Aging with Identity: Integrating Culture into Senior Housing

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Aging with Identity: Integrating Culture into Senior Housing

by

Christine Sanchez

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Architecture
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Dedicado con amor a mi abuelo Juan Vega Lopez 1916-2007
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Aging with Identity: Integrating Culture into Senior Housing

Christine Sanchez

ABSTRACT

There is an underlying hope that those whom are elderly can exist in a place of happiness, comfort, security and familiarity; and can do so by aging in a place which complies with an understanding of their needs as older adults. However, along with aging comes a negative association of dependence and deterioration. Therefore, it is intuitive to have a connection between both the aging process and the design process. Creating a product which brings a positive association with senior housing and aging in place is the underlying goal within the project and overall design.

With the increasing population of those 65 and older, there is a higher need for the placement of individuals who can no longer live independently or those who do not have family available to care for them. More specifically, the views of caring for elderly within Latin American cultures have a highly negative connotation towards the placement of older relatives outside of their proper family home.

So how does the problem of increasing need for senior housing become solved with those who reject the idea of senior housing facilities and nursing homes?

In order to change the perception of senior housing within Latin America, there needs to be an element of identity and familiarity to the home. It is that sense of identity and familiarity which will produce a product of belonging and comfort that promotes a positive lifestyle within senior housing.

In order to directly address the Latin American culture, the proposed site will be located in an island which shares both United States values and views along with their own rich
culture and history. Designing within the tropical conditions and cultural traditions of Puerto Rico will give its elderly a new and essential residential typology. It is extremely important to choose an environment which is beginning to acknowledge the change in demographic and economy that requires a more positive form of assisted living facilities and senior housing.

Through a methodology which involves analyzing Puerto Rican cultural elements and conditions, the thesis will result into an understanding of cultural spatial traditions and customs. Accordingly, by taking these cultural conditions and implementing them into a senior housing program, it will bring a sense of home and place which is not found in the majority of elderly housing facilities within Puerto Rico.
According to the 2005 U.S. Census Bureau, the 65 and over population now exceeds 35.9 million and growing. The placement and secure living situations for this increasing population is in high demand. The psychological aspects of today’s elderly generation must be addressed specifically through the housing type design. Overall, there needs to be a genuine connection with both the aging process and the design process. However, cultural differences involving the placement and care of elder family members differ within various countries. Specifically within Hispanic Cultures throughout Latin America; there is a highly negative connotation with placing elderly into facilities outside of the family circle or home. Traditionally, family is the most important aspect of Hispanic cultures, it is a bond which can be seen as broken, if the family chooses to have someone other than a relative provide care. By selecting a site within Puerto Rico, an island which shares both United States values and views along with their own rich culture and history, it gives the opportunity to address the negative connotation of unfamiliar place and identity. Designing within the tropical conditions and cultural traditions of Puerto Rico will give its elderly a new and essential residential typology. The study of Puerto Rico’s traditional urban context and cultural characteristics will be influential within the overall programmatic spaces of the proposed senior
housing environment.

Through an innovative design method involving the identification and implementation of cultural interactive spaces with a senior living environment; it will provide a positive sense of belonging and familiarity to its residents. There is an underlying hope that the elderly can exist in a place of happiness, comfort and familiarity; and can do so by an integration of culture and sense of identity.

In order to introduce the thesis process, an interpretive exercise was assigned. The purpose of the study was to create a three dimensional construct which represented elements associated with the thesis subject matter. The words which represented the concept of ‘Aging with Identity’ specifically at the beginning of the analysis were the verbs: grow, journey, evolve and conclude. The construct shown on Figure 1.01, represents those words and associates specifically with the individual organic process of growth and development. Through the development of the three dimensional construct, it was important to create an object which held characteristics similar to those of the biological human growth. It was essential to create a kit-of-parts, allowing for no preconceived notion of the overall final form.

Wooden linear strips which joined and ‘grew’ organically at different points represented this notion of journey and evolution. Its conclusion includes the termination of the construct leaving just a few strips which extends towards the top. Much like the organic growth of the human, it was essential to create a representation of individuality and the growth process. The purpose of this study was not to design a form which could be associated with a built architectural form, its intent was to create an organic form which related specifically with an aging individual. In the end the construct created, became an expressive piece that symbolized the thesis concept in an abstract manner. Much like the construct, the first phase of the thesis project, focused primarily on how to design a final product with no preconceived notions in mind. It was important to take a problem and use the thesis process itself to reach a final conclusion. In that respect, understanding the user and the overall problem which needed to be addressed, were the issues which needed to become more defined. Identifying the problem, presenting a hypothesis and developing a methodology were the beginning stages of the thesis process.
2_Problem

The growing rate of the 65 and over population in Puerto Rico and abroad are experiencing an increasing demand and overall need for assisted living. Figure 2.01 depicts the population of those 65 and older in Puerto Rico, which makes up 11.2% of the total population. Figure 2.02 and 2.03 are graphs which illustrate and compare the changes in the 65 and older population within the United States from the year 1900 to 2050. The information on the graphs were recorded from the 2005 U.S. Census.

Ultimately, there is a need for this increasing demographic to find appropriate housing and care. However, the concept of placing elderly into facilities outside of one’s home is generally not favorable among Hispanic Cultures. Family is traditionally the main component which provides for each other and promotes the importance of togetherness. When a family member such as a Father for instance, reaches an
age where he can no longer care for himself independently, society sees it only fit that the Father’s children or relatives should provide primary care. Whether this involves moving into their Father’s home or bringing him into their home, family and identity play a large role. It is seen as the responsibility of his family members to take care of him and keep him around the people and environment which he identifies with the most. Therefore, there is a need for acceptable elderly housing which can simultaneously address the negative connotation with familiar programmatic spaces and elements.

