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Exploring the Possibilities for an Open-Air Museum at the American Farm School in Thessaloniki, Greece

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Exploring the Possibilities for an Open-Air Museum at the American Farm School in Thessaloniki, Greece

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Abstract

The American Farm School (AFS) in Thessaloniki, Greece, established in 1904 as a collaborative Greek-American establishment, has a long history of introducing novel agricultural technologies to Greece, as well as serving as a space of refuge and learning. The AFS is considering developing an open-air museum on its campus to publicize its long history and continued innovations. We collected and analyzed data from observations, archival data on existing school tour programs, and interviews with staff, administration, and anticipated museum visitors. We presented our assessments at an interactive presentation overviewing our evaluation of guiding principles, museum content, and participated target audience, in addition to developing a prototype layout and exhibit design to guide future work.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>6</td>
</tr>
<tr>
<td>Background</td>
<td>9</td>
</tr>
<tr>
<td>Methods</td>
<td>39</td>
</tr>
<tr>
<td>Findings</td>
<td>53</td>
</tr>
<tr>
<td>Design</td>
<td>104</td>
</tr>
<tr>
<td>Next Steps</td>
<td>118</td>
</tr>
<tr>
<td>Conclusion</td>
<td>125</td>
</tr>
<tr>
<td>References</td>
<td>126</td>
</tr>
<tr>
<td>Appendices</td>
<td>131</td>
</tr>
</tbody>
</table>
Table of Abbreviations

AFS: American Farm School

OSV: Old Sturbridge Village

AAM: American Alliance of Museums

WSMTh: Water Supply Museum of Thessaloniki

AMTh: Archaeological Museum of Thessaloniki

AMH: Archaeological Museum of Heraklion
Danny compiled, edited, and finalized all of the dairy videos, while accepting input from other group members. He modified maps of the AFS campus for use in numerous parts of the paper, with team input. He also created the 3-D models of the prototype exhibit designs using Sketchup. Emma and Jake worked on the signage design for the prototype exhibit (Appendix K). Emma and Jake worked on formatting the document on Canva.com. All group members took pictures of locations on campus while on school tour groups for use in the final draft of the paper.
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Introduction

In an increasingly urban and industrialized world, the diminished presence of agriculture in everyday life has led to decreased public awareness of how food is grown and the technologies that have changed farming practices and rural life (Luckey, 2012). Agricultural museums have been, and still are, a powerful tool to reconnect modernized urban populations with the rural past, correcting the separation between the urban and rural lifestyle (Brigden, 2009).

Agricultural museums try to instill respect for the history and culture of the land (Shehata & Mostafa, 2016), communicating current and past agricultural practices in the contexts of technology and sustainability (Brigden, 2009). Many agricultural museums teach by example, demonstrating farming techniques for visitors to observe, with some adopting a “living history” approach to teach antiquated farming techniques along with political and social opinions of the target time period (R. Simmons, personal communication, February 9, 2018; Living History Farms Resources, 2018). Other agricultural museums describe past agricultural methods that parallel current practices, such as a side-by-side comparison of olive pressing at the Museum of the Olive and Greek Olive Oil in Sparta, Greece (Martha & Kotsaki, 2014).

Figure 2: Archiva; image of dairy farm at AFS
Potential visitors have been losing interest in museums based on agricultural topics in the past century, partly due to a loss of personal connection to farming. Agricultural museums are now responding to these changes to remain relevant by incorporating multicultural aspects and sustainability to appeal to a wider audience (Brigden, 2009). These aspects address the “social affinity” (Williams-Davies, 2009, p. 118) between the visitor and museum, which is the most apparent factor for open-air museum popularity. However, agricultural museums face pressure from dependence on seasonal interest or operation (Adams, 2016), as well as seasonal weather concerns for outdoor exhibits. The annual cycle of the tourism industry adds seasonal influence (Varvaressos et al., 2017), making visitor predictions unreliable.

Our sponsor, the American Farm School (AFS) in Thessaloniki, Greece, founded by American missionaries in 1904, has trained many generations of farmers from the rural areas of northern Greece and is widely recognized for its impact on Greek agriculture, from introducing the first combine harvester in Greece to the development of the first omega-3 eggs in the country (Marder, 2004; Charmei, 2017). The AFS is considering developing an open-air museum on its 350-acre campus, a third of which is a working farm with a dairy and bottling plant, olive groves, field crops, orchards, gardens, and greenhouses. The AFS wants to introduce visitors to this agricultural abundance, to highlight its continuing influence in the Greek agricultural sector and to present its long and varied history.
This project aimed to help the AFS develop a plan for a school-run open-air agricultural museum to showcase its role in developing innovative practices that have transformed farming and how natural resources are managed. Our project focused on identifying guiding principles for the museum, audience engagement strategies, program content and interpretation for the museum, as well as developing a site design and prototype exhibit. To better understand these issues, we conducted interviews with AFS officials, current visitors to the AFS from local schools, and staff from other museums in the Thessaloniki region. We also produced a prototype dairy exhibit for the museum, including a video detailing the milk production process.

Figure 4: Child feeding a baby cow at the AFS
Background
The American Farm School as a stimulator of innovation and helpful part of the Thessaloniki community

Since the founding of the American Farm School (AFS) in 1904, the institution has served as a stimulator of innovation for the rural communities of northern Greece while being a helpful part of the Thessaloniki community. Brenda Marder’s book, Stewards of the Land, (2004) compiles the history of the AFS, from the formation of the idea of a school dedicated to helping orphan boys and sons of poor farmers to 2004. Since its inception, the intention of the farm school was to provide a holistic education of “the head, the heart, and the hands” (Marder, 2004, p.23) under the guiding motto of its founder, Dr. John Henry House. The first set of school buildings was erected between 1904 and 1910 (Draper, 1994). Charlotte Draper, the wife of former president George Draper, offers a visual history of the AFS showing the construction of these buildings in her book, The American Farm School of Thessaloniki: A Family Album (1994). The Director of Technical Works & Environment Office, Antonis Petras, states that 95 of the original buildings remain today (personal communication, March 19, 2018); nevertheless, the American Farm School is continuously expanding. The AFS now includes a primary school, high school, college, master’s program, and an adult education program, with a middle school currently under construction (A. Petras, personal communication, March 19, 2018).
Originally, class content was related to farming strategies and the use of different innovations, such as using the first combine harvester in Greece and improving farm output. The land the AFS is currently on was not originally farmland; deep wells needed to be drilled to supply ample water to the school and to irrigate the fields (Marder, 2004). After years of hard work from the small AFS staff and student body, the school earned the nickname “the Ark,” because in the gray expanse of old Thessaloniki, the AFS brought the vibrant green color of life to the area (Draper, 1994). According to the AFS website, the farm has expanded through the years to include a dairy processing plant, a poultry section, a winery, and an olive center (American Farm School, 2018).

Every student currently has a part in the farm, either in the fields or through product development. Dr. Christos Vasilikiotis, a professor at the AFS with expertise in agroecology, was delighted that the younger students work the land, plant, and grow vegetables in their own garden area in an efficient manner (personal communication, March 27, 2018). High school students also have an active role on the farm, applying their classroom lessons to the fields. Undergraduate and graduate students do not play such an active role in the farm, but help with the innovation of AFS products through student projects. For example, a former student and tour guide Athanasios Bizbiroulas is fascinated by the student project that produced dried feta which, when rehydrated, tastes the same as before it was dried (personal communication, March 22, 2018). The student involvement combines theoretical classroom learning with hands-on fieldwork and product development, embodying the school’s founding mission.
Additionally, in the late 1960s, the AFS was one of the first farms to use selective breeding and artificial insemination (Hadjis, 1969) to improve the productivity of the school’s Holstein cows. The AFS had their first involvement with Holstein cows in 1935, with shipments coming in 1948, Figure 7, and 1968 (American Farm School, 2018), to replenish the herd. Since the Holstein is the most productive cow breed in the world (Facts about Holstein cattle, 2018), this led to the AFS becoming one of the most productive dairy farms in Greece per cow (Willis, 1980).

In addition to engaging students in farm work and product development, the AFS has been a leader in agricultural innovation. Christine Willis, who has spent the majority of her life at the AFS, relates stories of the AFS bringing the first combine harvester, first dairy pasteurizer, and first cotton picking machine to Greece (personal communication, March 27, 2018). One of the major innovations was the dairy pasteurizer at the AFS that started producing pasteurized milk in 1935 (Marder, 2004). The dairy pasteurizer improved milk quality in Greece since pasteurized milk has a longer shelf life and contains fewer harmful bacteria (Goff, 2018). The AFS’ milk was the first in Greece that was considered generally safe to drink.
Even though the AFS was at the forefront of agricultural technology, it balanced the introduction of new methods with mastery of older agricultural techniques. In 1914, a Harmon reaper was purchased as the first mechanized farming equipment at the AFS, which started a change in the way the AFS farmed (Draper, 1994). New machines and production methods were carefully implemented as the growing capabilities of local farmers developed (D. Willis, personal communication, March 27, 2018), but previous techniques were taught to ensure the students were capable in any environment they might encounter after the AFS. This innovation was crucial to the survival of the school in its early days, as the school paid a large portion of its bills through profits made by the farm products the students harvested.

In addition to driving the agricultural techniques of Greece forward, the AFS has provided help and assistance during times of trouble and crisis becoming an essential part of the Thessaloniki community. During the early years, AFS served as an orphanage, housing and educating the poor rural population on farming strategies. The AFS tried to bring stability to the region of Salonica, which was part of the Ottoman Empire till 1912, as the area was in unrest (Marder, 2004). Dr. House saw the need for a safe haven in the area; he opened a school to address this issue, with one building that housed a teacher, a farmer and his wife, and thirteen orphans in their preteen years, with the majority of the orphans being of Slavic descent (Marder, 2004). Limited information survives regarding the first graduating class; the school was still in the stages of being established, and documentation wasn’t maintained well by the farmer and teacher, who were focused on teaching the children and surviving. The first year to have a graduating class from the AFS was 1911 (American Farm School, 2018).

Figure 8: AFS student at work (Marder 2004).
Throughout the Balkan Wars, World War I, the Asia Minor population change of the 1920s, World War II, and the Greek Civil War, the AFS was a safe haven for people in the Thessaloniki area to find food and shelter (Marder, 2004). David Willis, associate director of the AFS from 1978 to 2004, tells how the AFS provided that safety by adapting to the needs of the time. During World War I, the AFS became a field hospital and manufacturer of the needed medical supplies for the soldiers fighting on the major front of Thessaloniki, giving the soldiers a sense of humanity (personal communication, March 27, 2018). During the Asia Minor refugee movement, the AFS became a place of shelter, food, and work, giving hope to those that had nothing. Even during the Great Depression, with the AFS desperate for funds, the teaching staff’s salaries cut in half, and Greece reeling from the global depression, celebrations were held for the graduating class (Draper, 1994; Marder, 2004), see Figure 9. The subsequent German occupation of Greece at the start of the World War II turned daily life into a daily struggle to survive while the Germans took the food and supplies they needed. The German air force used the AFS as a communications headquarters from 1941 to 1944, while seizing food and supplies from the AFS (Marder, 2004). Despite occupation, the AFS actively tried to supply the community with food and other supplies. The students and faculty of the AFS endured together and survived under the German pressure without the guidance of AFS president Charlie House, forcibly removed by the Germans (Marder, 2004).
With the retreat of the German occupiers in 1944, a power vacuum formed in Greece, plunging the Nazi-ravaged country into a civil war from 1946 to 1949 that pitted brother against brother (D. Willis, personal communication, March 27, 2018; Marder, 2004). People once again found support at the AFS for food and shelter, even as the AFS was barely surviving itself. The AFS continued on, but faced one of its lowest points in 1949, when 41 students were kidnapped by the “anti-monarchist andartes” to bolster their numbers (Draper, 1994, p. 96). Each student was able to escape on his own and able to return to the AFS to graduate. The AFS had proven that it could endure, even when it seemed like the school had little to no chance to survive.

Figure 10: James Hall after a Nazi bomb exploded. (Marder 2004)
The AFS has become a key part of the Thessaloniki community and has a fascinating history to relate. To communicate its rich history, the AFS is considering creating an open-air museum on its 350 acres to build on its current educational programs and activities. Currently, the AFS attracts over 15,000 visitors per year to tour the campus and participate in school-hosted events, run by Educational Programs Director Irini Stamatiou. In addition, upwards of 6,000 people annually attend a special community event hosted at the AFS called May Day (personal communication, March 19, 2018). On this day, the campus is open to the public, free of charge, to explore and participate in engaging activities. Although materials and programs, including signs and demonstrations, educate visitors on some of the processes performed on campus, expanding and formalizing the interactive content could significantly improve the experience. An established open-air museum at the AFS could also further expand community engagement with the school and redevelop people’s appreciation for agriculture and food production.

Figure 11: Vineyard at AFS campus
As early as the 19th century, the roles of agriculture and farming started to change in society. The Industrial Revolution in Europe and America caused the first large wave of people migrating from rural communities to urban centers. The Industrial Revolution allowed for people to improve their standard of living with the advancements in technological achievements, such as transportation and building construction.

By the 1890s in the United States, over 30% of Americans lived in urban areas, and that number continued to grow (Urbanization of America, 2018). In 1955, the number of people living in an urban setting worldwide was over 865 million people, with American urban centers containing 111 million people and Greek urban centers containing 4.3 million people (Figure 12) (The World Bank, 2014). In 2016, the number of people living in cities in America was 265 million people, about 82% of the total population of the country, and about 8.4 million people living in Greek cities, about 76% of the total population of the country (Worldometers, 2017; Greece-Population, 2018, The World Bank, 2014).

Figure 12: The trend of increasing population in urban centers since 1955 (The World Bank, 2014)
The Industrial Revolution affected the conditions of living in rural areas as well. Before the revolution, working in agriculture was intensive work that required hard labor. Typically, a whole family would run a farm as their source of income and achieve self-sufficiency. As mechanized farming technology developed, the number of people required to both plant and harvest crops decreased (University of Wisconsin, 2016). Such mechanization shifted employment away from agriculture towards urban industry (University of Wisconsin, 2016).
In an effort to teach a growing urbanized society about the value and importance of agriculture, museums can provide engaging, informative experiences that revive an appreciation for food and food production. A museum functions as an educational institution that serves all age groups, including playing an important role to communities as schools and libraries. In the United States, a reported 90 million school children attend a museum every year (Bell, interview with CNN, 2013), representing a massive influence on young minds. Schools and teachers are using museums as an extension of the classroom. Museums fill the gaps that are created by either lack of education, social difference, cultural changes, and even economic difficulties (Bell, interview with CNN, 2013).

Museums in Greece are used to supplement school curricula for students all over the country. In Greece, schools participate in at least three excursions or field trips per year with a maximum of about ten, by law. Schools are required to run at least two of the excursions to educational sites, including cultural, archaeological, historical, or ecological sites, or environmental education centers. The justification is that “educational excursions are a necessary complement to the education of pupils and students because they enable them to come into contact with places of special educational value, to know the achievements of man in the long-term course of culture and to cultivate their sociability” per the Excursions act of 2017. Teachers fit the material found at different museums into their curriculum and satisfy the legislation.
Open-air museums were developed to combat a perceived loss of traditional knowledge and revive interest in agriculture and folklore. John Williams-Davies (2009), Director of St. Fagans National History Museum, in his history of open-air museums in Europe, argues that the advent of open-air museums was partly stimulated by political turmoil in Europe in the early 1900s that fueled nationalist sentiments. He adds that the purpose of open-air museums, beyond education, is to rekindle interest of culture and history in people. Some of the earliest open-air museums were established in Scandinavia in the late 1800s, offering “a concise picture of a nation’s life and culture — the traditional culture and native way of life” (Williams-Davies, 2009, p. 116). During the later part of the nineteenth century, the early museums were considered to be part of a movement that was a response to social changes caused by a shift towards industrialization and urbanization. Open-air museums are about reaching the visitor by addressing “emotions, experience, empathy, a narrative, and memory” (Williams-Davies, 2009, p. 118).
To communicate to the visitor, the open-air approach lends itself to several themes, including the history of the natural area and the local culture (Martha & Kotsaki, 2015; Williams-Davies, 2009). These styles of museums are intended to spark an interest in folklore, folk customs, folk song and dance, and agriculture among the public and through academia (Williams-Davies, 2009). These open-air museums, it is argued, are essential for “the creation and maintenance of identity” (Williams-Davies, 2009, p. 117) in terms of preserving the history of a nation’s people.

