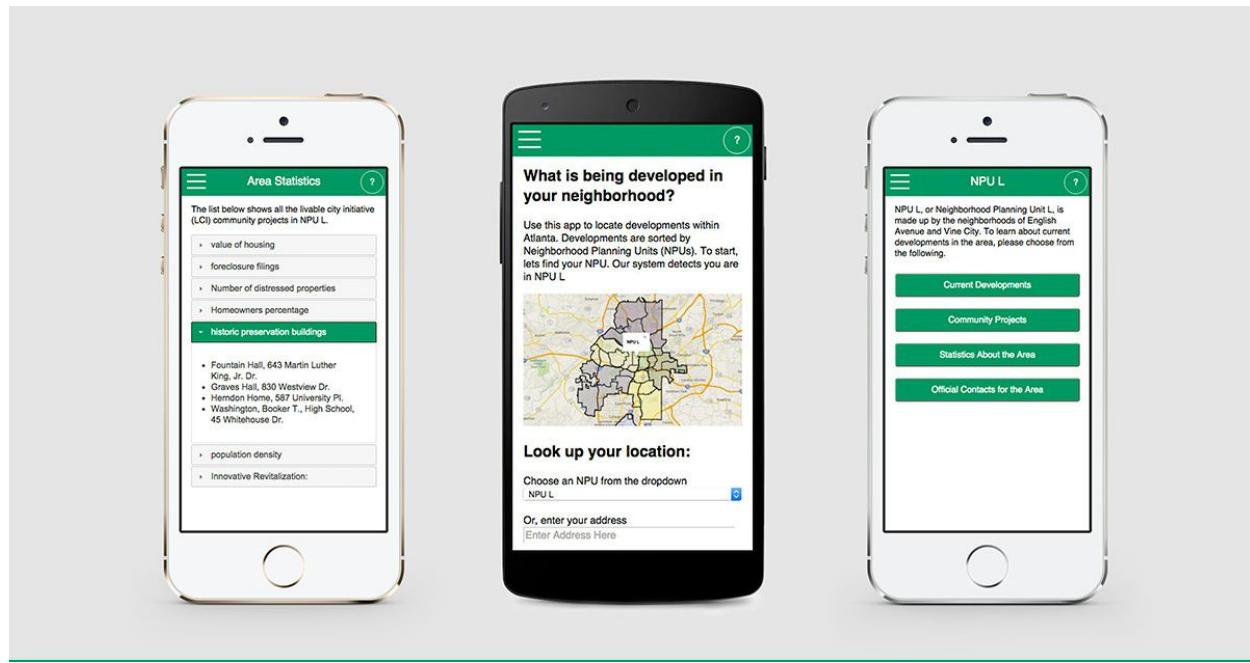
*Early prototype for story visualization techniques*



*Wireframe for final artifact design*



*Early functional prototype for final artifact design*



*Screenshot from ancillary project directly addressing the civic relationship between policy makers and community members. Full writeup available here:*

<http://russellhuffman.com/publicDevelopment/docs/finalwriteup.pdf>