Specifically, by locating the elderly housing facility within Puerto Rico, additional problems with the care of elderly arises. Puerto Rico is currently undergoing a demographic transition characterized by two phenomena: the island’s population is growing slowly through declining birthrate and aging rapidly at the same time (Lara). Studies in Puerto Rico indicate that the family remains the primary caregiver for older adults, says Melba Sánchez-Ayéndez, Ph.D., a professor of gerontology at the University of Puerto Rico and a member of the Advisory Panel on Aging and Health to the World Health Organization. “Ninety-eight percent of the elderly live in the
community; if home care services are provided properly, it is
definitely a preferable model to institutionalization,” she adds. About 2 percent of adults 65 and older live in long-term care facilities (Queiros).

However, the type of care one receives is strongly linked with socioeconomic status. Sánchez-Ayéndez explains that wealthy families need not depend on the government, but they account for less than 2 percent of the population (Queiros). Government support is available for those who are eligible, but services are often limited. The middle class, she says, is feeling the devastating effects of not earning enough to care for loved ones, but making too much to qualify for government aid (Queiros). Along with the demographic transition of Puerto Rico, the number of elderly who for generations stayed with family is beginning to experience a new trend of elderly placement.

However, the current nursing home facilities available to elderly in Puerto Rico consist of renovated homes which offer only the amenities available within a standard house such as; the bedrooms, living room, kitchen and bathroom. Often times the homes do not meet the standards issued through the Americans with Disabilities Act (ADA). In turn, this forces its residents to stay within the boundaries of the home. The only contact with the outside is from the balconies and porches in the front or back of the home which are gated from floor to ceiling for security purposes. Because this is only a recent approach to elderly housing in Puerto Rico, there has not been an exemplary prototype of elderly housing facilities such as those offered in the United States. Outdoor areas, large dining halls, activity centers and transportation services have not yet been introduced or implemented into Puerto Rico.

To further understand the problem of elderly housing and the lack of a familiar structure and substance, the diagram depicted on Figure 2.04 shows the growing need of the elderly population. It begins at the right showing how the elderly population are beginning to increase upward and therefore produces a need for more senior housing. However, the Hispanic elderly population has a strict desire to keep the idea of identity, familiarity and home shown to the left of the elderly population graphic. So as enforced in the diagram, through the infusion of a form of identity within senior housing, it will produce a final product which contains both components. Se-
nior housing combined with Identity are the two components which need to be infused together. Simply having a senior living environment within the Puerto Rico, does not identify the building as promoting Puerto Rican Culture. Although, the people, location and language represent the Hispanic culture it is placed in, there must be more in order to address identity to each individual. Each space that the residents associate with should provide a sense of famility along with interaction.

The overall problem forming the thesis could be broken down further: (1) There is an increase in the aging population. (2) In turn, this increase causes a need for senior housing. (3) However, there is a negative connotation towards placing elderly care outside of the home. In order to address the problem, a hypothesis must be presented. The hypothesis is used to address a solution to the problem as well as to narrow down the idea and set the tone for throught the project.

Figure 2.04 Diagram of the Problem
3_Hypothesis

By implementing a design method based on cultural analysis within senior housing, it will result into an acceptable assisted living environment which represents identity and reflects culture to its users.

It is through this belief of bringing identity through cultural spaces, that will in turn produce a successful typology for senior housing. At this point it is understood that the solution to the problem can be addressed by the design of a successful senior housing environment. But, what is it that makes a building, let alone a building suitable for senior housing, successful? The diagram shown on Figure 3.01 shows a visual representation of the hypothesis statement. Beginning at the left the hollow circle represents the senior housing itself. The smaller circle in the center represents the identity through culture that is currently lacking in senior housing. Finally, the circle to the right depicts the infusion of identity into senior hous-

*Figure 3.01 Diagram of the Hypothesis*
ing. Through the understanding of the hypothesis statement one can further derive that cultural identity, specifically in Latin America is what is lacking. By being able to bring identity and reflect culture, the product will bring an acceptance to a senior housing which promotes familiarity and belonging. Most importantly, it will be a typology that provides a smooth acceptable transition from a personal home to a shared home.

However, there are a number of layers to understand when designing for the aging community. It is not only the introduction of culture and identity that must be implemented into senior living. It is important to realize that the needs of the user must also be considered within the design process. The psychological effects and physical capabilities, in large part relate directly to successful senior housing. As the number of older adults’ increases, so does the necessity to better understand the physical and psychological affects of aging. Only through increased knowledge of the aging process can changes then be implemented to enable older adults to lead more fulfilling lives (Ade Ridder and Hennon 1). Through the understanding of the aging process can we then begin to establish the many places where older adults can live and prosper.

By beginning with the study of senior housing typologies, there is an opportunity to understand the diverse conditions, characteristics and programs involved within various senior housing types. However, by layering cultural analysis into the program of senior housing, it will bring an innovative component to how senior living is currently perceived. So the question then arises, how can culture be interpreted into a built form? There needs to be a direct method which shows how culture can become translated into a programmatic space or condition. This space must foster the memory and identification of self. In order to create a sense of identity to the user, there must be an understanding of the environment they come from. Studying the spaces which Puerto Ricans’ in particular interact and grew up in, are vital to understanding what creates the level of familiarity needed. Overall, the spaces chosen to be implemented into senior housing, must reflect culture and promote interaction. The spaces which most represent culture and interaction in Puerto Rico are what in turn will allow for identity and familiarity to be promoted. It is with the layering of many components that will create success.
4_Methodology

It is through a layering of four concepts that are intended to correspond to one another in order to inform the characteristic qualities of the overall design. As seen in Figure 4.01, they include (1) Cultural Diagraming, (2) Puerto Rican Vernacular Architecture, (3) Elderly Living Requirements and (4) The Existing Urban Typology.