The Museum of the Olive and Greek Olive Oil in Sparta shows the change of technology and production of olives and olive oil in Greece and connects nature and culture by showing how olives have influenced mythology, religion, and Greek customs. Pieces of art that display olives or are inspired by olives are exhibited in an exploration of the olive in Greek culture. The museum is also split up into different time periods; in each period, content shows how olives and olive oil have impacted the economy and everyday life, such as nutrition, the Greek diet, body care, and other uses, such as oil lamps to light the home (Piraeus Bank Group Cultural Foundation, 2018).

Figure 16: Oil press at the Olive and Greek Olive Oil Museum, PIOP (2018)
Another reason to adopt the open-air concept is to present a historical rural lifestyle to visitors, sometimes through a ‘living’ or ‘working’ approach (Old Sturbridge Village, 2018; St Fagans, 2018). The concept is to have visitors imagine living in the past with the tools, situation, and the style of that period to give them a sense of understanding and appreciation for present-day possessions and technologies (Williams-Davies, 2009). An example of a ‘living’ history museum is Old Sturbridge Village (OSV), an agricultural history museum set in rural Massachusetts in the 1800-1830s, with actor-interpreters who interact with visitors while in character and period dress (Old Sturbridge Village, 2018). The village trades are practiced in the same manner as in 1830s, so the village functions to preserve the knowledge of the hand skills of the time (R. Simmons, personal communication, February 9, 2018).
Open-air museums can incorporate the history of the natural area and local culture while presenting a historical lifestyle; an example is St. Fagans National History Museum of Wales. In England, this rural open-air museum has found success by representing and engaging the history of its surrounding community. John Williams-Davies (2009), assigns much of St. Fagans’ success to engage with the community, specifically the ethnic minorities in Wales. St. Fagans also has several old buildings that communicate the style and purpose of the buildings from the time between 1100 to 1520 in Wales.

However, St. Fagans is also considered a ‘working’ museum, where people work in different traditional trades such as blacksmithing and corn milling. For the items that are produced during through different trades, they are sold and used as another source of revenue for the museum (St. Fagans National Museum of History, 2018). St. Fagans is at the forefront of open-air museums in the United Kingdom, receiving a £11.5 million ($17.9 million) grant from the Heritage Lottery Fund in 2012 to renovate its galleries (Adams, 2016) and attracting 600,000 visitors yearly (Williams-Davies, 2009).
The American Farm School is investigating the feasibility of an interactive open-air museum that will convey the school’s history, its relation to the region, and its agricultural innovations, as discussed above. However, the AFS also contains ‘working’ elements; the campus contains several schools, functioning farmland, and food processing facilities. Visitors will observe the ‘working’ elements through the activities of the farmworkers and students, though the museum must not interfere with school and farm functions.

Studying successful open-air museums in Greece can inform the AFS when considering the creation of a new open-air museum. In Greece, several successful folk and open-air museums have been developed by the Piraeus Cultural Foundation, aiming to show the culture of the area and the importance of the surrounding region (Martha & Kotsaki, 2015). The Piraeus Bank Group Cultural Foundation is a Greek foundation with a mission to support the preservation and showcase of Greek culture such as how silk has affected the Greek people and how olive oil has been incorporated into the mythology of ancient Greece through artisan and industrial technology. It encourages museums to incorporate Greek culture with the natural world.

The Foundation runs sites across all of Greece and includes a museum network, historical archives, a library, educational programs, and cultural and academic events. The museum network includes nine different museums in Soufli, Lomina, Volos, Lesvos, Chios, Stymfalia, Dimitsana, Sparti, and Tinos. Many of these museums have an open-air layout, meaning that they have outdoor exhibits, with many including demonstrations. For example, the Museum of the Olive and Greek Olive Oil features olive pressing using new and antiquated technology, and the Silk Museum in Soufli displays the various stages of silk production (Piraeus Bank Group Cultural Foundation, 2018).
Since each museum is unique in its location and circumstances, starting a museum requires a plan that assesses all possible variables that would define the museum in question and distinguish it from other museums. A plan should outline guiding principles, analyze target content, account for target audiences, propose engagement strategies, and anticipate site design issues of the museum and exhibits.
The guiding principles of a museum

A museum’s mission serves to reflect the museum’s identity and goals and to direct the purpose of the museum in a way that caters to its visitors (George & Maryan-George, 2012). According to George and Maryan-George (2012), two museum experts who wrote Starting Right: A Basic Guide to Museum Planning, a good mission statement expresses both the intent of the museum and its limits. The American Alliance of Museums (AAM) agrees, adding that a mission statement offers a standard upon which the museum’s success can be measured (American Alliance of Museums, 2014). The Smithsonian Institution’s Office of Policy and Analysis (2002) further indicates that a museum’s mission statement depends on the specific circumstances of the museum.

Figure 21: Smithsonian Natural History Museum at Washington, D.C. (2017)
These principles are evident in the mission statement of OSV (2018), presented as, “a museum and learning resource of New England life, [that] invites each visitor to find meaning, pleasure, relevance, and inspiration through the exploration of history.” Here, the museum’s mission is clear in that it aims to provide visitors with an appreciation of the everyday actions and hardships of people living in the New England area about 200 years ago. By contrast, the Smithsonian Institution (2018), founded in 1846 with funds from the Englishman James Smithson, offers its broad mission as “an establishment for the increase and diffusion of knowledge among men.” This statement allows the museum to explore many different avenues of interpretation, responding to the interests of directors and visitors as they change through time. As a final example that might align more closely with the vision of the AFS, the Museum of the Olive and Greek Olive Oil in Sparta states its mission as “highlight[ing] the ineffable relation of the olive with the identity of Greece and, more generally, the Mediterranean basin. The olive and the olive oil are presented at this museum from different optical angles: the economy, nutrition and the olive’s uses, religious worship, art and technology” (The Museum of the Olive and Greek Olive Oil, 2018). This mission statement reveals the narrow scope of the museum, focusing on the olive, but also its value in revealing the importance of the olive in regional livelihoods throughout time. The AFS’ museum should consider a similarly narrow mission statement. Based on current information, the mission statement should indicate its desires to inform, develop appreciation for, and curate Greece’s agricultural history, while also revealing its innovative agenda within Greece and the region.
In addition to the mission statement, additional foundational statements, such as mandates, goals, and objectives, define the scope and intentions of a museum. Mandates clarify the range of the mission statement to a timeframe or geographic region, while goals and objectives break down the museum’s direction into long- and short-term planning, respectively (Lord & Lord, 2009). For example, the mandate of Old Sturbridge village would clarify its time frame of focus as the years 1800-1830.

A clear and precise operational system is crucial for a museum plan, yet a variety of strategies are proposed by museum professionals. George and Maryan-George (2012) recommend clarifying the responsibilities of each member and committee of the museum explicitly, before opening the museum. There are numerous ways to divide the management responsibilities of a museum, however. According to Rhys Simmons, the OSV Director of Interpretation, OSV structures its staff into three groups (personal communication, February 9, 2018). The curatorial staff maintains artifacts, the educational staff oversees visiting school groups and hands-on learning on-site, and interpreters interact with visitors while in antiquated dress. This separated design allows for relative autonomy when addressing issues, as each group has its own director. Another perspective divides the operation of a museum into six functions, with the administration responsible for connecting and controlling the other six: collecting, documenting, preserving, researching, displaying, and interpreting (Lord & Lord, 2009). These different approaches to dividing operational responsibility for museums reveal that the AFS will have to consider an approach that works well for them, possibly building on systems already in place.

Figure 23: Explanation of Museum Operational Structure according to Lord & Lord (2009)
Multiple sources suggest continued planning and adjustment as the museum operates, as plans may need to be adjusted to accommodate for sudden successes and failures (American Alliance of Museums, 2018; American Association of Museums, 1992; George & Maryan George, 2012). A plan is meant as a guideline to reach objectives and should be flexible when goals are not being met (George & Maryan-George, 2012). The AAM (2018) cites ongoing and reflective planning for audiences as a standard in museum planning. Documenting the planning process and having “a current, comprehensive, timely, and formal institutional plan that includes both strategic and operational elements” provide the necessary structure for success (American Alliance of Museums, 2018). Plans should be reviewed at least annually and extended regularly. Therefore, planning is a regular, ongoing endeavor instead of an initial set-up process. Along similar lines, museum plans that keep the museum alive and dynamic attributes to the longevity and success of the museum (George & Maryan-George, 2012). In the past 20 years, OSV has added lodging options, wedding planning, theatrical productions, a gift shop, holiday events, and a solar field to augment its efforts to remain sustainable (R. Simmons, personal communication, February 9, 2018).

Planning an open-air museum at the AFS would require addressing the elements discussed in this section. The mission statement will require an understanding of the intent and limits of such a museum, with input on the purpose and content from all concerned parties. The operation of the museum will require considerations for possible staffing and governance, whether by students, faculty, or a committee.

Figure 24: Evening view from the AFS.
Assessing a museum’s target content and audience

Museum professionals have begun assigning more significance to understanding the target audience and surrounding community in recent years. This interest is partly stimulated by the challenge of competing with other leisure activities (Brida, Nogare, Brida & Gabriel, 2016) as well as increasing operating costs and decreasing funding (Gofman, Moskowitz, & Mets, 2011). In the eyes of Ford Bell, president of the AAM until 2015, smaller museums succeed by engaging with the surrounding community, placing themselves alongside public schools as learning institutions (Bell, interview with CNN, 2013). Agreeing with Bell’s opinion, the American Association of Museums, now the AAM, recommended that museums provide education to all visitors, as opposed to focusing more on the preservation of artifacts and collections (American Association of Museums, 1992). In addition, the AAM recommends that museums change policies to embrace the diversity of the surrounding community. These recommendations reflect a changing perspective of museum in the 1990s. Museum policies in the 1980s were more focused on an ideology of preserving and accumulating works to gain renown (Bell, interview with CNN, 2013; Weiss, 2016). While large, famous museums in cities can offer numerous and varied programs to their community, smaller museums, like the AFS museum, need to focus on specialized programs, targeting certain age groups or demographics specific to the surroundings of the museum. Even so, considerations need to be made for variations in language, education, and subject interest.

Figure 25: Cherry Blossoms at the AFS
To assess the potential interests and desires of the target audience of the AFS museum, the AAM (2014) recommends offering an open forum or survey to gather community input on museum content. Veteran museum planner Mark Walhimer (2011) emphasizes open-mindedness during these community assessments; since the discussion is a direct link with the target audience, the museum planner should give priority to the desires of the community over their own content interests. Furthermore, check-ins with members of the potential audience should be conducted routinely during the design process, in an effort to ensure plans and content areas are aligning with visitor interest (Walhimer, 2011).

Exploring other museums in the area is also recommended by the AAM (2014), in an attempt to understand how the new intended museum is offering something unique. If the target audience and purpose of the new museum matches closely with that of a nearby museum, both institutions could suffer economically. Museum professionals advise that aspiring museum planners visit other museums to evaluate the competition and explore possibilities for a niche content offering. These visits can also be instructive in successful museum practices. Walhimer (2011) recommends visiting museums of a similar type for inspiration for a new museum. Successful traits or practices could be adopted by the new museum. The areas of content that are not addressed by other museums indicate a potential niche or opportunity for the museum. Two possible ways to differentiate a museum are offering a unique experience, such as OSV’s living history approach with actor interpreters, or by determining that competition for the target audience’s attention is nonexistent in the immediate area.

The development of a museum at the AFS will require evaluating the opportunities for content that are already offered on campus, as well as exploring related museums in the area. The AFS should recognize the unique elements it offers, either through content or through delivery approach. Planning a museum at the AFS will also require considerations of visitor/audience interests and preferences, which should be assessed routinely through the planning process.

Figure 26: An ultra-wide rectilinear stitched panorama of the Great Court of the British Museum in London, United Kingdom (2013)
In considering exhibit design, the AFS museum should consider two primary features: the layout of the museum within the campus, and specific exhibit content and structures. As the museum will be an open-air museum, incorporating established elements like the working dairy and the olive grove, some aspects of the physical layout of the museum are predetermined. According to Saul Carliner (2003), a professor of Information Communication and Design, specific physical and abstract features can improve a visitor’s experience (Table 1). Physical features include the spaces between exhibits and the orientation of display items that offers a flow or direction to the exhibits. More abstract dimensions include how the layout immerses the visitor in different displays or the museum as a whole, and how the information is layered within the exhibits.

<table>
<thead>
<tr>
<th>Type of Design Feature</th>
<th>Design Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>Open space between exhibits to avoid “audio bleeding”</td>
</tr>
<tr>
<td></td>
<td>Limited number of items on display</td>
</tr>
<tr>
<td></td>
<td>Center-oriented floor plans to guide visitor exploration</td>
</tr>
<tr>
<td>Abstract</td>
<td>Immersion of the visitor</td>
</tr>
<tr>
<td></td>
<td>Limited number of strong themes exhibit-wide</td>
</tr>
<tr>
<td></td>
<td>Layering of text content depth</td>
</tr>
<tr>
<td></td>
<td>Accessibility of information to unfamiliar visitors</td>
</tr>
</tbody>
</table>
Agricultural museums with an open-air concept often lack conventional floor plans; however, open-air museums may still adopt center-oriented layouts to aid visitor navigation. As an example, OSV has positioned its buildings into three clusters and set a drop-off point for school groups at a single location to simplify visitor traffic (R. Simmons, personal communication, February 9, 2018). As shown in Figure 27, the paved area (4) is the school drop-off location, far away from the arrival point for other visitors (5). The three clusters of buildings are the common (1), the farm at top center (2), and the museum cluster at bottom center (3). OSV also utilizes fences to direct visitor traffic between buildings and areas while keeping them within the museum area, all while leaving the scenery open for visitor viewing. The AFS has its own space issues to consider for its exhibits and must also anticipate the impact that its layout will have on guiding visitors to and from exhibits.

Figure 27: Map of Old Sturbridge Village, modified, detailing the layout of buildings and open areas (Village Map, 2018)
Additional layout considerations for an open-air museum include building relocation, restoration, and preservation (Lord, Lord, & Martin, 2012) as well as power supplies. Physical space does affect learning, and planning should consider how space can maximize learning opportunities, including engagement with and ordering of content (King & Lord, 2015). Exhibits in open-air museums are likely free from air circulation or temperature requirements by nature. However, if sensitive objects, such as antique tractors and combine harvesters, are on display in an open-air museum, concerns for weather conditions may necessitate appropriate action to protect exhibits from the elements. Furthermore, given that the AFS campus contains schools and a functioning farm, incorporating a museum will require recognition of campus traffic, zoning, existing location of possible exhibit material, movement of material to new locations, and future school layout changes.

Specific exhibit content and design must consider not only the interests and abilities of visitors but also the type of content that is available to display. According to Carliner (2003), museums should immerse visitors without overwhelming them with large numbers of items or large amounts of detailed text. As the expected museum audience could be quite broad, including a wide assortment of socioeconomic classes and ages, the average visitor may not care for detailed information suitable for scholars (Carliner, 2003). Thematic organization of information into easily readable sections helps communicate the intended material, particularly in cases when the visitor has limited background knowledge of the material. One approach is to layer the text and signs as a way to engage with different interest levels. OSV immerses visitors in their 1800s setting by avoiding excessive signage and all signs of modern technology, and the actor-interpreters replace conventional text learning.
Beyond content depth, George and Maryan-George stress the importance of the choice of items that museums present to visitors, especially those the visitor can interact with. Guests are intrigued by the explanation and showcasing of authentic objects, for which there is no compelling substitute (Bell, interview with CNN, 2013). Many successful museums put their visitors in contact with tangible objects; a modern plastic copy of a historic artifact serves the purpose of preserving an irreplaceable object while letting visitors experience. To present old artifacts, a museum requires extensive research of each artifact in its exhibits, from its authenticity to its origin to its significance (George & Maryan-George, 2012). OSV adheres to every possible detail of its living history when it can; the trees, livestock, plants, fence material, and more specifics are exactly tailored to match their target timeframe of a 1800s rural New England town (R. Simmons, personal communication, February 9, 2018). However, in the more conventional museum setup at the front, OSV presents a mixture of artificial and authentic items, including artificial replicas of several food items, period cloth, and pottery made with antiquated processes. The AFS has already recognized the importance of authenticity in its existing setups that use authentic grain and milk, produced on campus, in production demos of bread and cheese, respectively.

Figure 29: Pottery at the Archaeological Museum of Thessaloniki
Various theories of design are used to develop interactive displays and exhibits. One theory describes four design principles to consider, including narratives, participation, curiosity, and challenge, as outlined in Table 2 (Skydsgaard, Andersen, & King, 2016). These design principles are abstract and relate more to the philosophy and intended emotional response to the exhibit, rather than physical concerns about organization of displays or content within exhibits. With the exception of “challenge,” an agricultural museum can adopt these principles for exhibit design through historical narratives, participatory activities, and curiosity-inspiring demonstrations. OSV, for example, adopts the participative exhibit design throughout its museum using its actor-interpreters. The actor-interpreters engage the audience in conversation, educating visitors on the relevant content in a unique discussion style optimized for the specific visitor’s interests.

Table 2: Abstract Design Principles of Museum Exhibits (Skydsgaard et al., 2016)

<table>
<thead>
<tr>
<th>Principle</th>
<th>Narrative</th>
<th>Participation</th>
<th>Curiosity</th>
<th>Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanation</td>
<td>Personal or professional stories are provided relating to the time or place of the subject matter.</td>
<td>Visitors are asked to participate in exhibits, interacting with each other or with the exhibition in a more individual manner that appreciates the diversity of visitors.</td>
<td>The visitor is asked to explain an unusual pattern or phenomenon that occurs in the exhibit subject matter. The phenomenon is then explained for the visitor throughout the rest of the exhibit.</td>
<td>The exhibit focuses on presenting shocking or disturbing material to the visitor, challenging them to open their minds.</td>
</tr>
<tr>
<td>Purpose</td>
<td>The visitor relates to the personal experiences described in personal narratives, and appreciates the insight of experts in professional narratives.</td>
<td>Visitors learn better if they discuss the material with each other as they are learning.</td>
<td>The visitor feels compelled to follow their curiosity and explore the exhibit.</td>
<td>The unexpected subject matter startles the visitor, and draws interest to the exhibit from the shock factor.</td>
</tr>
</tbody>
</table>
A plan for an open-air museum at the AFS would benefit from considering the design concerns discussed, with input from existing museum and exhibit designs in Greece. The long history of the AFS in agricultural technology and sustainability should be taken into account and incorporated into the museum content. The existing educational facilities and offerings at the AFS could be integrated into the design and interpretation. The layout of the school, as well as future layout changes, must be considered when offering the museum to visitors unfamiliar with the campus. Exhibits could follow the AFS’ principles of learning through practice by offering authentic, interactive experiences that educate visitors fully on agricultural topics.
Methods
The AFS is interested in providing visitors with an engaging experience about the long history of the AFS, its role as an innovator in Greek farming practices, and the continuing importance of agriculture in Greek life. This project aimed to provide the AFS with information to enable planning of a school-run open-air agricultural museum to showcase its history, its involvement in the development of farm technology in Greece, and its current agro-food processing facilities. Objectives to reach this goal were:

1. Determine the guiding principles and program elements of a museum at the AFS.
2. Characterize the target audience of the museum to understand interest level in different possible topics for exhibits.
3. Identify strategies used by Greek museums to attract and engage visitors.
4. Develop a preliminary layout and exhibit prototype.
5. Foster discussion with AFS officials and museum experts about opportunities for an AFS museum.

Our mixed-method approach is summarized in Figure 31. It includes semi-structured interviews, a free-listing exercise, archival research, participation/observation, questionnaires, and visits to Greek museums. We discuss each objective and the associated methods in more detail below.
We conducted semi-structured interviews with AFS officials (Table 3), initially relying on our sponsor to identify and put us in contact with key informants. The AFS officials are involved in farm operations, school administration, and teaching. The interviews with the operational staff focused on current farming operations and campus layout changes. In our interviews with the AFS administrative staff, we gained insight on the unique traits of the AFS, important historical topics to emphasize, and ideas for improving the AFS’ current visitor offerings. With the teaching faculty, we explored topics related to the museum’s purpose and program elements. A list of our interview questions for operational staff, administrative staff, and teaching faculty can be found in Appendices A, B, and C, respectively. The list of interviewees, with their associated job category and job title, is provided in Table 3.

<table>
<thead>
<tr>
<th>Interviewee Name</th>
<th>Job Role</th>
<th>Job Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antonis Petras</td>
<td>Operational</td>
<td>Director of Technical Works and Environment Office</td>
</tr>
<tr>
<td>Dr. Statos Souglis</td>
<td>Operational</td>
<td>Head Veterinarian</td>
</tr>
<tr>
<td>Irini Stamatiou</td>
<td>Operational</td>
<td>Educational Programs Director</td>
</tr>
<tr>
<td>Thanos Bizibroulos</td>
<td>Operational</td>
<td>Former Tour Guide</td>
</tr>
<tr>
<td>Elli Konstantinou</td>
<td>Administrative</td>
<td>Director of Admissions</td>
</tr>
<tr>
<td>Gregori Sognaris</td>
<td>Administrative</td>
<td>Recruitment Officer</td>
</tr>
<tr>
<td>Hercules Mousiades</td>
<td>Administrative</td>
<td>Vice President</td>
</tr>
<tr>
<td>Zoe Vergos</td>
<td>Administrative</td>
<td>Public Relations and Development Office</td>
</tr>
<tr>
<td>Dr. Evangelos Vergos</td>
<td>Administrative</td>
<td>Director, School of Professional Education</td>
</tr>
<tr>
<td>David Willis</td>
<td>Administrative</td>
<td>Associate Director (1978-2004)</td>
</tr>
<tr>
<td>Dr. Kostas Rotsios</td>
<td>Administrative</td>
<td>Dean of Undergraduate Studies</td>
</tr>
<tr>
<td>Dr. Abrahaim Mavridis</td>
<td>Teaching faculty</td>
<td>Adjunct Professor</td>
</tr>
<tr>
<td>Dr. Christos Vasilikiotis</td>
<td>Teaching faculty</td>
<td>Professor</td>
</tr>
<tr>
<td>Stella Karakosta</td>
<td>Teaching faculty</td>
<td>Pre-K and Kindergarten Teacher</td>
</tr>
<tr>
<td>Dimitrius Chatzikostas</td>
<td>Teaching faculty</td>
<td>Elementary School Teacher</td>
</tr>
<tr>
<td>Irini Tekidou</td>
<td>Teaching faculty</td>
<td>Elementary School Teacher</td>
</tr>
<tr>
<td>Christine Willis</td>
<td>-</td>
<td>(retired)</td>
</tr>
</tbody>
</table>

Table 3: List of Interviewees by Job Role
We calculated average and median years of experience at the AFS among our interviewees to investigate the diversity of respondents in years of experience at the AFS (Table 4). The large standard deviation in number of years in the operational, administrative, and total columns indicate a diverse association level with the AFS, and thus a diverse collection of perspectives on the museum concept, on the basis of length of tenure at the AFS. Another objective of obtaining a diverse respondent bank was to ensure inclusion of perspectives from people who had been at the AFS the longest. Our interviewees have been associated with the AFS between 1 and 42 years; the wide range indicated inherent diversity of perspectives by age as well. Although males dominated our interviewee pool, we gathered five female perspectives out of 17 interviewees. Another indication of diversity in our interview responses is by occupation; only two interviewees share a job title.

In each interview, we asked for ideas for the museum content and purpose, concerns about the implementation of a museum on campus, and characteristics that drew the interviewee to work for the AFS.

Table 4: Experience Analysis of Interviews with AFS Officials

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Operational</th>
<th>Administrative</th>
<th>Teaching Faculty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Years at the AFS</td>
<td>15 ± 8.5</td>
<td>18 ± 17.2</td>
<td>3.4 ± 2.3</td>
<td>15.7 ± 18.2</td>
</tr>
<tr>
<td>(with standard deviation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median Years at the AFS</td>
<td>14</td>
<td>12</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Maximum Years at the AFS</td>
<td>24</td>
<td>42</td>
<td>6</td>
<td>42</td>
</tr>
<tr>
<td>Minimum Years at the AFS</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Number of Respondents</td>
<td>4</td>
<td>7</td>
<td>5</td>
<td>16</td>
</tr>
</tbody>
</table>
Free-listing

We engaged in a modified free-listing exercise with each interviewee. Free-listing is an anthropological research technique that collects responses given by an interview subject when prompted by an open-ended list question (Gravlee, 2002). The prompt was:

What are three to five words that you would use to describe the American Farm School?

While the staff of the AFS would sometimes answer with more than five words or phrases, we compiled the key words into a word cloud that offers the general feeling of the staff toward the AFS. If the staff used phrases instead of words, we eliminated prepositions from the phrases and used the remaining words. If different forms of the same root word were used by different respondents, such as “innovative” and “innovation,” we picked one term for use in the word cloud. The term “experiential learning” was condensed to “experiential” for the word cloud, because its length and size limited word cloud design. No more than ten words were entered into the word cloud from any one respondent.

We used ANTHROPAC V 11 to calculate saliency scores for each word based on the method of Gravlee (2002) to investigate the free-listing exercise from frequency- and rank-based perspectives. Saliency combines the number of free-listing subjects that mention a response with the rank, a measure of early in the list the response appears for each subject (Gravlee, 2002; Schrauf & Sanchez, 2008; Sutrop, 2001). Differences in saliency scores between genders, job roles, and age groups were examined and interpreted.
Objective 2: Characterize the target audience

Archival research

The first audience segment that we considered was visiting school groups. As noted in our background chapter, the AFS attracts 15,000 visitors per year from all over Greece, mostly school groups touring the campus. The AFS also runs events, such as May Day, that attract thousands of visitors in a single day. The Educational Programs Office at the AFS provided us with a detailed breakdown of visiting students from the 2016-2017 school year by age and program, as well as yearly visitor numbers since the 2006-2007 school year. The information specified the number of nursery, elementary, and high schools attending each program. Although we did not acquire a breakdown by grade, the breakdown by school type was sufficient for audience analysis purposes. We wanted to be able to estimate the age range, and thus the expected reading level, of students for signage text and interactive activity design.
Participation-observation

We observed and took part in 18 AFS tours that are currently offered for visiting school groups. This method is called participant observation; it allows researchers to understand and collect information about the activities of a group of people by joining the group in their activities. This allows the researchers to participate and observe how the group interacts with one another and with the world around them (Kawulich, 2005). We participated in a six out of the seven possible tours to ensure that we experienced the current programs offered at the AFS. The tours covered the various areas of the farm including the dairy and wheat sections, among others. These tours mostly involved observation of educational content provided by tour guides and signage, connections to AFS history provided by tour guides, and some interactive demos. The tour guides, students, and teachers spoke in Greek throughout the tours, so our analysis of specific content discussed on the tours was limited.

Figure 34: Students on the AFS wheat tour program
Interviews/Questionnaires

To understand the experience of students who come to the AFS as part of a tour group, we engaged with the visiting students and accompanying teachers while they were on the AFS grounds. While observing the current tours, we noted the number of students and the ages of the students and asked the tour guide for each school’s location in the region to find out whether the students were from an urban or rural environment.

In addition, we wanted to know the teachers’ reasoning for coming to the AFS, along with motivating factors that drive them to visit other museums. We also wanted to assess the relevance of agriculture to the school’s curriculum while gauging the familiarity of the students with farming and food production. We gathered this information using a short, structured questionnaire that we administered to 10 teachers. Surveys and questionnaires are helpful and popular in gathering this information from a wide audience, composing 95% of public opinion studies published in major journals in 1994-95 (Saris & Gallhofer, 2014). While the students were taking a break between early morning and late morning sessions, we distributed a questionnaire to the teachers in the group. If the teacher was fluent in English to answer the questions verbally, we probed deeper on certain questions. The questionnaire was translated into Greek by our sponsor to obtain responses from teachers unfamiliar with English, and both languages were included on the distributed version. Responses in Greek were translated into English by our sponsor. The English version of the questionnaire is provided in Appendix D.
To evaluate the interest level of Thessaloniki residents in visiting an agricultural museum at the AFS, we conducted an intercept survey of residents leaving the Archaeological Museum of Thessaloniki (AMTh). Intercept surveys are short interviews that gather responses in person, in public, while the interviewee is entering or leaving a location (Robinson Research, 2018). We completed interviews with 12 persons between 10:00 AM and 1:30 PM on a Wednesday, in the front courtyard of the AMTh. Our questions focused on interest in museums, specific interesting exhibits at the AMTh, interest in an agricultural museum at the AFS, and an admission price for the agricultural museum. A complete list of our interview questions can be found in Appendix E. Before conducting these interviews, we obtained permission from the museum, providing them with a list of questions we would ask as well as the overall research purpose of our project. We also obtained permission from our sponsor and Mrs. Elli Konstantinou, a public relations official at the AFS, to conduct these interviews with the public.

These responses from our intercept survey informed the design of a questionnaire about pre-existing knowledge of the AFS' museum content and interest in a museum at the AFS. The questionnaire was targeted at the parents of current AFS pre-K to elementary age students and was posted on the AFS Facebook page. We did not have sufficient time to administer this questionnaire over the course of our project, but we have included it as a future step of the museum project. Our questionnaire is provided in Appendix F.
Objective 3: Identify strategies used by Greek museums to attract and engage visitors

To help us realize the challenges and opportunities when launching a new museum in Greece, we interviewed officials from Greek museums that we contacted through officials at the AFS. Our questions for these museum officials are provided in Appendix G. The museums we visited were the Water Supply Museum of Thessaloniki (WSMTh), the Casts Museum, the Archaeological Museum of Thessaloniki (AMTh), the Thessaloniki Science Center and Technology Museum (Noesis), Ktima Gerovassiliou, the Palace of Knossos, and the Archaeological Museum of Heraklion (AMH). In the case of the first three museums, we were able to interview employees through our contacts at the AFS. We investigated topics such as the operation of museums, identifying target audiences, and designing exhibitions. In the case of the last four museums, we noted interactive exhibit portions that engaged other senses, effective interpretation methods for content in exhibits, and the status of other visitors present through participation/observation studies.
Developing exhibit locations on campus and a site design for the museum was complicated by the growth of the campus in recent years, as well as anticipated future expansion. The AFS campus changes frequently; since 2010, the AFS has added a kindergarten, primary school, general high school, and are currently building a middle school. In our interview with Antonis Petras we focused on questions related to past developments and future planning, as listed in Appendix A. We also asked about possible layout changes to the campus in our interviews with Hercules Mousiades, Vice President of the AFS, and Dr. Kostas Rotsios, Undergraduate Dean of Perrotis College, as listed in Appendix B.