It is highly important to note that one component alone cannot develop a successful prototype for senior housing. It is these four parts that make up the pragmatic and conceptual needs of a senior housing environment which sets out to promotes culture and identity.

The main design method of the four, is the concept of ‘Cultural Diagraming’. Cultural diagraming is an analysis of forms, spaces and activities found within Puerto Rico. It is a study of the visual manifestations and moments of interaction found within the environment. From those moments, a

1_Cultural Diagraming_Cultural Image ➔ 2D Diagram ➔ 3D Diagram ➔ Built Form+Space

2 Puerto Rican Vernacular

3 Elderly Living Requirements

4 Existing Urban Typology

Figure 4.01 Diagram of The Methodology
cultural image is developed which can then be depicted as a two dimensional diagram, a three dimensional construct, and eventually, a built form and programmatic space. Through the process of cultural diagramming the issue becomes a question of what cultural moments to analyze and translate. What specific elements of Puerto Rican culture should be implemented into senior housing and how? This phase involved creating a list of cultural moments which promote interaction and that could be translated into programmatic spaces. Eight archetypes which represented existing conditions in Puerto Rico were chosen. They are each spatial conditions most commonly found within Latin American cultures, in particular within Puerto Rico. Further explanation of the archetypes chosen are explained in chapter six titled, Culture. Figure 4.02 shows the diagrams of all eight archetypes: the porch, the plaza, the dominos, the street vendor, the cafe (food), la playa (the beach), the balcony and the residential vs. commercial typology. Figure 4.03 through Figure 4.06 show four of the archetypes as three dimensional constructs. Overall, method one uses the eight archetypes which define programmatic cultural spaces within the building design.
The second method concept used involves an analysis of the existing Puerto Rican vernacular architecture. In order to develop a modern architectural design interpretation and approach, the character of designing within a tropical Latin American culture such as Puerto Rico must be considered. The use of common building materials and typologies found in Puerto Rican building and landscape design must also be implemented to identify the existing vernacular.

The third method entails an in depth understanding of the design requirements and needs for the elderly. Not only is the goal to design a safe and comfortable living environment for elderly with psychological and physical disabilities; but it is also to develop a strategy which alters the common and often negative perception of assisted living. It uses active strategies to promote seniors who live with physical and psychological set backs.

The forth and final method concept focuses on using the existing urban typology. The site and context should and will influence the parti and respond to the urban setting. It will use the existing context of the Pueblo of Aguadilla to influence the conceptual direction of the overall building design.
The proposed site will be located in an island which shares both United States values and views along with their own rich culture and history. Designing within the tropical conditions and cultural traditions of the commonwealth of the United States; Puerto Rico will give its elderly a new and essential residential typology.

Choosing a Hispanic culture which embodies a need and desire of designing for their aging population was a very important research component. In order to have a successful understanding of Puerto Rican culture and place, it was essential to visit the site during the first semester of the masters thesis. Figure 5.01 highlights the island of Puerto Rico in correlation to the South East quadrant of the United States. A total of nine days during the second week of June 2008 were spent visiting the island of Puerto Rico. The journey lead me to five distinct cities (also known as pueblos in Span-
ish) within the island. The downtown pueblos and plazas of San Juan, Bayamón, Aguada, Mayagüez and Aguadilla were visited, documented and analyzed for site consideration. All of the five cities were studied particularly within the urban downtown. Due to the high level of activity and interaction available, the urban context proved to be a more appropriate location for a site intervention. More specifically, the pueblos are in close proximity to main plazas also known as squares. The purpose of visiting these cities were to witness first hand which location offered the most cultural interactions, views and variety, as well an opportunity for senior housing. Through the selection process the city of Aguadilla, located on the North West coast was ultimately selected. Figure 5.02 shows a map of Puerto Rico with the city of Aguadilla highlighted in orange. The strong connection between the urban plaza and the beach proved to be a great element which the other cities could not offer. The city planning existing and upcoming projects also provided great points of interest throughout the easily walkable downtown known as el Pueblo de Aguadilla.

Aguadilla, is known to have different names such as, El Nuevo Jardín del Atlántico, La Villa del Ojo de Agua and El
According to the 2000 U.S. Census of Population and Housing for Puerto Rico, the total population of Aguadilla contained 64,685 residents (4). The total number of households at that time were 22,087, with 5,811 of them housing individuals 65 and older (4). It was these statistics which showed the number of local residents who could possibly use a type of senior housing. The total area for the city of Aguadilla is 763 square miles with a land area of 36.6 square miles and a water area of 39 square miles (“Aguadilla, Puerto Rico”).