To inform our design of a prototype layout of the museum with various paths, we acquired a recent satellite map of the campus as well as a copy of a study done in 2015 by students from Arizona State University for path designs at the AFS. Ms. Stella Karakosta, an AFS kindergarten teacher, provided a map that highlighted parts of campus where she takes her classes for hands-on learning activities and interaction with the farm. We received a cartoon map of May Day activities from Anna Papakonstantinou, and a plain cartoon map of the campus from Athina Peristeropoulou, Associate Director of Communications. After obtaining all the different maps, we used the information gathered from tour group observations, background research, and interviews to indicate important content areas on campus. To help ground our views in the realities of campus planning and protocols, we interviewed Antonis Petras, who discussed traffic issues, student safety issues, and farm operations. With these limitations and concerns in mind, we created exhibition areas on campus and a path to connect them.
We developed a prototype exhibit concept for the museum, focusing on the farm’s dairy. The dairy section involves numerous areas of the AFS, and features the AFS’ most popular and historically significant product: bottled pasteurized milk. The content of the dairy exhibit starts with harvesting of crops to feed the cows and concludes with the bottling and sale of the milk in supermarkets. We used information from our participation on AFS tours, visits to Greek museums, a visit to OSV, and our interviews to design the exhibit. Interviews with Dr. Stratos Souglis, the Head Veterinarian and Head of Dairy at the AFS, and Dr. Vergos helped decide the content that we would include in our exhibit. We presented rough drafts of our exhibit signage to Mrs. Peristeropoulou for evaluation of our design and input on possible color schemes. Mrs. Peristeropoulou also provided us with samples of her graphic design work for the AFS that helped us imagine new layouts for our signage. The exhibit covered the entire process involved in the production of the AFS’ milk, (Figure 39).

We compiled the ideas for specific interactive exhibit concepts that have emerged from our discussions with our sponsor and interviews with AFS officials. For the dairy exhibits, we developed demonstrations, along with a narrative of the process incorporating aspects of the AFS’s history, that we expect will appeal to and engage our target audience. We also developed a foundational dairy video that displays the milking and milk processing procedures, informed by a video presentation we observed on our visit to Ktima Gerovassiliou museum. The video content was also informed from interviews with Dr. Souglis and Dr. Vergos, with visual design input from Mrs. Peristopoulou.
The final step of our project involved presenting our findings to AFS officials and museum experts to generate discussion about the feasibility and mission of an open-air museum at the AFS. Participants of the interactive presentation, listed in Table 5, were invited by Dr. Vergos to include high-ranking AFS officials in a diverse set of occupations, so as to capture multiple viewpoints among decision-makers on campus.

Table 5: Interactive Presentation Participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Occupation</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antonis Perous</td>
<td>Director of Technical Works and Environment Office, AFS</td>
<td>60</td>
</tr>
<tr>
<td>Perikle Kanelis</td>
<td>President, AFS</td>
<td>60</td>
</tr>
<tr>
<td>Eva Kanelis</td>
<td>Dean of Student Services, Paezios College</td>
<td>60</td>
</tr>
<tr>
<td>Dr. Konstantinos Yatmos</td>
<td>Undergraduate Dean, Paezios College</td>
<td>78</td>
</tr>
<tr>
<td>Dr. Athanasios Tz fashioned</td>
<td>Graduate Dean, Paezios College</td>
<td>60</td>
</tr>
<tr>
<td>Sofia Roh Mols (through Skyp)</td>
<td>Museum Expert, BHM</td>
<td>78</td>
</tr>
<tr>
<td>Daphne Giannakos (through Skyp)</td>
<td>Museum Expert, BHM</td>
<td>78</td>
</tr>
<tr>
<td>Elisa Karatzoglou</td>
<td>Study Abroad Coordinator, AFS</td>
<td>78</td>
</tr>
<tr>
<td>Helen Marvakid</td>
<td>Study Abroad Office, AFS</td>
<td>78</td>
</tr>
<tr>
<td>Osama Polli</td>
<td>Archaeologist, ANITH</td>
<td>80</td>
</tr>
<tr>
<td>Iria Timanis</td>
<td>Director of Educational Programs, AFS</td>
<td>78</td>
</tr>
<tr>
<td>Despina Saplidou</td>
<td>Educational Programs Office, AFS</td>
<td>80</td>
</tr>
<tr>
<td>Thanos Batsioudas</td>
<td>Former Tour Guide, AFS</td>
<td>80</td>
</tr>
<tr>
<td>Dr. Athanasios Gasiou</td>
<td>Head of MGMT System, Paezios College</td>
<td>60</td>
</tr>
<tr>
<td>Dr. Tryphon Adamios</td>
<td>Head of Food Technology, Paezios College</td>
<td>60</td>
</tr>
<tr>
<td>Sotiris Kanakos</td>
<td>Interim Head Teacher of Kindergarten, AFS</td>
<td>78</td>
</tr>
<tr>
<td>Sofi Bouras</td>
<td>Elementary Teacher, AFS</td>
<td>80</td>
</tr>
<tr>
<td>Ioanna Tzortzki</td>
<td>Kindergarten Teacher, AFS</td>
<td>80</td>
</tr>
<tr>
<td>Dr. Stavros Sougia</td>
<td>Head Veterinary and Head of Dairy, AFS</td>
<td>80</td>
</tr>
<tr>
<td>Stefan Vassilakis</td>
<td>Head of Poultry, AFS</td>
<td>80</td>
</tr>
<tr>
<td>Vassilis Goutiskis</td>
<td>Head of Food Production, AFS</td>
<td>78</td>
</tr>
<tr>
<td>Apostolis Voutsikatis</td>
<td>Professor of Agricultural Technology, AFS</td>
<td>80</td>
</tr>
<tr>
<td>Pana Petrou</td>
<td>General High School Principal, AFS</td>
<td>80</td>
</tr>
<tr>
<td>Dimitr Harvalis</td>
<td>Vocational High School Principal, AFS</td>
<td>78</td>
</tr>
<tr>
<td>Vassilis Saris</td>
<td>Agricultural Vocational High School, AFS</td>
<td>78</td>
</tr>
<tr>
<td>Dr. Evangelos Vergos</td>
<td>Dean of School of Professional Education, AFS</td>
<td>78</td>
</tr>
</tbody>
</table>

Objective 5: Foster discussion with AFS officials and museum experts about opportunities for an AFS museum
Although our presentation was not a workshop setting, we considered the recommendations of Bell et al. (2016) in their workshop planning article to make the presentation interactive and effective. Additionally, we decided to break our presentation into sections, separated by sessions where we would poll audience viewpoints and opinions using Poll Everywhere (pollev.com). We also gathered feedback on our prototype layout and exhibit design at the end of our presentation. For each of the steps presented in that article:

Define the Goals: We defined the goal of the interactive presentation as presenting information from our findings and gathering ideas and opinions from the assembled AFS staff. Since a bestselling management and leadership author’s blog post on workshop design recommended breaks every two hours, we set a time goal for the interactive presentation of about one hour, but the involvement of the interactive polls extended the time to two hours (Berkun, 2013). This duration provided enough time to discuss the content sufficiently without requiring break time or posing too much of a time commitment for the busy AFS staff.

Decide Who Will Attend: We did not need to choose many attendees, as Dr. Vergos had chosen most of them for us. We chose to invite Eleni Kantylzogliou and Helen Mavroudi, as they expressed interest in attending our final presentation in their roles in the Study Abroad office.

Choose the Right Location: We chose our location, also at the recommendation of our sponsor, as the Cincinnati Hall conference room on the AFS campus. The conference room had enough space for the 23 attendees, ourselves, and our advisors. It also included accommodations for technology, as we had chosen to use a polling website to collect feedback and opinions.
Create an Agenda: We divided our findings into discussion points that would present decision options to workshop attendees. After our introduction we presented our relevant findings on the major factors governing each discussion point, along with the possible decisions we had identified. We welcomed additional decision options that we had not considered as well. We focused on 5 discussion points for acquiring opinions from our attendees (Figure 41).

Develop a Follow-up Plan: Bell et al. (2016) define a follow-up plan as a written summary sent to all attendees following the workshop. Our follow-up plan consisted of the delivery of our revised final report, which contained a summary of results from the interactive portions of the presentation.

During the Interactive Presentation - Getting People Involved: Due to the large number of attendees, we decided to have let the attendees sit freely. However, attendees were asked to pose questions throughout the presentation and participate in electronic polls on their laptops or smartphones.
Findings
What do AFS officials think of the museum concept?

Officials at the AFS strongly support the concept of an open-air museum on the AFS campus.

Many of our interviewees were initially unfamiliar with the concept of an open-air museum but, after discussing the concept and examples of other open-air museums, they were enthusiastic about such a museum at the AFS. Our 16 interviews with AFS officials in a variety of occupations and disciplines contained many positive responses to our project idea. We encountered encouragement for the design of a new stage of development for the campus, as an expansion of the AFS’ mission statement. An administrator, Dr. Kostas Rotsios, advocated for the museum from a historical and philosophical perspective, since “every organization, in order to develop, needs to remember its philosophy and mission statement.” Dr. Rotsios viewed the museum as an extension of the AFS’ mission.

“The mission of the institution is to educate youth and adults to become professionally accomplished in the latest aspects of agriculture, ecology and the life sciences, and to make Greece and its neighbors a better place.”
The museum, then, would serve as another adaption to existing facilities on campus and the existing mission of the school. The AFS is regularly adapting, especially in recent years. The school has recently adapted to incorporate a larger student body with multiple age groups. Hercules Mousiades, AFS vice president, conveyed his view of the start of a new stage of development of the AFS that occurred upon the appointment of the current president, Dr. Panos Kanellis. Under Dr. Kanellis’ direction, a spree of construction and building repurposing allowed the AFS to offer the kindergarten, elementary school, non-vocational high school, and eventually a middle school, in addition to its vocational high school and Perrotis College. Therefore, a museum on the AFS can add to the growth of the school by promoting AFS programs. This change in AFS policy to develop a more noticeable profile was also reflected in our discussions with Mr. Petras and Dr. Vergos. The open-air museum, then, would reflect Dr. Kanellis’ new agenda as an extension of the foundational principles of the school.
What do people think of the AFS?
Figure 45: Word cloud of freecistng responses
People associate the AFS with innovation, experiential learning, and education.

The results of our free-listing exercise show that people generally associate the AFS with "innovation," "experiential" learning, and "education." The frequency of words is displayed in a word cloud (Figure 45). Salience analysis of responses by gender was limited by an insufficient number of female respondents. When analyzing the differences in responses between job roles, salience analysis (Table 6) identified significant words that appeared less frequently in the word cloud. Teaching faculty associated the AFS more strongly with "nature" than any of the three most frequent words in the word cloud. Three of the five teaching faculty surveyed teach students at the elementary level and younger; the younger students' curriculum is designed to connect the students with nature through outdoor activities. The teachers discuss "nature" every day and make it a strong part of their curriculum, hence the connection. The museum could increase the prevalence of experiential activities and introduce younger students to the AFS' agricultural innovations, if the museum's purpose is rooted in associating the AFS more with its foundational principle of "experiential" learning.

Table 6: Most salient free-listing terms by job role.

<table>
<thead>
<tr>
<th>Job Role</th>
<th>Operation</th>
<th>Administration</th>
<th>Teaching Faculty</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Term</td>
<td>Innovation</td>
<td>Experiential Learning</td>
<td>Nature</td>
<td>Innovation</td>
</tr>
<tr>
<td>(most salient)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Term</td>
<td>Education</td>
<td>Innovation</td>
<td>Education</td>
<td>Education</td>
</tr>
<tr>
<td>3rd Term</td>
<td>Tradition</td>
<td>Giving</td>
<td>Innovation</td>
<td>Experiential Learning</td>
</tr>
</tbody>
</table>
For Dr. Rotios, the AFS is special because of its unique ability to combine two very different cultures, American and Greek. He claims that the AFS has “the ability to take only the good elements from both [cultures], for the benefit of the people of this region of the world. So this is what makes the AFS special.” People who have been at the AFS for several decades, such as David Willis, a former Associate Director for 25 years, and his wife, Christine Willis, the daughter of the third president of the AFS, noted that it was the environment inside of the AFS and the dedication of the employees that made the AFS special. Some interviewees who have been at the AFS for a much shorter time than the Willises considered the AFS to be special for its effect on the agro-food sector in Greece.

Dr. Vasilikiotis, a Perrotis College professor for four years, described the link between the farm and the school as a factor that makes the AFS so distinguished. He explained the AFS’ embodiment as “the tie of being a real productive farm and educational system that are together.” Elli Konstantinou, AFS Director of Admissions, did not attend the AFS as a student, but stated that the AFS was part of her childhood through the AFS’ products, considered high quality by Thessaloniki residents. When speaking with people outside of the AFS that work at the museums, their attitudes towards the AFS were all positive. They echoed the thoughts of Mrs. Konstantinou, who stated that the AFS’ products were known as high quality even today.
What do AFS officials want to highlight in the museum?

- Innovations
- History
- Agricultural products

Figure 47: Topics to highlight in the museum
What do AFS officials want to highlight in the museum?

Innovative technology that the AFS brought to Greece from the U.S. should be exhibited

The interviewees stressed heavily that the historical innovations of the AFS and the new farming technology that AFS brought to Greece from America was necessary to be exhibited in the museum. Mr. Mousiades stated his thoughts that the museum should “[focus] on the history of agriculture and the evolution of agriculture in Greece. And, map that with the evolution of the American Farm School. So those would be the two, sort of, parallels from 1904 to [today].” This attitude was reflected in our final presentation as well. A popular poll response when asked about content of the museum was a "timeline of the history of events, technological advances, before and after pictures/objects, and factual impact on local community throughout the years." This response gained the most approval through upvotes than any other response out of all the PolLEV questions, solidifying the importance of historically innovative technology in the museum.

Interviewees, including Mrs. Konstantinou, Mr. Mousiades, Mr. Willis, and Dr. Vergos, recommended that the museum teach the history of the AFS through the surviving historically significant buildings on campus. Historical buildings on campus include Haskell Cottage, the church, James Hall, and Princeton Hall (Appendix H, #1-4). With the exception of the church, all of these buildings are in constant use by the AFS for various purposes. Haskell Cottage, “the most historical building on the campus [...] as the first building that was constructed” according to Mr. Willis, houses the interactive wheat lab and farm implements that are used on the wheat tour, as well as the Office of Educational Programs. Princeton Hall contains numerous administrational offices and Perrotis Library. James Hall provides classrooms and offices for the high school. The church was used for weddings and services in the past, when the AFS had a priest living on campus; however, it has remained unused for the past few years. The history of Haskell Cottage (Figure 48) is one of longevity, dating back to the founding of the school. Princeton Hall and James Hall are impressive buildings on their own, and they form the main center of the current AFS campus. The church’s significance is related to its construction, as each member of the graduating class of 1954 brought stones from their village for its construction.
Other topics for highlighting in the museum include the farm and AFS products. Specific areas of the farm mentioned for highlighting in our interviews included dairy, poultry, olives, wine/grapes, and herbs. The innovative production of milk at the AFS can be a fond childhood memory for people such as Mr. Vasilikiotis, who remembers “having some amazing chocolate milk, cocoa milk. I still remember it as a kid, drinking that because [the AFS] was the first company to introduce that.”

The AFS has established an ability to produce only the highest quality products to the point this is one of the two ways that people recognize the school.

For the olives, the AFS doesn’t produce a large enough quantity to sell the olive oil publically, but only give out small samples. This gift is considered an honor by the recipient because of how little is produced by the AFS (Z. Vergos, personal communication, 19 March, 2018). In this case, the museum can highlight a product that the AFS does not market due to its small production scale.

Agricultural products should be exhibited
How could the content of the museum reflect the unique features and mission of the AFS?

Experiential Learning

Innovation

Figure 26: Landscape of the AFS campus
The AFS has been based on experiential learning since its founding by Dr. John Henry House, who sought to educate the whole individual through a ‘learning by doing’ approach. To incorporate experiential learning, we considered possibilities for interactive exhibit designs that would invite visitors to experience life at the AFS for themselves.

The AFS has considered adding interactive exhibits and demonstrations to its campus in the past, but they were either dismissed in developmental stages or were removed. Elli Konstantinou, AFS Director of Admissions, mentioned a proposition for a bicycle tour with interactive “stations” around campus; this project was never continued for unknown reasons. Mr. David Willis, former AFS assistant director, described a previous museum that existed on the AFS campus, in Princeton Hall. According to Mr. Willis, the previous museum was the brainchild of the third AFS president, Bruce Lansdale; the previous museum showcased various technological developments through side-by-side comparisons of technology through the years. Industries highlighted were weaving looms, typewriters and computers, and farming technology. The museum was removed to make room for the renovation of the school library and additional office space, with some farming technology equipment being repurposed for the wheat lab exhibit for the visiting school groups (Figure 51).

The AFS has many projects in development focusing on using technology to guide and educate visitors. Mr. Mousiades mentioned the AFS is considering developing an interactive map that would use touch screens in buildings around campus to guide visitors around campus. Another technology the AFS is considering is an augmented reality application or game, according to Mrs. Konstantinou. These technologies are cutting-edge, which means that while they are effective engagement strategies for visitors, they are also inherently expensive. While past and current efforts to add interactive exhibits to the campus have not reached fruition, AFS officials recognize their value.
The AFS’ many innovations should be included in the museum to showcase its history

A museum at the AFS should exhibit the numerous innovations developed at the AFS, as well as those that were brought to Greece by American supporters of the school and the Marshall Plan. To convey the history of the AFS in bringing new agricultural technologies to Greece, the interpretation must match the nuanced relationship between the United States and Greece that the AFS experienced and represented. Dr. Rotsios emphasized the importance of capturing the American influence on Greece through the school’s technological imports, including “all of the equipment, all the technology, even the simple things, the philosophy of doing things, [and] the [...] holistic approach.”

The museum at the AFS would need to capture the complicated balance of introducing new technology from the United States to Greek farms while teaching students older methods appropriate to local agricultural practices at the time. According to Mr. Willis, the AFS was founded at a time when Greek agricultural practices were “very old-fashioned, literally still in biblical times.” The lack of large-scale technologies, such as a reliance on hand tools was due to the family-oriented breakdown of farm area in Greece. In the past and still today, Greek farms are generally family-sized, smaller than the rest of the European Union or the United States (Table 7). Adopting these novel technologies represented a financial burden and substantial risk to Greek farmers, due to the small size.

<table>
<thead>
<tr>
<th>Farm Location</th>
<th>Average Farm Size (hectares)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greece</td>
<td>4.8 (Hellenic Statistical Authority, 2010)</td>
</tr>
<tr>
<td>European Union</td>
<td>14.4 (Eurostat, 2016)</td>
</tr>
<tr>
<td>United States</td>
<td>172.4 (Statista, 2018)</td>
</tr>
</tbody>
</table>

Table 7: Average Farm Sizes in 2010 by Location
Despite the importance of the AFS’ role in introducing novel farming technology to Greece, there is currently no signage highlighting the farm machinery on the AFS campus. The existing wheat tour program for school groups includes a stop at the barn where some old machinery is stored (Figure 53). During the tour, the guide provided context for a new combination harvester model, though our understanding was limited; the lecture was entirely in Greek.

Figure 53: Map of the AFS campus, with locations of the first combine harvester in Greece (1) and the other farm machinery currently highlighted by tours (2) indicated.
Another aspect of the AFS is the importance of student projects. One project that was mentioned by multiple interviewees is the dried feta, a product produced by a research project at Perrotis College. Mr. Bizbiroulas described the product as a combination of innovation, education, and applied research, three terms highlighted by our informal free-listing. In Mr. Bizbiroulas’ opinion, the dried feta highlights the "research that is being done [at Perrotis College]. You have the cheese-making class, but also you have Perrotis [College] coming and telling you, we have dehydrated the cheese. So you can transfer it easier, less weight, longer set of life and so on. And by adding some water for a few days, you can have back your cheese, as it was, or as a different kind of cheese. So you also have innovation."
However, the AFS is not just a research institution that develops these products. As mentioned by many interviewees, the AFS is more than a school, it is also a farm that produces products for sale in supermarkets. The AFS’ most popular and successful product is its milk. Before switching to the plastic bottle, the glass AFS milk bottles were considered a “cult object” of the Thessaloniki area, or a "symbol of the city," according to Mrs. Konstantinou. The AFS produces over 1.3 million liters of milk per year, according to the AFS website (2018), which details a herd of 125 cows, producing 35 liters of milk a day over a 305-day milking period. Enough milk is produced to sell as an end product in the campus store and in supermarkets. The campus store is run by AFS students, so the students learn about marketing in the course of their education. This marketing experience adds to the entrepreneurship spirit gained by AFS students, because they observe the end phase of the entrepreneurship model: bringing a product to market. This concept of entrepreneurship represents a possible focus of some exhibits in the museum.

The previous innovations have focused on new technologies and agricultural techniques. However, an interesting point discussed in the interactive presentation took a different approach. Ms. Karakosta, representing the kindergarten teachers, shared that the innovations of the AFS go beyond physical inventions. She considers the teaching style and philosophy as a unique innovation. The holistic and hands-on teaching approach at the AFS, according to Ms. Karakosta, is unrivaled in Greece, and other schools are eager to imitate.
Who is the target audience?
During our interviews, 100% of the interviewees thought the visiting school groups should be the primary audience for the museum. One reason is that this audience is already frequently on the AFS campus. As Mr. Mousiades notes, "a really significant outreach program to schools from elementary through high school, all over the country" exists at the AFS. Dr. Rotsios agrees with Mr. Mousiades' opinion that "main target audience would be the 10,000 young people that visit the AFS every year. So your audience is them. This is the age to change the people's mentality and philosophy. So I would go mostly for young people."

The number of students visiting the AFS on field trip programs has increased from 7,000 in 2005-2006 to 16,400 in 2016-2017, a 134% increase from when the school started offering formalized educational tour programs in 2004 (Figure 17), when Irini Stamatiou joined the AFS staff as Head of Educational Programs. Mrs. Stamatiou attributes the attendance increase over time to the same schools returning year after year, due to a 90% satisfaction rate, as measured by teacher evaluations her office distributes. When we interviewed teachers that visited the campus with their students, seven of the eleven groups (64%) were visiting for the first time, indicating that the AFS is succeeding in marketing their programs to new schools. Two of the groups were on their second visit, indicating that the school was satisfied with the AFS programs on their first visit. One group even returns to the AFS every year.
Figure 57: Total visitor numbers, by school year, since 2005-2006. The 2017-2018 numbers are accurate as of April 10th, 2018.
What are the current educational programs on campus, and who do they target?

A variety of programs attract students from pre-K through high school to the AFS.

The school children tour the campus based on the program the visiting school chooses. A knowledgeable guide teaches the children about the history of the school in addition to the current AFS farming practices and agro-food processes. Included in the trip is an interactive portion, which differs by age and program. Some examples include making cheese on the dairy tour and kneading dough on the wheat tour. An analysis of the field trip visits by program and age (Figure 58) indicates that most of the programs receive visitors from a wide range of student groups, with some exceptions. Notably, the treasure hunt program attracts almost entirely primary school children, and the hens trail is focused on nursery and primary schools.
Figure 59 displays the total number of students that participated on each of the tours in 2016-2017 school year. The dairy tour was the most popular, indicative of the prominence of the AFS milk and dairy products, which is the reason our designs focused on dairy. This age characterization would help inform the design of signage, when continuing the design of the museum.
On participation/observation activities on the educational programs, we identified several areas where a museum would add to the experience of the visiting school children. On the dairy tour, the children observe the milking equipment used on the cows (Figure 60) and experience a hands-on demo of the milking process that uses a glove full of water to represent a cow udder (Figure 61).
However, the children cannot observe the milking process itself, due to the time of day; the children visit in the late morning, while the cows are milked at 3 AM and 3 PM. Milking and milk processing are gaps in children's agricultural knowledge. AFS officials, such as Dr. Stratos Souglis, have observed that children “don’t even know where milk comes from. They start the alphabet from A.” This knowledge gap could be addressed if the students were able to observe the cows being milked in some manner, either physically or on video.
On the existing wheat tour, students plant seeds into pots by hand (Figure 63); they then take the potted plants home to observe the plant growth themselves. However, there is a lot about the evolution of mechanized farm equipment at the AFS that is not discussed and could provide a deeper learning for the students. By adding a historical perspective to this part of the tour, the museum can add to the existing program.
Visiting teachers are interested in experiential learning activities

During the tours, the visiting school children have the opportunity to partake in several different kinds of experiential learning activities. For example, in the dairy tour, children were able to milk a model cow that had water in a glove attached to the fake cow’s udder. On the wheat tour, the students get the chance to plant wheat seeds to take home for them to take care of. From the questionnaire given to the teachers, the majority of them are looking for experiential learning activities for their students and would attend a museum that had these types of exhibits.

Figure 64: Teacher responses concerning students’ interest in experiential learning
What additional audience segments should be targeted for the museum?

Figure 65: Additional target audiences
While visiting students comprise the majority of current visitors, residents from Thessaloniki or other neighboring towns could be a welcome audience to the museum. Mrs. Elli Konstantinou believes the museum can be a means to educate city dwellers and excite them about the agro-food sector. She sees that the open-air museum “will address the people that live in cities and have no idea with farming, it would be much easier to impress them.” Even though there appears to be a lack of agricultural knowledge among the city population, each person has a connection to food, and therefore farming.

Another purpose for involving city residents in an open-air museum at the AFS is to have them connect to the institution and further the AFS educational system, including increased enrollment and popularity of AFS products. Various interviewees noted that while rural residents know of the AFS for its educational programs, urban residents are often only aware of the AFS through its products. Dr. Vergos mentioned the popularity of AFS products in urban areas and the lack of knowledge about the AFS as an educational institute. Opening up the museum to this audience, even on special occasions, can continue to bolster the school’s reputation as a key contributor to Greek agriculture.
In an interview and in our interactive presentation, Ms. Rok-Mella mentioned the importance of two additional target audiences: toddlers and the elderly. According to Ms. Rok-Mella, experiential learning programs for toddlers are very desirable for new parents, and the parents will search for and travel to locations that offer these specialized programs for children. The toddlers are in a stage of "kinesthetic" learning, where interactive exhibits that involve the sense of touch are most desirable; experiential learning activities would provide this connection. She also mentioned that programs for the elderly bring large groups to museums and other locations for tours. Making the museum at the AFS attractive for families will appeal to these older and younger audiences besides the school groups, bringing larger numbers of visitors.

Through the presentation discussions, we also discovered other goals of promoting the AFS. The most popular poll answer addressing this topic was "enhance its public image by creating an open communication channel with the public." This new perspective relates to the idea that the AFS continues to be a connection between Greek agriculture and Greek citizens. Another similar idea that arose was to build the reputation of the school for students beyond Greece, as there are many foreign students that attend the AFS. Additionally, another well-received idea was promoting the AFS’ image through its current role rather than communicating memories or history. The current AFS staff gathered at the interactive presentation were enthusiastic about this idea, because they want to showcase the innovative work that they and the students are involved in.

Figure 67: Ambassador delivers Remarks at the 4th of July celebration at the American Farm School in Thessaloniki (State Department Photo)
How should an open-air museum operate on a campus that contains a working farm and many schools?

Figure 28: Landscape of the APS campus
There was little consensus about when the museum should be opened for outside groups excluding school groups. The four possibilities that arose over the course of our interviews and discussions with our sponsor were:

**Year-round** - the museum is open for all visitors to attend, as long as the school is staffed. Three interviewees recommended this approach; two recommended against it.

**Weekly or Monthly** - the museum is open to all visitors either once a week or one day a month. For the rest of the year, the museum is used to add to the experience of visiting school groups. A weekend was recommended by three of our interviewees. One interviewee disagreed and stated that the museum shouldn't be open on the weekends, but during the week.

**Seasonally** - the museum opens to all visitors on a few specific days in the year, corresponding to the harvesting of specific crops, such that visitors can observe the harvesting in action. For the rest of the year, the museum is used to add to the experience of visiting school groups. Three interviewees recommended this approach.

**Yearly or Special Event** - the museum is only open to all visitors once a year at the most. This falls more into the pattern of special events that the AFS hosts, such as May Day, which involves heavy preparation and advertisement leading up to the event. For the rest of the year, the museum is used to add to the experience of visiting school groups. Two interviewees recommended this approach.
There are safety concerns involving year-round, regular visitation by outside visitors

One vision of the open-air museum was expansive, involving exhibits throughout the AFS campus to explain agro-food processing to all visitors that wanted to learn about the AFS and its projects. For some, this vision of a museum led to safety concerns, since the AFS is both a working educational farm and a set of schools. Zoe Vergos, who works in the Public Relations and Development Office, noted that the schools on campus have legal requirements to ensure the safety of the students. The kindergarten and the primary schools are legally obligated to be fenced in, to create a separation from the rest of the campus. Even though there is a fence, many of our interviewees were still concerned about unsupervised outside visitors roaming around the campus while young students are present.

Besides the elementary and kindergarten students being a safety concern, Mr. Mousiades was concerned for the safety of visitors if left to wander the campus, due to the dangers posed by the working farm. Dr. Vasilkiotis was concerned with increased foot traffic causing issues with the education or work of the AFS.

The expansive approach also necessitates additional staff for security and visitor experience purposes. Visitors would require supervision as they are touring the AFS campus, particularly if they wished to explore parts of the working farm. Additional personnel would be required to supervise these visitors, or at least keep them away from restricted areas. One solution to this issue is to consolidate the visitors into tour groups, led around the campus to various exhibits and facilities. However, this solution still requires additional staff for the tour guides, as the current tour guides are engaged during the entire morning with the visiting school groups. If tour guides are not used, other employees may be needed to run interactive portions of the museum for visitors. Altogether, many difficulties surround opening the campus regularly to outside visitors.
The idea of having the museum open periodically, potential on just weekends, helps address the already noted concerns. The idea was introduced by Mr. Bizbiroulas, who thought, “you could have like an open day, let’s say every Sunday, [because] families would be a good target audience and it would connect with our institution in the sense that families can learn about the school.” If the AFS expanded the idea to an entire day so that it would be easier for visitors to plan a visit preventing the interaction between outside groups and the younger students at the AFS.

The other benefit to having the museum open periodically on the weekends is the foot traffic across the campus. Even though the campus is large, large groups moving throughout campus during the week could disrupt classes. Dr. Vasilikiotis highlighted this concern, “It’s not very easy to have adults walking around all the time. But if it’s on the weekends that wouldn’t interfere with any of our work.” Being open during the weekend periodically prevents the undesirable interaction between the visitors and the young AFS students and the potential interruption they might pose to the older students on campus.

There are also concerns with this weekly or monthly schedule. The weekends at the AFS are a time for many of the staff to rest and relax. Although some might live on campus, very few are expected to work on these days. Mr. Mousiades mentioned that the AFS “is not as fully staffed [on weekends]. So you need to consider that. When we have weekend events, we need specific staff to be available. What do we do with security? Because again we are a boarding school, so we do have students living on campus during the weekend [...] So, there are issues relating to security that will need to be addressed. And there are issues relating to safety that need to be addressed.” Along with the staffing shortage that occurs on weekends, there is also the security of the buildings and students that live on campus. For a museum to be open periodically, it will need to address the concerns raised if it were to be opened in such a fashion.
For some of the interviewees, the seasonal approach, in which the museum would be open on a limited basis, was more appealing because it would reduce staffing costs and public safety concerns, and security risks while allowing outside visitors in. However, this modifies one of the original purposes of the museum. For most of the year, the museum would only support the existing programs. The will only take a leading role occasionally throughout the year. The AFS has crops that peak at different times of the year. According to Dr. Vasilikiotis, visitors would be interested in seeing the seasonal changes on the campus. In his view, “the AFS is very well known in the city. So there’s a lot of potential if you set up the monthly or bimonthly visits you will get people to come. There is a lot of desire for that.” In this way, the AFS can accommodate the importance of experiential learning that corresponds to a seasonal harvest on campus.