Figures 5.04, 5.05 and 5.05 are three types of site plans that show existing conditions. Represented from left
The beginning stages of site selection involved choosing the city and ward in which to develop the project. During the time spent in Puerto Rico, it was important to narrow down the final site selection from the five pueblos visited. It was crucial to select the specific area of investigation and interception. The site had to be located on at least one city block that had a relation to both the water and plaza. This relationship between the water and plaza was key factor in order to bring a connection between two iconic elements of Puerto Rican culture within the site. After visiting the pueblo location, a site was chosen which pertained to the preferred requirements as mentioned. Figure 5.07 outlines the specific site chosen on
the upper left corner in response to the central plaza. The close proximity to the plaza, which is highlighted in orange and the beach, located on the West can easily be noted. The final site which was chosen contains existing context which is shown on figure 5.12. The main goals designing within the city of Aguadilla revolves around keeping the characteristic architectural and urban design typology. However, it was important to remove the six existing buildings on the site in order to develop a functional community in its place. The plan was to ultimately keep the bottom edge of retail and commercial spaces when the new development took its place. The only portion of the existing site which will remain in tack was the newly added and renovated small kiosk plaza. The plaza

1. Abandoned Building
2. Finance Company
   Beauty Salon
   Baby Food Center (WIC)
3. Technical School
4. Beauty Supply Store
5. Children's Clothing Store
6. Private Offices
7. Small Kiosk Plaza
contains rentable kiosks as well as trees and bench seating throughout which provides a great existing public space to the site. Future occupants of the intended elderly housing facility would also have access to the kiosk plaza and could use it daily. The immediate building context in the Pueblo contained significant buildings that could be used by residents of the senior housing. Figure 5.13 shows a massing of the surrounding context in closest proximity to the site. Figure 5.14 uses the surrounding building masses and highlights the points of interest three dimensionally. Some of the main surrounding buildings that were considered points of interest were the Church, Library, Plaza, Public Transportation, Museum, Bank and Government Offices along with other types of commercial and office buildings.

The buildings were not the only part of the site studied. Puerto Rico has a very specific topography and connection with the earth, water and sky. It contains a luscious green landscape with rolling hills coming from the central portions of the island; smoothing out around the island’s perimeter as it reaches the beaches. Figures 5.09 through 5.11, contain images of the site’s topography. The arrows displayed on the three dimensional maps point directly to the area of the plaza. Figures 5.15 through 5.18 are models showing how the topography and site can affect the design of the building.

Figure 5.15 Site Edges

Figure 5.16 Points of Interest

Figure 5.17 Topography

Figure 5.18 Entry
Culture in a large part, is a way of life passed on from generations. It covers a vast array of beliefs, art, traditions and individuality. It is the visual interactions within the place that form elements of belonging to culture. Puerto Rico is flavored with a high contradiction and contrast, much like a blending of cultures and nations that to this date are not so easily pinpointed (Murillo 24). The rich traditions of today’s Puerto Rican culture have been created by a melting pot of cultural traditions stemming from early Spanish colonizers combined with the original Taino inhabitants and the African slaves brought to the island during the colonial period (Murillo 24). The cultural roots which have evolved from the mix of ethnicity within Puerto Rico are what make up many of the island’s customs and traditions. A strong use and appreciation for public and outdoor spaces are what bring community and tradition to the people of Puerto Rico. There is an overall sense of pride to one’s cultural association with their own food, activities, celebrations, art, music, dance, and overall way of life.
life on the island. In order to bring such moments and identity into elderly housing, there needs to be a selection criteria or process of what could be translated from cultural activity into built form.

In order to promote interaction, identity and memory, eight ‘moments’ caught in Puerto Rico will be used to analyze, interpret and diagram. Eventually, its purpose is to go from a documented image into a built programmatic element or space within the overall design of the elderly housing facility. These eight moments are visualized initially as photographs, which can be seen on figures 6.01 through 6.08. Each image represents an element related to Puerto Rican culture and character. All in all, the images refer to eight archetypes if you will. The archetypes become conceptual spaces that may be emulated within any senior housing specific to the Latin American culture. That is to say that by bringing the eight archetypes of The Porch, The Plaza, The game of Dominos, The Street Vendor, The Food/Cafe, La Playa (The Beach), The Balcony and the relationship between the Residential and Commercial building typology, into a housing for seniors; it would result into a positive sense of place and belonging for its residents. Public interactive spaces can flourish if placed accordingly within a project designed to promote identity and familiarity. Each archetype brings a different or complementary spatial condition. As the images were chosen, it was important to define further what they each represented.

The first archetype is the Porch seen in Figure 6.01. Porches known as a balcon in Spanish, are an important part of Puerto Rican culture and serve as a communal space for socializing and enjoying the outdoors. Figure 6.05 shows an example of a food cafe, Figure 6.06 shows La Playa (The Beach), Figure 6.07 shows the Balcony and Figure 6.08 shows the building type.
of many Puerto Rican homes. Among many residents of Puerto Rico, the presence of a balcony is a mark of respectability and worth (Jopling 70). Some porches provide a place to view and relate to the outside world (Jopling 70). Generally, the porch can be interpreted as the relationship between the individual and the street.

The Plaza is the second archetype seen in Figure 6.02. The plaza, is generally located in the heart of every city and even at a smaller scale within each city's wards. It is the central gathering point outlined with commercial, office, civic and religious functions. Often the plaza is furnished with benches, tables, landscape, sculptures and water features. It provides a daily interactive space for gathering and socializing.

The third archetype is the game and culture of Dominos seen in Figure 6.03. For the purpose of the thesis, the importance is not about how game is played, it is about the interaction is creates around a space. Mostly played in homes and plazas, dominos is a staple amongst Puerto Ricans. It is a traditional game which activates the mind and spirit to interact. Not only do the players partake in the activity, but the onlookers easily participate in the action and surround the domino table.

The fourth archetype is the Street Vendor seen in Figure 6.04. Street vendors are found alongside the many roads, highways, and parks throughout Puerto Rico. Everything from fresh produce to animals can be sold. Street vendors are highly accepted and unfortunately have been decreasing due to the large commercial businesses coming into the island. Therefore, it is vital to keep the tradition going and maintain the familiar interaction between the customer and vendor. In turn, promoting independence and exchange.