A few interviewees argued that an open-air museum at the AFS should, at least initially, have limited operations, but capitalize on one of the AFS’ most popular special events, May Day. The interviewees believed that visitors from Thessaloniki and the surrounding area will be interested in coming to a museum at the AFS on a yearly basis, based on the success of May Day. Dr. Rotsios was very optimistic about the appeal of the museum to Thessaloniki residents, believing that “people of Thessaloniki will come. Every other year, we have an open house at the AFS, and we have 7,000 people in one day coming to the school. That’s May Day. So yes, the citizens of Thessaloniki; you tell them that it is open and they will come.” In this approach, May Day can be used as means to popularize the museum before opening it more frequently to the public. Such a strategy would eliminate the need for additional staff and avoid creating additional safety and security issues, while still generating large interest from outside residents. May Day features many attractions, scattered all around the campus (Figure 71).

The seasonal or yearly approaches have been successful for the AFS in the past, and they avoid some of the concerns of the year-round approach.
Should the museum contain an indoor portion?

The concept of an open-air museum was questioned by some interviewees, who thought that a museum that consisted exclusively of outdoor exhibits and signage would appear less formal, less impressive, and less professional. An indoor facility, located at the start and/or end of the museum visit, for many, would address the issue. Dr. Vasilikiotis thought the museum would appear more "organized" if the welcome center was implemented. Mr. Mousiades thought the welcome center would "[provide] an overall layout of the museum across the campus, and [get] people started on a path. Maybe it’s where they meet a tour guide.” As mentioned by both officials, the welcome center would provide a starting and ending point for museum visitors to focus and improve their visit to the AFS museum. Mr. Mousiades also offered the suggestion that visitors could be organized into tour groups with guides at this location.
What are the opinions of Thessaloniki museum visitors on an agricultural museum at the AFS?

Where did our museum-goers come from?

12 out of the 25 people who we approached in intercept interviews outside the AMTh agreed to be interviewed and provided insight into audience interests. Two of our 12 interviewees were Thessaloniki residents, while the rest were tourists (Figure 73).
Although our audience was tourist-heavy, the responses to our agricultural museum concept were mostly positive, including positive responses from both Thessaloniki residents (Figure 74). Some respondents were unsure, mentioning that their interest would depend on available content or activities; we categorized these as "maybe" responses. The respondents were also almost entirely devout museum-goers, as nine out of 12 respondents (75%) mentioned that they visit museums often.

Residents and tourists reacted positively to an agricultural museum at the AFS.

Figure 74: Museum goers’ interest in an agricultural museum
The AFS may be interested in charging an admission fee to attend the museum, to recoup its investment and generate additional revenue from its new offering, since Mrs. Konstantinou and other administrators expressed concerns over the funding of the museum. Nine museum-goers provided prices that they were willing to pay to experience an agricultural museum at the AFS (Figure 75), while the remaining three interviewees couldn’t answer without additional information on the size of the museum. The nine responses indicate that the AFS could charge between five and eight Euros for an admission fee. For comparison, the AMTh charges eight Euros for normal admission, with discount tickets available to students and senior citizens. Considering that some interviewees considered the AMTh a “small” museum, the open-air museum at the AFS could start by offering a similar price point. Additionally, the AFS could offer discount tickets for not only students and senior citizens but also AFS parents and families, as several interviewees indicated that the discount ticket prices for students were an appealing factor for them. Offering similar ticket options as the AMTh for the AFS’ museum would provide a way to recoup investment costs and provide a new revenue source for the AFS, while remaining at a reasonable price for visitors.

Figure 75: Entrance fee survey results
How do Greek museums create interactive exhibits for their audiences?
Museums engage visitors by utilizing sensory interactions

One method to engage visitors is displaying authentic objects, or even letting visitors touch authentic artifacts. Visitors are fascinated by seeing authentic objects, rather than replicas or other representations (Bell, interview with CNN, 2013). Museums in Thessaloniki have embraced this method with their extensive collections. The AMTh provides some fragments of authentic prehistoric pottery for visitors to handle (Figure 77), engaging their sense of touch; the fragments are altered only by metal chains to prevent visitors from taking the objects.

AFS officials have recommended featuring authentic items in the open-air museum such as antiquated hand tools, the first combine harvester in Greece (Draper, 1994; Marder, 2004), and other tractors and harvesters from more recent years. Mr. Mousiades recommended an “in situ” approach where the museum would showcase the authentic farm equipment while in use. On a participation/observation exercise with a wheat tour, we observed visiting school children handling antiquated hand tools such as a pitchfork and scythe. Due to the small size of the children, the AFS instructor helped the children pick up and demonstrate the use of the tools.

Figure 77: Prehistoric pottery exhibit at the AMTh, featuring authentic prehistoric pottery fragments, for visitors to handle
The Casts Museum (Figure 78) is meant to allow students and visitors to be able to touch famous sculptures and structural replicas from all over the world. Visitors are able to touch the casts and replicas to feel the texture and gain a deeper appreciation for the art. Since the purpose of the museum is to compare, contrast, and admire the casts, the museum even allows visitors to move the casts around the museum to fit their needs. Nancy Kyriakou, an Aristotle University professor and Casts Museum staff member, explained the mentality behind this unique approach that allows visitors to understand “most importantly, how they function, how they affected the viewer, which is something that [visitors] are not easily aware of when [they] read about [the casts].”

Greek museums have adopted some touch-based exhibit designs, some involving experiential learning, that would inform the design of the AFS museum. The Casts Museum has their unique policy of letting museum visitors move museum exhibit objects around, so visitor permission to touch the statues to fully appreciate the beauty is implied as well. The WSMTh offers experiential learning, or “role play,” activities that allow their young visitors to experience the historic struggles of water supply, such as drawing water from a well and carrying the water to their house. The activity is used as a gateway to a “conversation with [the visitors] about the old system, before [the water supply] building, when it was a pumping station.”

The interactive components that engaged the sense of touch were used to capture the visitor’s interest, leading to an in-depth conversation with museum staff that conveyed the target content.
The only science museum toured in this investigation of Greek museums was Noesis, or the Thessaloniki Science Center and Technology Museum. Like many science museums, Noesis offered interactive demonstrations of scientific principles for young audiences that engaged their sense of touch, localized to a popular area called the “Technopark” (Figure 79). These touch exhibits were designed to induce a sense of discovery or curiosity, an exhibit design principle described by Skydsgaard et al. (2015) to attract visitor interest by offering an unusual phenomenon that intrigues the visitor.
The interactive portions of Ktima Gerovassiliou’s museum included touching fragments of raw cork wood, touching the antique grape presses (Figure 80) and tasting provided wine samples. Here, Ktima Gerovassiliou engages the sense of taste by offering their high-quality products to visitors. The wine tasting was a major attraction, and presumably a reason for many of the visits by wine experts. Similarly, the AFS produces high quality food products that are well-known throughout Thessaloniki. The AFS offered a tasting of their products, potentially, more Thessaloniki residents would be more inclined to visit the campus.
Technology enhances museum visits by providing a wider range of learning opportunities

Ktima Gerovassiliou museum included informational videos describing the farming tools and processes to plant and harvest the grapes needed for the wine. One reason Ktima Gerovassiliou adopted the video medium to teach material is timescale; the agricultural processes described in the video, such as planting, growing, harvesting, and processing, take a long time to occur. The video accelerates the observation of the content that the museum wanted to demonstrate in the museum, which was the many stages of winemaking. An exhibit at the AFS could use video in a similar manner to accelerate agricultural processes to an appropriate timescale for a museum visitor.

Other museums have begun to embrace technology options through a phone application. Noesis was the only museum out of the seven we visited to currently offer such an application, though the AMTh is in the process of designing one. Noesis’ free phone application provided additional detailed information for each item on display, along with an audio description for audial learners. Visitors could access the information by scanning QR codes located at every object of interest in the exhibits.
Figure 82: Structuring of museum content

- Variety of signage
- Organizing content by time period
- Protecting outdoor exhibits
- Multilingual signage and offerings

How do Greek museums structure their content to appeal to their target audience?
The AMTh is able to cater to a large scope of audiences, because of the varying levels of exhibit detail. The variation of levels is mainly accomplished through the layering of text in displays. We learned of this strategy in our background research; Carliner (2003) emphasized the importance of tempering the detail level of exhibit displays to avoid overwhelming the viewer and layering text to guide unfamiliar audiences through the exhibit. Larger text is used for titles, themes, and a general historical narrative. Successively smaller text dives into deeper levels of detail (Figure 83).

Some exhibits come with an optional additive information card aimed for the avid museum goers (Figure 84). According to Mrs. Palli, these cards of “hidden information are for people who want to learn everything about [the exhibit] something more.” The “hidden information” served a similar purpose to the phone application at Noesis museum, in that it provided a plethora of information targeted at an interested visitor.
Outside of text organization, content can be organized by time period. Ktima Gerovassiliou chronologically displayed wine bottles, from ancient amphorae to modern day bottles (Figure 85). The AMH and AMTh also adopted chronological displays, but in their overall museum layout; both archaeological museums recommended that visitors follow a path that introduced visitors to ancient artifacts first, then lead them through various time periods, closing in to the present day. The AFS owns the first combine harvester in Greece and many other older tractors up to recent models. A museum exhibit showcasing the farm machinery could adopt a similar approach in its display and interpretation to the chronological display at Ktima Gerovassiliou.
Museums protect outdoor exhibits with simple overhangs

In the Palace of Knossos, several areas were covered by an overhang to protect the ancient ruins from further decay by weather (Figure 86). The AFS would like to display some of its old farming machinery, such as the first combine harvester in Greece, but they have already been subjected to different weather conditions that harm the machinery. Protecting sensitive exhibits from the elements is important in the design of the open-air museum the AFS is considering, and the exhibits can be protected by placing an overhang.

The number of students visiting the AFS on field trip programs has increased from 7,000 in 2005-2006 to 16,400 in 2016-2017, a 134% increase from when the school started offering formalized educational tour programs in 2004 (Figure 17), when Irini Stamatiou joined the AFS staff as Head of Educational Programs. Mrs. Stamatiou attributes the attendance increase over time to the same schools returning year after year, due to a 90% satisfaction rate, as measured by teacher evaluations her office distributes. When we interviewed teachers that visited the campus with their students, seven of the eleven groups (64%) were visiting for the first time, indicating that the AFS is succeeding in marketing their programs to new schools. Two of the groups were on their second visit, indicating that the school was satisfied with the AFS programs on their first visit. One group even returns to the AFS every year.
Museums appeal to multiple audiences through multilingual signage and offerings

The Palace of Knossos and the AMH target tourists to Crete, as seen through our observations of visitors and museum practices. Many of the signs for entry, prices, the information in the entry, and the signs inside of the ruins and the museum were in Greek and English to appeal to the large variety of audiences (Figures 87 and 88). To capitalize on the number of visitors that the Palace is reaching, several tour guides waited in the entrance to offer tourists a private tour of the museum. The tours were offered in many languages, including Greek, English, and German.
The idea of having the information in English and Greek is a practice that the AFS already uses, but extending it to the museum would help when wanting to reach a bigger audience. The idea of having tour guides that speak both English and Greek was brought up in our interview with Mr. Bizbiroulas with him stating that tour guides cannot be replaced. Many of our later interviewees advocated that tour guides were essential for the proper implementation of the museum on the AFS campus. A concern that we came across was the identity and compensation of the tour guides. Some interviewees suggested that either Perrotis College or high school students would serve as tour guides.

Dr. Vergos suggested that vocational high school students would serve as the best tour guides for the AFS museum, since they already know the AFS and the farm extensively, due to the nature of their education. Serving as a tour guide could be incorporated into their studies or program. Some of the college students already give tours of the campus, as we learned from Mr. Bizbiroulas. He suggested the creation of a tour guide manual to standardize tour content across all AFS museum tour guides. Many of the college professors we spoke with supported the idea of student tour guides, but some were concerned with students’ willingness to do so voluntarily. Dr. Rotios acknowledged the different interest levels among the AFS students, since “some of [the students] will be enthusiastic about [the museum], some won’t care, and some will be completely indifferent.” He still heavily favored the inclusion of AFS students, considering them, by necessity, “a part of this museum” concept.

Figure 89: AFS student-farmers
How do Greek museums promote themselves to their target audience?

Museums advertise to schools through a central education office

Based on interviews with employees of the WSMTh, Casts Museum, and the AMTh, Thessaloniki museums have similar tactics for promoting themselves to schools. Each museum emails an advertisement to the central office of education in Thessaloniki. The central office then emails the schools, listing all of the museums for them to visit as options. Based on the literature and interviews with museum officials and AFS faculty, Greek public schools need to have a minimum of three field trips or excursions in different times of the year, as stated in the Excursion Act of 2017. Once the museum is operational, the AFS can contact the office or ministry of education to add them to the list of museums that gets distributed to the schools.

Other museums are promoted through their products. Ktima Gerovassiliou relies on their reputation; their museum collection wine was one of the winners of the Thessaloniki International Wine Competition (2018), and their products have won 579 distinctions dating back as early as 1990 (Ktima Gerovassiliou, 2018). Ktima Gerovassiliou’s award-winning wine is distributed all across Greece, enticing wine-lovers and tourists to visit the winery and museum. The AFS has promotional strategies in place already, to attract prospective students to their schools and market the AFS’ products. The AFS’ popular products could serve as a method to advertise the museum.
How do Greek museums support one another and work with larger organizations?

Museum unions and organizations aid museums in funding and staffing

The AMTh is part of a union of five large museums in Thessaloniki, including the Byzantine Museum, White Tower, Galerian Complex, and Roman Forum. A museum union can strategize to offer a combined cheaper ticket to visitors; the economical ticket option helps increase and spread visitorship between the museums.

Other museums draw support from various organizations for funding and staffing. Our background research had highlighted museums operated by Piraeus Bank Group Cultural Foundation (2018), but we discovered other operational sources from our visits to Greek museums. The Casts Museum parallels the concept proposed for a museum at the AFS due to its association with an educational institution. Aristotle University houses the Casts Museum, and university professors staff the museum. Changing museums exhibits are costly, but the Casts Museum draws a budget from Aristotle University to redesign every two years. The WSMTh also depends on an outside organization, as it is operated by the water supply company of Thessaloniki, EYATH. The WSMTh must always remain in operational condition, in case of a water supply crisis in Thessaloniki; this requirement brings the benefit of restoration and upkeep funding from EYATH, but also limitations on interactive exhibit design.

These two examples of museums relying on outside support provide positive outlook for the museum that the AFS would implement. The AFS museum would depend on staffing and funding from the AFS, in a similar fashion to the Casts Museum’s dependence on Aristotle University. The AFS museum will have inherent constraints on its scale, due to the presence of the working educational farm and the numerous schools on the AFS campus.
Design
We have compiled information from various tours, inputs from Dr. Vergos and other AFS officials, and various maps we received from AFS officials. We used the map of activities for May Day (Figure 71) as guidance when creating the museum layout (Figure 92). In the map, we have outlined key areas that should be incorporated into the museum, including historical sites and the farm. The historic sites include Haskell Cottage, Princeton Hall, James Hall, and the church. For each of these sites, a small sign or display could be designed with a description of building in reference to AFS history. The farm sites include the agro-food processes on campus, the dairy barn where the cows are kept.

Figure 92: Layout of possible museum content.
When considering the possibility of a welcome center, we determined a possible location by identifying an indoor space that could be repurposed. Informed by possible future plans for the restructuring of the campus from conversations with Dr. Vergos, our group proposes two possible locations for the welcome center (Figure 93):

1. The open grassy area by the church, under a temporary welcome center setup
2. Just outside the farm school gate, inside a new building or temporary welcome center setup

Either of these locations could involve a temporary setup, if the museum is implemented in a seasonal or yearly setting. If the museum becomes more established, the AFS could consider constructing a new building to house the welcome center outside the farm school gate. A new project under consideration, as determined from an interview with Antonis Petras, would involve expanding the fence and moving the school gate closer towards the main road. Another associated change would be the movement of the campus store to be adjacent to the gate, to better facilitate sale of products to the public. However, Antonis Petras thought the addition of a welcome center would pose too much of a financial burden on the school, and advocated for a minimalistic welcome center that contained no content or interactive portions.

Figure 93: Possible locations for a welcome center
Current educational signs around the campus were implemented due to a 2015 study by students from Arizona State University, according to Dr. Vergos and Antonis Petras. The signs are located in only select areas of the campus. However, there have been mixed opinions on these signs in our interviews. Many interviewees were in favor of additional signage around campus to help lead visitors and explain different parts of the farm to them. Some interviewees were opposed to the current signs, due to the current state that they are in. They are not regularly maintained, and they are not very obvious in the layout of the campus (Figures 94 and 95).

Many people suggested that the signs explain the farm but also include components of AFS history and its influence in that particular sector in the agro-food industry. We have created suggestions and designs for additional educational signs that would accompany the dairy path, discussing the feeding and milking of cows, the processing of the milk, and the bottling and sale of the final milk products (Appendix K). We incorporated advice on museum signage design from our background research, our investigations on the target audience of a museum at the AFS, and characteristics of Greek museum signage we observed into our own signage design. While we offer the signage in English, we expect the signage to be written in Greek in the final application.

Figure 94: Existing sign at the vineyard.

Figure 95: Existing sign at the head of the olive trail.
In our placement of the signs around campus, we considered locations highlighted by the dairy tour offered to visiting school groups that we could combine into a complete story, or narrative, to connect the content for visitors in a better presentation (Skydsgaard et al., 2016). Our narrative focused on the life of a cow on the AFS campus, incorporating aspects of AFS history and the AFS’ innovations in the dairy industry in the context of the milking, processing, and bottling steps (Figure 96).

We placed signs one through three near the fields, where feed is grown for the cows, sign four at the milking parlor where groups are explained the milking process, and sign five through seven at the dairy processing plant where groups observe the processing floor from above. Our visit to OSV informed us that the farm with animals is popular, partly due to the universal connection that every animal eats (R. Simmons, personal communication, February 9, 2018). Teaching the visitors what the cow eats, and how much, connects the visitor to the narrative we devised. Using buildings such as the dairy processing plant and the milking parlor adheres to the concept of incorporating the exhibit space into the content, mentioned by museum experts (King & Lord, 2015). Placing the signs in these locations also allows for comparison of past and current methods.
The text of the signs was based on our expected target audience, background research and investigations of text in Greek museums. The largest target audience to consider was school groups, with ages ranging from nursery school through high school. However, the school groups are accompanied by a guide who explains most of the content on the signs already, so we disregarded this audience for the sign design.

We intended these signs for visitors from Thessaloniki or other local areas, or perhaps tourists. The reading level of the signs is suitable for young adults and up, so if families came to visit, the parents or older siblings could convey the information to younger children. The younger children would prefer the interactive exhibits, according to our interviews with kindergarten and primary school teachers.

We used text layering to appeal to multiple levels of audience interest. Text layering is used in museums to communicate general themes to passive visitors while providing sufficient content detail to fascinate visitors with background knowledge and interest in the material (Carliner, 2003). We observed text layering in signage at the AMH and AMTh when we visited those museums.

We used larger-sized font to communicate the general message of the sign, while smaller-sized font provided a more complete picture of the process discussed or included aspects of AFS history.

Figure 97: Exhibit at the Archaeological Museum of Thessaloniki.
An additional feature we incorporated into the text of the signs is the flip-book style on signs three and four. We observed this sign design at OSV, where the signs teach about fabrics and food in the 1800s (Figures 98 & 99). We adopted this approach by asking a question of the viewer, and providing three options for the correct answer. When flipped over, the two incorrect answers display a “No” with an explanation, and the correct answer displays a “Yes.”

After the text was designed, we made the signs visually appealing with color choice and pictures. We selected colors for the signage according to input from the Communications Office. We obtained the exact color code for the green color (RGB: 00, 99, 65 and CMYK: 100, 0, 33, 62) used in Perrotis College’s logo for our use. We selected a pale yellow and a dandelion color to complement the green and make the signs visually inviting. We used images from the school library’s archives as well as market pictures we received from the Communications Office. All pictures and text were then presented with rounded edges rather than square edges, to give a “soft” appearance to the sign, according to advice from Ms. Peristeropoulou in the Communications Office.

Additions to existing dairy programs

On some of the current tour offerings for school groups, we observed areas where we could incorporate prototype content. To better inform the children on the milking process, a video of the milking process was shot with the permission of Dr. Souglis and encouragement of Dr. Vergos. We expanded the content of the video to include the processing and bottling facilities as well, because we had observed that the view from the dairy processing viewing gallery was high above the bottling facility, and restricted to only a few windows (Figure 100).

Figure 100: View from the gallery in the dairy processing plant
To improve the viewing experience for the visitors, we gathered video footage that captured viewpoints that the dairy tour lacked. Visitors cannot observe the cows being milked (Figure 101), or see the dairy processing equipment (Figure 102) from the viewing gallery. We also gathered close-up video shots of the bottling and packaging (Figure 103) machines in action. We suggest implementing this video in the milking parlor and the milk processing plant gallery, by placing screens equipped with the necessary video content in those locations.

Museum experts Sophia Rok-Mella and Dionysis Giannibas approved of the video, as long as added interactive exhibit portions can reinforce content learned from the video. Mr. Giannibas suggested that the AFS could select a cow for an alternate milking schedule to align better with school groups. However, Ms. Rok-Mella disagreed; based on her prior knowledge of farm operations, such an adjustment would not be feasible for the AFS.

Figures 101-103: Elements of the dairy production process highlighted in a video we produced for the AFS.
Experiential learning exhibits

Both AFS and school group teachers were very excited when asked about the incorporating experiential learning into the museum. Many stated that hands-on learning would make the exhibits and content more interesting. In interviews, AFS officials thought that experiential learning exhibits would allow the AFS to reach a wider audience within school groups and potentially extend to younger audiences. For the older students, from elementary and high school, the teachers told us that their lessons involve more theoretical learning in a classroom setting, so a chance for the students to partake in experiential learning would be beneficial for them and pique their interest. Additionally, six of the seven museums we visited had some form of an interactive portion. After our interviews, museum visits, and observations on AFS tours, we propose several interactive exhibit design ideas.

Figure 104: Newly hatched chicks at the AFS.
Dairy process piping assembly

During our interview with Ms. Stella Karakostas, the idea emerged of a dairy process piping model to accompany the dairy video that we are producing for the AFS as seen in Figure 105. The dairy piping would be assembled by visitors and would contain a model filter, homogenizer, pasteurizer, and cooling tank, along with pipes to connect the parts. Once assembled, the visitor can put water, that will represent milk, to show the water going through of the stages just like the milk does in the bottling plant. For young children, this activity would give them a chance to work with others and play with water and pipes; we were told by two elementary teachers, Mr. Chatzikostas and Ms. Tekidou, and a kindergarten teacher, Ms. Karakostas, that young children like to play with water and pipes. For older students, this activity would allow them to test their knowledge of the content they learned in the video.

Figure 105: Proposed dairy process piping model assembly concept art.
To incorporate experiential learning design concepts into a prototype exhibit, the growth of cow feed to explain the development of mechanized and industrialized agricultural machinery, such as tractors, was considered. To communicate the necessity of improving the soil tilling speed, we developed a time comparison experiential exhibit called Differential Farming (Figure 106). This exhibit would task the visitor with tilling the soil in a provided soil bed, or Differential Farm. A tour guide or staff member could then ask the visitor, “What if you had to plant an entire field?” This question would lead to a discussion of the time-consuming process of using hand tools, and convince visitors of the importance of agricultural technology developments. The soil bed would be located next to sign two (Appendix K) and require several hand tools suitable for visitors to use at the location (Figure 107). The AFS already has hand tools available for use by the kindergarten and elementary students on campus as part of their plant production lessons. As long as supervision is included in the implementation of the museum, such as the use of tour guides, the hand tools could be incorporated in a similar fashion that they already are on the wheat tour program.
Ms. Karakosta, who teaches kindergarten, thought that this exhibit would appeal to elementary school children. Elementary school teachers agreed with that assessment. Museum experts Sophia Rok-Mella and Dionysis Giannibas thought that this exhibit would be attractive to the younger audiences, and liked the idea of the scale-up to explain the development of agricultural technology.

An option to target an older audience with the Differential Farming exhibit is allowing high school students to work on a plot of land, perhaps 10 square meters, to experience the full process of tilling and seeding the soil. This approach would require larger hand tools suitable to the older audience. In this approach, also, the implementation of the museum would require supervision of visitors through staff or tour guides.
Our team considered methods to incorporate the holistic education strategy of the AFS in our interpretation of museum content. A suggestion is to move the first combine harvester closer to modern equipment to show the evolution of machinery throughout the AFS’ history. We suggest constructing a small overhang to house a horse-drawn or hand plow, the first combine harvester, and a new harvester for visitors to see a side-by-side comparison (Figures 108-110).

The side-by-side approach is adopted by the Museum of the Olive and Greek Olive Oil to demonstrate the use of olive presses from antiquity, the Byzantine era, and the modern era (Piraeus Bank Group Cultural Foundation, 2018). Mrs. Konstantinou and Mr. Sougaris recommended this comparative approach in interviews, praising the Museum of the Olive and Olive Oil in Sparta in particular. Dr. Vasilikiotis mentioned the side-by-side approach in a design that showcased “the evolution of equipment [...from] what they used to do a hundred years ago, fifty years ago, and more modern stuff.” This idea was further backed up by our visit to Ktima Gerovassiliou and their chronological display of wine bottles and amphorae. The idea would emphasize the AFS’ contributions in innovation, and visitors will see the AFS as a leader in technological development. This exhibit would accompany sign two (Appendix K) and the Differential Farm exhibit.
Next Steps
Based on the literature, a museum at the AFS needs a strong mission statement to have a solid foundation and define its goals (George & Maryan-George, 2012; American Alliance of Museums, 2014; Smithsonian Institution Office of Policy and Analysis, 2002). When thinking of the mission for the museum, the mission of the AFS itself can be used as another guiding force. Many of our interviewees, when asked to propose a purpose for a museum on campus, referred to the mission of the AFS and a statement made by the founder John House, that the AFS should educate “the head, the heart, and the hands” of its pupils through a holistic approach.

Create a mission statement
Besides the educational signs, we advise additional directional signs that guide visitors to locations away from the central part of campus. Existing directional signage was implemented following a study by students from Arizona State University, and we recommend installing more to direct visitors toward exhibit locations. Locations highlighted in our site design that would require signage to find include the milking parlor, the dairy processing plant, Haskell Cottage, and other historic sites.
Conduct more target audience research

We interviewed Thessaloniki museum-goers at the AMTh to evaluate audience interest in an agricultural museum at the AFS. However, the majority of our interviewees were tourists, not Thessaloniki residents. To provide a broader perspective of Thessaloniki resident opinions, we advise repeating this research on a weekend or outside of typical school and work hours to interview more Thessaloniki residents. Additionally, we observed a difficulty in attracting Greeks to be interviewed due to the language barrier, as nearly half of museum-goers who refused to be interviewed didn’t speak English well enough (Figure 113). Sending native Greek speakers to collect this interview data may result in a larger number of responses.

Ms. Rok-Mella recommended further audience research to determine areas of interest for each of our target audience groups. She recommended assessing the pre-existing knowledge, content interest areas, and content depth interest of the audience. The AFS should conduct more in-depth content analysis interviews with museum-goers and other target audiences, when possible, to evaluate signage and exhibit design.

We were unable to conduct research on the opinions of a museum on the AFS campus to parents of AFS primary school and high school students. Parent would be able to give insight from a different demographic of whether or not people would be interesting in an agrotechnology or open-air museum at the AFS. An example questionnaire that can be used as a guide is found in Appendix F.

Figure 113: Reasons for 11 museum-goers refusing interviews.
Decide on implementation and scale

After discussing with our sponsor and analyzing the data from interview, we feel that more research needs to be conducted on the final decision on the implementation and scale of the museum that would benefit the AFS. There were concerns brought up during the interview with the safety of the visitors, farm, and the animals that created conflict with the museum open every day of the year. To make an informed and most beneficial decision, more data is needed.

Consider a welcome center

In the consideration of movement of the campus store to outside of the campus gate, the most ideal location for a welcome center or starting point of the museum is in the new campus store. The center would be outside and not allow anyone to pass through the gate without a ticket to the museum which could decrease safety concern. Having the welcome center in the campus store would allow for the AFS to promote their products to the visitors.

Charge admission prices consistent with other Greek museums to recoup costs

Thessaloniki museum-goers indicated that they would pay between five and eight euros to attend an agricultural museum at the AFS. Considering the eight-euro attendance cost of the AMTh, this price point is on par with other Greek museums.
Potential partner with Noesis or a foundation

In our investigations of Greek museums, we learned that there are some cases of museums partnering with each other or outside organizations for financial backing:

- Piraeus Bank Group Cultural Foundation runs nine museums around Greece, several of which feature agricultural content similar to the open-air museum proposed in this project.
- A union of five museums in Thessaloniki, including the AMTh, offer discounted admission costs to spread visitorship among several different museums.
- The Palace of Knossos and the AMH offer a ticket option that includes admission to both sites for a small additional cost, to spread visitorship between the museums and improve the education quality of both sites.
- The Casts Museum relies on funding, staffing, and space from Aristotle University.

If the museum is implemented on campus, it will depend on support from the farm and school for funding and staffing. The AFS could consider working with a local museum, such as the nearby Noesis museum, to spread visitation and advertising. Alternately, the AFS could reach out to foundations, such as Piraeus Bank, for financial support in establishing the museum. More information needs to be gathered to see if a union or cooperation is a viable option for the AFS and if they will benefit from it.
Promote the museum through the centralized education office in Thessaloniki

Many of the Greek museums that we studied promote themselves mainly through the central educational office in Thessaloniki, due to a legal obligation of schools to send students on three field trips a year. The central education office compiles and distributes a list of museum options to schools. The AFS can promote its museum offering through this same office.

Cooperate with BBEM to design the museum

Ms. Rok-Mella and Mr. Giannibas emphasized that a team is necessary to plan and create a museum. According to their written response, this team must have “…an expert and coherent team responsible for planning and creating the museum [for example Dr. Vergos], the person responsible for fundraising in the AFS, the person in the AFS most related to expanding audiences for the School, [and] museum experts like BBEM.” The AFS could consider hiring BBEM to assist in the development of the museum.
Conclusion

An open-air museum at the AFS is a concept that many people associated with the AFS are enthusiastic about partaking in and offering input. The museum needs to have themes that represent the AFS throughout its history and the innovations that they have contributed to the agro-food sector in Greece. Exhibit content and design should focus on utilizing experiential learning techniques to communicate the importance of the AFS and to educate visitors on agro-food processes. Adopting the open-air museum concept to improve existing educational programs for visiting schoolchildren and special events, like May Day, would be the best strategy. Accepting Thessaloniki residents to the museum on a special event basis would be a conservative implementation that may alleviate some concerns for funding and staffing.