The Food is the fifth archetype and similar to the idea of the street vendor. However, rather than selling a product, it is the idea of gathering around the food which is most important. There is a unique distribution of food within kiosks and carts as seen in Figure 6.05. It is a place to gather and socialize over familiar foods. It is a moment to stop, sit and share a meal together even for a moment. The types of street foods range from typical ice creams and shaved ice, to rotisserie chicken and shiskobobs known as 'pinchos'.

La Playa, translated into English as the beach, is the sixth archetype seen in Figure 6.06. La Playa is specific to
the culture of living on an island. Finding an urban site which was in close proximity to the beach was needed to activate this archetype. Its purpose was to promote relaxation and reflection to the users. Using the beach as an opportunity to design for tropical conditions including wind breezes and cooling effects were a focal point.

The seventh archetype is the Balcony, seen in Figure 6.07. It is also called the balcony and is similar to the idea of the porch. However, the meaning and translation of the actual space is seen differently. Again, the porch is the relationship between the individual and the street. However, the balcony is the exterior interaction between the neighbors themselves. They can occur within inches or feet away from each other. Just like the spaces between them the sizes of the balconies can range from just a visual element to a space for hundreds. It is the balcony that will promote the interaction between the residents on a daily basis.

The final and eighth archetype is the Residential and Commercial Relationship. Seen in Figure 6.08, Puerto Rico is known for the two story buildings with commercial located on the ground floor and residential above. Seen in both the sub-urban and urban districts, this common moment needed to be addressed. It represents the vertical connection of the typical building typology found in Puerto Rico. Due to the location of the site, retail needed to be re-introduced to the street’s edge to maintain the existing character of the downtown. Therefore, it is only appropriate that the commercial spaces stay accessible to the ground floor, while the residential units of the senior housing grow above.

A large part of the thesis process and methodology involved taking these cultural moments and transforming them into built spaces within the senior housing facility. The order of the cultural diagramming as mentioned in the methodology section (chapter 4) began with the eight photographs seen in this chapter. After the archetypes were chosen and the photographs were taken, then began the two dimensional diagramming process. The diagrams can be seen in Figure 4.02. The next step was to create constructs of the cultural spaces which would diagram the 2-D image three dimensionally. Eventually the cultural moment captured, would be integrated into the senior housing program. The idea of representing culture as architecture becomes a process of interpretation.
The Process of Aging: Defining The Elderly

Case study one titled, The Process of Aging: Defining the Elderly is an observation and analysis on the biological process of aging. Its intention is to understand the concept of growth and evolution of human beings from birth to death. Ultimately, the goal would be to understand the specific attributes, if any, that characterize an individual as elderly. By understanding the components which make a human elderly, there can then begin to be a clear definition of who the specific users of assisted living facilities are. Through the human biological process of aging, at what point does an individual’s attributes categorizes them as elderly or in need of assistance? Biologically human individuals can be categorized as elderly when they reach a number of specific components involving age, physical constraints, psychological ef-

Figure 7.01 Diagram Describing the User
fects and individual perception.

Through human development one can begin the process of growth or aging. Aging is considered to be the change of an organism over time, through a combination of physical, psychological and social transformations (“Aging”). The process of growth and aging is often an ambiguous one. Each human grows and evolves independently both physically and psychologically. Aging is significantly influenced by an individual’s lifestyle circumstances and involves many variables.

Growth involves a series of changes, it is not just the notion of increase in size (Sinclair 1). Humans begin life as a single cell, the fertilized ovum (Bogin 18). The cell, then divides and grows, differentiates and develops into the embryo, fetus, child, and finally adult (Bogin 18). The interrelationship of growth, development and maturation can be used simultaneously but they each define the aging process slightly differently. Growth may be defined as a direct increase in size and mass quantitatively. Development is defined as a progression of changes from immature to mature. Finally, maturation is a form which measures the functional capacity of an individual (Bogin 18).

Within this study of the aging process, the intent is to focus on the characteristics and growth events which occur at the final stage of human development. Senescence which is correlated with old age is the state or process of aging and is characterized by the declining ability to respond to stress, increasing homeostatic imbalance and increased risk of disease. This irreversible series of changes inevitably results in death (“Aging”). There are various theories and suggestions about aging. As one ages, it has been recommended that the generalized deterioration of the body, manifesting itself in a progressive loss of vigor and an increase vulnerability to disease, may be due to loss or changes of multiplying cells (Sinclair 241). The effects of aging to the point of senescence can attribute to changes in an individual’s physical condition and psychological condition. Along with the physical and psychological, additional human traits which tend to change are one’s cognitive, sensory and social functions (Boyd). Factors which relate to disability include age, gender and socio-economic status (Boyd). This proves that age is indeed a large component to the high risk of diseases and disabilities faced by elderly.
Some of the most common diseases associated with physical disability include: heart disease, stroke, osteoarthritis, diabetes, cancer, visual impairment, depression and cognitive impairment (Boyd). There are four distinct stages which make up the progressive components of a disability.

Older adults not only face the affects of aging and disability physically, but often times the process of aging affect the elderly psychologically as well. There are a number of mental disorders found specifically within older adults. It is important to understand that although some mental disabilities might directly contribute to the aging process of senescence, others could have come from past events which occurred early on in life. It is not always certain who will be affected and when. However, there are three distinct components which pertain to successful aging. Individual’s who have (1) Low risk of disease-related disability, (2) High mental and physical functions, and (3) An active engagement with life are considered to age successfully (Rebok). When older adults begin to experience the unsuccessful affects of aging it can take a negative toll on their general state of mind. The most diagnostically challenging of mental disorders experience by adults, are depression, delirium and dementia (Rebok). Depression is considered to be the most common type of mental disorder. It is also the single most important cause of disability among mental disabilities. Emotional depressed moods or sadness, feelings of loss of pleasure, irritability and anger contribute to adult depression (Rebok). Delirium is characterized by a disturbance of consciousness and a change in cognition over a short period of time, which could usually last hours or days (Rebok). Dementia’s most common form is Alzheimer’s disease. It is a global deterioration of cognitive function in clear consciousness, typically progressive or irreversible. Impairments in memory and one other cognitive domain such as: language, word, disturbances of visual processing, constructional disturbances and disturbances in executive functioning, including abstract reasoning and concentration (Rebok). Some of the main factors which influence dementia are age, genetic influences and genotype (Rebok).

Three lectures on Health Issues for aging populations from the Johns Hopkins Bloomberg School of Public Health were used for the purpose of research. The first lecture from Dr. Cynthia Boyd MD, MPH titled Functional Capacity
and Disability discussed the main functioning components of physical, cognitive, psychological, sensory and social aspects which relate to elderly disabilities. The second lecture from Bruce Leff, MD titled Biological and Clinical Aspects of Aging points out the biological process the human body goes through during the time of frail senescence. It addresses the frail state of elderly and their battles with unintentional weight loss, weakness, slower pace, self exhaustion and low physical activity. The third lecture used as a research method is from George W. Rebok, Ph.D. titled Mental Disorders in Older Adults. This lecture focuses on the three main psychological disorders found in elderly; Depression, Delirium and Dementia.

It is critically important to understand the historical research methods of the biological stages of human growth. In order to design a living space, first comes the understanding to the needs and conditions of the user. Consequences of disabilities among older persons highly affect their quality of life. There begins to develop a dependency onto others. All which could possibly lead to hospitalization, admissions into nursing homes and ultimately death (Boyd). At this point is it crucial to understand who is considered elderly, and what specific disabilities or characteristics force them to take that next step into an assisted living facility.

Biologically human individuals can be categorized as elderly when they reach a number of specific components involving age, physical constraints, psychological effects and individual perception. In conclusion, age is merely a number which measures the amount of years an individual has lived. With age comes distinct growth developments that are universal to everyone. However, the manner in which humans age, are highly associated with the individual’s personal health, genetic background and susceptibility to disease. Physical constraints associated with aging such as the use of aids, for example; wheelchairs, walkers, canes, hearing aids and glasses all correlate to the stage of senescence. As the body deteriorates, humans become weak and frail and in need of assistance. Psychologically, individuals become vulnerable to a number of mental disorders and diseases as they age. Specifically, diseases which affect the cognitive sense and memory of an individual often relate directly to aging. Therefore, through the proper research there can be an underlying
definition as to who is considered elderly and at what point they may need assistance.

The purpose of case study one, was to understand further the process of aging. It assisted in understanding the needs of the older adults who will be using the final senior housing designed. However, the building cannot be intended solely for those considered as elderly. As previously mentioned, each individual ages differently. Therefore, it was most suitable to create a building that lets its residents age in place. As a result, an outline of what qualifies an individual as able to live in senior housing was developed. Figure 7.01 illustrates the method for defining the user. It states that an individual must be 65 years of age or older and in addition have one or more of the following development conditions: (1) Physical Impairment, disability or disease, (2) Psychological condition, or disease and (3) A personal desire or want of assistance. These criteria were developed in order to better define the needs and abilities of the user. The next step entails understanding the type of facility most suitable for the user. Researching the existing typologies and perhaps creating a new standard for senior living within Latin America.

Senior Housing Typologies: Defining the Type

Case Study Two, is titled Senior Housing: Defining the Type. Since today’s society has had a custodial orientation toward the aged, adult care facilities has become one of the most accessible sources of medical services for the elderly (Tobin and Lieberman 1). There seems to be a greater need of older adults who choose to no longer live in their current home or community. As well as a large number of those who are unable to live with a family member, friend or caregiver. Therefore, there begins to surface a various number of living alternatives available to the aged. The Help Guide published by the Rotary Club of Santa Monica and Center for Healthy Aging, offer specific explanations of the most common living options for today’s elderly:

Independent Living

Among the many senior housing options available, Independent Living provides the greatest versatility and freedom (Russell et al.). Independent Living for seniors refers to residence in a compact, easy-to-maintain, private apartment
or house within a community of seniors (Russell et al.). As the name implies, Independent Living is just that: the ability to maintain one’s residence and lifestyle without custodial or medical assistance. If custodial or medical care becomes necessary, residents in Independent Living for seniors are permitted to bring in outside services of their choice. The physical structure of Independent Living facilities is quite diverse. Most Independent Living units include small kitchens, and some communities also offer communal areas to dine and interact.

Assisted Living
An Assisted Living Facility provides care for seniors who need some help with activities of daily living yet wish to remain as independent as possible. A middle ground between independent living and nursing homes, Assisted Living Facilities aim to foster as much autonomy as the resident is capable of. Most facilities offer around the clock supervision and an array of support services, with more privacy, space, and dignity than many nursing homes. (Russell et al.) An Assisted Living Facility helps seniors with personal care such as bathing, dressing, eating, grooming and getting around. Daily contact with supervisory staff is the defining characteristic of an Assisted Living Facility.