There are some areas of research that still need to be investigated more deeply. One area is the opinions of families of AFS students regarding the impact of a museum on campus and its potential effects. Another area is the creation of more detailed displays and exhibits for the other areas, such as hens and turkeys, olives, wine, fields, vegetables, aromatic gardens, and historical buildings. We have designed a prototype of the dairy exhibit area that can be used as a guide for other exhibit design. The last suggestion would be to acquire more opinions of Thessaloniki residents to assess their interest in this open-air agrotechnology museum.
References: Text


Excursions 2017 (DG4) s. 681/B/6-3-2017 (Greece)


Rotsios, P. Letter to Trims, A. E. 1 February 1973. Folder 4.A.1.40s. Letter about the problem of good dairy replacements and potential solutions to the issue through pros and cons. Historical Archives of the American Farm School, Dimitri & Aliki Perrotis Library. American Farm School, Thessaloniki Greece. 30 April 2018
References: Text & Figures

Rotsios, P. Feasibility Study. Folder 4.A.1.40S. Feasibility study for dairy and improvement at the American Farm School, Thessaloniki, Greece. Historical Archives of the American Farm School, Dimitri & Aliki Perrotis Library, American Farm School, Thessaloniki Greece. 30 March 2018


Williams-Davies, J. (2009). ‘Now our history is your history’: The challenge of relevance for open-air museums. Folk Life - Journal of Ethnological Studies, 47(1), 115-123. doi:10.1179/175967009X422864

Wills, David. Letter to G. Mahon. 15 July, 1980. Folder 4.A.1.40S. Letter about potential implementation of Embryo Transfer at the AFS. Historical Archives of the American Farm School, Dimitri & Aliki Perrotis Library, American Farm School, Thessaloniki Greece. 30 March 2018


Figures:


Abstract

Figure 1: Aliki Perroti Student Residence. Source: Champlin, Danny. Personal photography. (2018).

Introduction

Figure 2: Archival image of dairy farm at AFS. Source: Anonymous. n.d. Box 4, Folder 12 A.O. Picture of the dairy farm at the AFS. Historical Archives of the American Farm School, Dimitri & Aliki Perrotis Library, American Farm School, Thessaloniki, Greece. 3 May 2018.

Figure 3: Perrotis College. Source: Ruano, Emma. Personal photography. (2018).

Figure 4: Child feeding baby cow at the AFS. Source: Peristeropoulou, Alhina. Photograph. (2018)

Background

Background Section Photo: Cows grazing at the AFS. Source: Ruano, Emma. Personal photography. (2018).

Figure 5: First building on the AFS grounds. Source: Draper (1994)

Figure 6: Thessaloniki landscape in the beginning years of the school. Source: Draper (1994)

Figure 7: The arrival of cows to bolster the AFS’ depleted herd. Source: Miller (1948)

Figure 8: AFS student at work. Source: Marder (2004)

Figure 9: 1930s graduation of students from the AFS Source: Marder (2004)

Figure 10: James Hall after a Nazi bomb exploded. Source: Marder (2004)
References: Figures

Figure 11: Vineyard at the AFS campus.

Figure 12: The trend of increasing population in urban centers since 1955.
Source: The World Bank (2014)

Figure 13: Old tractor at the AFS.
Source: Draper (1994)

Figure 14: Entrance to the Archaeological Museum of Thessaloniki.

Figure 15: Gwalia Stores and Moss-Vernon’s Portrait Studio.

Figure 16: Olive press at the Museum of the Olive and Greek Olive Oil.

Figure 17: Carding mill at Old Sturbridge Village.
https://commons.wikimedia.org/wiki/File:Old-sturbridge-village-carding-mill.jpg

Figure 18: St. Fagans National History Museum.

Figure 19: AFS fields.

Figure 20: Components to analyze for a museum at the AFS.

Figure 21: Smithsonian National History Museum.

Figure 22: Center Meetinghouse, Old Sturbridge Village Massachusetts.

Figure 25: Cherry blossoms at the AFS.

Figure 26: An ultra-wide rectilinear stitched panorama of the Great Court of the British Museum in London, United Kingdom (2013).

Figure 27: Map of Old Sturbridge Village, modified detailing the layout of buildings and open areas.

Figure 28: Explanation of text layering.

Figure 29: Pottery at the Archaeological Museum of Thessaloniki.

Figure 30: Landscape of the AFS campus (1).

Methods

Methods Section Photo: Museum team at work.

Figure 31: Museum assessment process.

Figure 32: Use of a word cloud.

Findings

Findings Section Photo: The church on the AFS campus.

Figure 42: Landscape of the AFS campus (2).

Figure 43: Cincinnati Hall.

Figure 44: Landscape of the AFS campus (3).

Figure 45: Word cloud of free-listing responses.

Figure 46: Flowers and greenhouses.

Figure 47: Topics to highlight in the museum.

Figure 48: Haskell Cottage.
Appendix A
Operational Faculty Interview Questions

1. How long have you been associated with the AFS? What roles have you filled in that time?
2. What are key features of the AFS that you feel should be featured in a museum?
3. What are your concerns for a museum at the AFS?
4. Who do you see as the target audience of the museum?
5. What do you think the impact would be of outside visitors entering the campus to see the museum?
6. What do you see as the purpose of the museum?
7. What developments and changes to the campus do you have in mind for the next decade?
8. What are your impressions of existing signage on campus? Do you think more signage and exhibits would help or hurt the campus?
9. How do you maintain existing signage and visitor facilities?
10. What legal concerns for zoning should we consider in our site design?
11. What makes the AFS special for you?
Appendix B
Administrative Faculty Interview Questions

1. How long have you been associated with the AFS? What roles have you filled in that time?
2. What are key features of the AFS that you feel should be featured in a museum?
3. What are your concerns for a museum at the AFS?
4. Who do you see as the target audience of the museum?
5. What do you think the impact would be of outside visitors entering the campus to see the museum?
6. What do you see as the purpose of the museum?
7. What developments and changes to the campus do you have in mind for the next decade?
8. What are your impressions of existing signage on campus? Do you think more signage and exhibits would help or hurt the campus?
9. What do you think of AFS students as human resources for the museum?
10. How could this museum be promoted?
11. What makes the AFS special for you?
Appendix C
Teaching Faculty Interview Questions

1. How long have you been associated with the AFS? What roles have you filled in that time?
2. What are key features of the AFS that you feel should be featured in a museum?
3. What are your concerns for a museum at the AFS?
4. Who do you see as the target audience of the museum?
5. What do you think the impact would be of outside visitors entering the campus to see the museum?
6. What do you see as the purpose of the museum?
7. What do you think of AFS students as human resources for the museum?
8. How will this museum affect AFS students?
9. What is the educational gap you have seen in understanding about the agro-food process?
10. What do students typically know already about the AFS and its history before they come here?
11. What makes the AFS special for you?
Appendix D
Questionnaire for Visiting Teachers

Teachers:
Καθηγητές:
1. Is your visit tied to class curriculum of the students?
Η επίσκεψή σας σχετίζεται με το πρόγραμμα σπουδών?

2. Would the availability of lesson plans of the visit be beneficial to you?
Θα ήταν ωφέλιμο να υπήρχε διαθέσιμο σχέδιο μαθήματος για την επίσκεψη αυτή?

3. What museums do you visit with your class and why?
Τι είδους μουσεία επισκέπτεστε με την τάξη των μαθητών και γιατί?

4. Would you like to know about the evolution of milk production technology?
Θα θέλατε να μάθετε σχετικά με την εξέλιξη της τεχνολογίας παραγωγής γάλακτος?

5. Do you think your students would be interested in experiential learning?
Νομίζετε πως οι μαθητές σας θα ενδιαφέρονταν για βιωματική μάθηση?
Appendix E
Museum Visitors Interview Questions

1. How did you enjoy your visit to this museum?
2. What exhibits sparked your interest? Why?
3. Did you explore the outdoor portion of the museum? What are your thoughts on those exhibits?
4. Why did you come to the museum today?
5. Why do you go to museums?
6. Do you visit other museums?
   a. How often do you go to museums?
7. Would you be interested in visiting a museum with hands-on exhibits about farming and innovation in how food is produced?
8. How much would you pay to visit this kind of museum?
9. Do you currently live in Thessaloniki or are you from another part of Greece?
Appendix F

Questionnaire for AFS Facebook Page and AFS Elementary Parents

1. Do you live in a rural, urban, or suburban setting?
   a. Rural
   b. Urban
   c. Suburban

2. Are you familiar with the innovations that the American Farm School has brought to Greek agriculture?
   a. Yes
   b. No

3. Would you be interested in going to a museum at the American Farm School that featured the farm?
   a. Yes
   b. No

4. What areas would you be interested in learning about? (Check all that apply)
   a. Milk Production
   b. Hens and Eggs
   c. Olive Oil
   d. American Farm School History
   e. Winery
   f. Current Research
   g. Smart Farming/Precision Agriculture
   h. None of the Above

5. How much would you pay to go to this proposed agrotechnology museum?
Appendix G
Museum Staff Interview Questions

1. How has the museum fared in popularity over the past ten years?
2. What strategies have you used to remain operational since the beginning of the economic crisis, or Great Recession?
3. How do you address the change of the seasons? How do you maintain outdoor exhibits and equipment? (for open-air museums or museums with outdoor components)
4. What makes a popular and interactive exhibit? What attracts visitors?
5. How do you design an exhibit for all age groups?
6. Do you offer audio tours? Have you considered adding an audio tour?
7. How do you incorporate agriculture? How do you make agriculture interesting for your audience?
Appendix H

Descriptions of Historic Sites
1. Haskell Cottage, or the 1903 house, was the first building built on campus. It housed the original farmer and children that attended the school. Although today it doesn't play a major role in campus activities, it is used in campus tours for children visiting to learn about the process of growing, harvesting and using wheat in food (I. Stamatiou, personal communication, March 19, 2018). The building has historical value for the museum that should be included.

2. The campus church, opened in 1955 with the base stones from villages of the graduating class of 1954 (Draper, 1994, p. 106). The Church hosts weddings and is open a few times a year for special events on campus. This building could serve as a landmark for a starting area of the museum.

3. James Hall. One of the original buildings on campus, built in 1906-1907 (Draper, 1994, p. 19). The building is a sign on the hardships the school has faced. The building has burned, been bombed, but rebuilt every time (Marder, 2004).

4. Princeton Hall, constructed in the mid 1920s by Greek refugees from Asia minor (Marder, 2004). Princeton hall currently resides in a nice area of campus and has been a pivotal part of campus life since its completion. The building could provide a place to sit and relax during the campus tour or provide an opportunity to invoke historical discussion of the AFS.

5. The campus store. AFS products are sold here, and it can highlight these products for the museum. This is also a place for the items to be tried and/or sold to visitors to the museum.

6. Location of the first combine harvester on campus. Currently secluded in an area of campus not heavily traveled by visitors. As part of the museum it needs to be moved to a more traveled part of campus and a cover or overhang erected over it to protect it from the weather.

7. The memorial park. People who have greatly affected the path of the AFS, including Dr. John House and wife Susan House, are buried here. We do not recommend incorporating this area in the museum, out of respect.
Appendix I
Descriptions of Plant Production Areas

8. The shed where current equipment is stored. As this shed is still in use, it can’t be moved and transported to a different location on campus for the museum. However, a tour could walk by and show the different machines that are in use, along with signs that have pictures comparing the new machinery to the old.

9. The large field on campus that is used to produce different crops. This field is a good example that can be used to showcase the different techniques used by the AFS to harvest the crops and how technology plays a key role in that.

10. The aromatic garden has different herbs and small plants such as oregano. Although not required to be covered by the museum to understand agrotechnology and the AFS, this garden could allow visitors to use their sense of smells and touch by providing them the opportunity to smell the herbs and touch them.

11. Another area were different plants are grown to be used by the AFS used to showcase the different techniques used by the AFS to harvest the crops.

12. This is a patch of land that is used to grow different crops from wheat, which is incorporated into the wheat tour, and different vegetables. This part will be an interesting topic to touch on because it is harder to cover in large scale farming and can be an interesting topic to cover.

13. The campus winery is another possible stopping point on campus. They already have some signs on the building that cover the process of winemaking and a small tour of the building with a guide would be sufficient for the basic understanding of wine making.

14. The vineyard has a sign that needs to be covered by visitors. A revamping of the current signage is necessary, as the current sign is unattractive and not well-maintained.

15. The olive grove of the AFS is a growing endeavour with research being conducted on different techniques for farming. This area also connects to the history of the AFS, as some trees were planted and dedicated to different contributors. This area would allow the linkage of farming and history.

16. Perrotis Krinos Olive Center, where olives grown on campus are processed into olive oil. This building will be an important feature to include in the museum, as it has some historical components and a lot of work has already been put into the center for public interaction.
Appendix J
Descriptions of Animal Production Areas

17. The milk parlor has a viewing center for current visitors to see how and where the cows at the AFS are milked. Although out of the way, this area is included in the museum layout because milk is the most product of the AFS.

18. The processing plant where milk is pasteurized and bottled for shipment has an indoor site that can be used to teach potential visitors about the agro-food industry and how milk gets from the farm to their fridge.

19. The hatchery and hen house. This area can provide a deep learning experience for potential visitors, as the area has already been set up for visiting school groups. Slight alterations to include more signage that is user friendly might make the area more inviting. Currently, unauthorized personnel are not allowed to visit for health code reasons.

20. The houses where turkeys are raised for consumption during Christmas. This area, although unique to the AFS as they brought the idea of consuming turkeys on a large scale for the holidays, is not a good subject area for visitors. During parts of the year, there are no turkeys. When there are turkeys, the noise and commotion caused by visitors can cause the turkeys to harm other turkeys around them. This area should be avoided by a museum for the safety of the birds.
Appendix K
Examples of Prototype Design Signs for a Dairy Exhibit

I'm Moo-moo, the mascot of the school.
Moo-moo is one of the 120 cows here at the American Farm School that provides milk.

Holstein cows have been at the AFS since 1948
In 1948, a shipment of Holstein Cows arrived at the American Farm School due to depletion of the herd after WWII and the Greek Civil War. These cows were brought over from America on a boat. The original Holstein herd from 1935 was depleted by tuberculosis.

Try tilling the soil with the pots nearby. See how long it takes plant one of the seeds.

The fields are used to grow food for the cows.
Fertile soil is necessary to grow the proper food for Moo-Moo and the rest of the herd. Tractors and harvesters are used to maintain the fields.

Tilling the soil by hand takes a lot of time. With the introduction of the combine harvester and mechanized equipment to the American Farm School in the 1930s, the planting and harvesting process became much quicker.
Cows eat about 10 kgs of hay and feed every day.

The AFS has over 120 cows, so it needs to provide at least 1,200 kgs of hay and feed for the whole herd. The AFS has a special recipe for the food given to the cows everyday.

Can you guess which is moo-moo’s meal?

- NO This is dog food.
- YES!
- NO This is a gyro.

Which of the drinks comes solely from cows?

- NO Chocolate milk is made from cocoa and milk.
- Yes!
- NO Orange juice comes from the orange fruit.

Milking the cows has been mechanized to allow for easier milking along with more milk available. Here at the Milk Parlor, Moo-moo gets milked twice a day, once at 3:00 AM and once at 3:00 PM.

The Holstein cows at the AFS are ranked among the top 10% of herds in the entire world for production!
**Pasteurization eliminates harmful bacteria.**

Pasteurization is a very important process. Before milk is pasteurized, it contains high levels of harmful bacteria. Afterwards, the milk is safe to drink. The pasteurization process involves heating the milk to 74°C for 20 seconds to kill the bacteria, then cooling the milk down to 4°C for storage.

**The AFS brought pasteurized milk to Greece**

The AFS introduced milk pasteurization to Greece in 1935 with a small processing and bottling plant.

**Filtering and Homogenization Prepare Milk for Bottling**

After pasteurization, the milk goes through a series of steps to ensure the highest quality of milk is produced. These steps include filtering and homogenization, where the milk is cleaned and prepared for bottling.

In 2010, the AFS introduced a state-of-the-art Educational Dairy and Milk Processing Training Center on campus. This center has been producing innovative new dairy products, in addition to the award-winning milk.
A clean bottle gets filled with milk. The filled bottled of milk is sealed. Once Sealed, the bottle gets a label. The bottle gets packed into a group of 6 bottles. The bottling is an efficient process that is run by well-trained staff to ensure the quality of each milk bottle.