Skilled Nursing
A Nursing Home, also known as a Skilled Nursing Facility or SNF, has Registered Nurses who help provide 24-hour care to people who can no longer care for themselves due to physical, emotional, or mental conditions. A licensed physician supervises each patient’s care and a nurse or other medical professional is almost always on the premises. Most nursing homes have two basic types of services: skilled medical care and custodial care. Skilled Nursing Facilities provide a private or shared room with a private or shared bathroom. Some Nursing Homes allow couples to stay together, and some may even allow pets. With the emphasis on patient care, the general ambiance is a sense of “home.” (Russell et al.)
Continuing Care Retirement Communities

(Continuing Care Retirement Communities (CCRC) allow seniors to “age in place,” with flexible accommodations that are designed to meet their health and housing needs as these needs change over time. Residents entering Continuing Care Retirement Communities sign a long-term contract that provides for housing, services and nursing care, usually all in one location, enabling seniors to remain in a familiar setting as they grow older. Many seniors enter into a CCRC contract while they are healthy and active, knowing they will be able to stay in the same community and receive nursing care should this become necessary. Seniors who invest in a Continuing Care Retirement Community have adequately planned for housing and care for the remainder of their life, and have the financial means to support it. Continuing Care Retirement Communities offer service and housing packages that allow access to independent living, assisted living, and skilled nursing facilities. Seniors who are independent may live in a single-family apartment or condominium within the Continuing Care retirement complex. Seniors who choose to live in a Continuing Care Retirement Community find it reassuring that their long-term care needs will be met without the need to relocate. One of the major advantages of a Continuing Care Retirement Community is the option to move between the available housing environments as one’s needs change (Russell et al.).

By studying the existing elderly housing typologies, one can begin to understand the uses and needs for each type of facility. However, there needs to be a balance with more than just the types of senior housing available. There must be an overall comparative study of elderly living environments and options in correlation with the aging perspective. The placement and secure living situations for this increasing population is in high demand. The psychological aspects of today’s elderly generation must specifically be addressed.
through the housing design type. In general, there needs to be a genuine connection with both the aging process and the design process.

According to Professor George W. Rebok, Ph.D. from the Department of Mental Health at The Bloomberg School of Public Health, there are three ways in which an individual can age successfully. First, by having a low risk of disease and disease related disabilities; Second, by maintaining high mental and physical functions; and Third, by keeping an active engagement with life (Rebok). Once individuals leave their past homes and customs behind, they have no choice but to move on into their new environment. Creating a sense of place or home in a new location can have a significant impact on the individual psyche. But, what exactly helps those to adapt in a world where their independence and familiar community has been re-rooted? Overall, care is increasingly becoming an architectural challenge. The conventional home for the elderly has served its turn and is being replaced by more modern arrangements combining both living and care functions. In this type of environment, people preserve their independence as much as possible and apply for the enabled care services when needed. Architects need no longer restrict their plans to functionality, efficiency, and economic profit. They must integrate social aspects as well” (Haag). There is an underlying hope that the elderly can exist in a place of happiness, comfort and security; and can do so by becoming aware of one’s most appropriate living typology and design.

The type of housing to be implemented into the building design, would promote an aging in place typology. Aging in place is essentially the same type of housing described as a continuing care retirement community also known as a CCRC. The three distinct types of elderly care will include; Independent living, Assisted Living and Skilled Nursing. The site of the senior housing complex is located in the Pueblo of Aguadilla, which has a large amount of residential homes in the vicinity. Therefore, in addition to independent, assisted and skilled nursing, the housing complex will also have an adult day care component. Older adults who live within walking distance to the site don’t have to leave their homes behind. Instead, local residents aged 65 and older can become part of the program and participate in the daily activities available.
8_Precedent Studies

In order to begin the programmatic design process, it was necessary to understand the relationship between the numerous required spaces within existing senior living facilities. The three facilities which became precedent studies as part of the thesis project were Precedent a, the Rosewood Estate, Precedent b, Jan Van Der Ploeg and Precedent c, Solgard Local Nursing Home. Each of the three facilities used unique floor layout design concepts in order to detract from the usual institutional style nursing homes. The main floor

![Color Key for Precedent Analysis](image)

Figure 8.02 Color Key for Precedent Analysis

![Programatic Analysis](image)

Figure 8.01 Programatic Analysis of 3 Elderly Facility Precedents (Regnier 76, 129, 134)
plans of each building were first diagramed. Next, a coloring system was overlaid within each of the main programmatic spaces. Figure 8.02 shows the nine programmatic spaces of; the residential unit, communal spaces, administration, storage, health, kitchen, landscape, vertical circulation and entrance. These diagrams allowed for a clear understanding of the program location. Nine of the most common program components are highlighted in each of the three floor plans shown in figure 8.01.

Through the diagramming process, relationships between the main program spaces were compared amongst the three floor plans. The residential units colored in light blue, were all placed in a linear grouping pattern along one side of the building. Precedent study a and c showed the majority of the community/communal, colored in yellow, intermixed within the residential units. Similarly, the communal space in precedent b is represented as a garden space outside of the residential units. Precedent b located its internal community/communal space to the right side of the complex. The administration, colored in red, generally is located either immediately of the entrance or of short walking distance from the entrance. Storage spaces, shown in brown, amongst the assisted living facilities vary. While precedent b has a large section devoted to resident and building storage, precedent’s a and c do not. Some facilities may keep the amount of personal belongings to a minimum, allowing residents to use the storage available within their rooms. Health services, shown in orange, such as nurses stations or physician offices also varied in size and location. Depending on the specific user of the building; independent, assisted, or skilled nursing; the amount of health staff and space would vary. Spaces devoted to health, can offer a range of services from physical therapy to counseling. The kitchen spaces, colored in dark blue, were kept to the opposite side of the residential spaces. They each offer additional communal spaces within the surrounding area. Landscape, colored in green, was only featured within the building for precedent b. The landscaper was used as a large communal courtyard space in the center of the facility. The points of entry and any vertical circulation was also noted on the diagrams. It was important to determine the entry point as a unique area greeted with a communal space. Overall, all three precedents assisted in possible program placement.
The building program is broken down into two parts. First is the regulatory standard requirements needed for assisted living facilities, Independent Living facilities and Skilled Nursing Homes. Programmatic elements such as residential units, health services, administration, support and community spaces must be further developed in order to create the necessities required for a successful senior housing. Preliminary bubble diagrams as seen in Figure 9.01 were done to create relationships between the required programmatic spaces. The shaded blue circles represent the three different residential living components required for an 'aging in place' living facility. Aging in place living units are used as a strategy to bring a fur-
ther sense of familiarity to the user. Residents with ranging needs from independent to a full need of assistance, are able to live and prosper with the building program. Each residential unit, must hold a relationship not only with each other, but also with the communal and in-between spaces needed for maximum interaction and involvement. Opportunity for personalization and identity are also promoted within the development of each residential unit.

The second building program part is the layering of the cultural spaces placed throughout as seen conceptually in Figure 9.02. The eight archetypes must now find a ‘home’ within the boundaries of the site. It is vital at this point in the thesis process to understand that although the building is not designed, there must be a connection with the layout of cultural spaces. Each space ranges in size, location and function just as the various archetypes that were chosen. Figure 9.03 and Table 9.01 show the initial possible program spaces for the senior housing facility. As the project began to take shape the program chart began to minimize and maximize as well. The final list of program spaces found within the overall design are given in chapter eleven, titled Final Design.

<table>
<thead>
<tr>
<th>Table 9.01 Program Chart</th>
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<tbody>
<tr>
<td>I. Outdoor Community Spaces</td>
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<tr>
<td>Plaza</td>
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<td>Café</td>
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<td>Grand Porch</td>
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<tr>
<td>Gazebo</td>
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<td>Pool</td>
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<td>Gardens</td>
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<td>II. Indoor Community Spaces</td>
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<td>Large Dining</td>
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<td>Small Dining</td>
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<tr>
<td>Art Room</td>
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<td>Game Room</td>
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<tr>
<td>Fitness Center</td>
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<tr>
<td>Performance Center/Theatre</td>
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<tr>
<td>Barber/Shop/Salon</td>
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<tr>
<td>Bank</td>
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<td>Laundry</td>
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<td>III. Residences</td>
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<tr>
<td>Assisted Living</td>
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<tr>
<td>1-2 bedroom with Bath</td>
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<tr>
<td>Independent Living</td>
</tr>
<tr>
<td>1-2 bedroom Apartments</td>
</tr>
<tr>
<td>24-Hour Care Living</td>
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<tr>
<td>Room with Bath</td>
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<td>IV. Health Care</td>
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<td>Nurses Stations</td>
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<td>Offices</td>
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<td>Physical Therapy</td>
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<td>Psychological Counseling</td>
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<td>Lobby Space/Waiting</td>
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<td>V. Administration</td>
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<tr>
<td>Administrator Office</td>
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<td>Residential Admissions</td>
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<td>Reception Area</td>
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<td>Staff Offices/Workspaces</td>
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<td>Staff Lounge</td>
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<td>VI. Support</td>
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<td>Records</td>
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<td>Maintenance</td>
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<td>Kitchen</td>
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<td>Residence Storage</td>
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<td>Facility Storage</td>
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<tr>
<td>Trash Collection</td>
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<td>Shipping + Receiving</td>
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At this stage of the thesis process, the introduction of possible building schemes begin to take shape. The initial schematics of the overall building, are influenced by the existing site conditions. Figure 10.4 is the main parti diagram showing the importance of the beach, site and plaza. The parti diagram depicts a connecting arm that rests on the site and extends from the urban plaza to the water. It is this image that represents the main directional pull between the water and land. The connection between the beach and the plaza must be present and consistent throughout each schematic design.
The three dimensional images shown in Figures 10.01 through 10.03 depict the existing immediate context around the site. The blue walls represent the edge and character of the street facades. Understanding the importance of keeping the downtown character consistent is a priority with designing in an urban setting such as Aguadilla.

After the parti was developed, three distinct schematic concepts were devised. Using the main parti and site as the driving force, each schematic began as a diagram. The next step was to further evolve the schematics into physical models. It is the connection of the plaza and beach which create the diagrams and forms for the three various schematic partis’ seen in Figure 10.05 and Figure 10.06.

Each parti was developed from a two dimensional image to a three dimensional conceptual construct. To better understand the massings on each model, a coloring system was implemented. The residential components in the models of Figure 10.06 are colored in white. The communal area to be shared by the residents are colored in orange. The public spaces which respond to the general public are colored in tan.
and remain on the ground level.

Each of the three schematic concepts were then developed further into three-dimensional computer format. They were explored in three-dimensional software in order to find the spaces where the programmatic cultural conditions could flourish and respond within. The archetypes which were chosen during the methodology phase are now beginning to find shape within the adult communal and interactive spaces.

Each of the schematic options were labeled as Schematic one, two and three. All of the schematics went through a quick design process to understand how the cultural spaces would work within them. They were each developed to show at least two of the eight archetypes, an overview of the building, and an exploded axo.

Schematic one, seen in Figure 10.07 and 10.08, had finger-like residential units which extended over the large communal space. Figure 10.07 shows the how the street vendor archetype would be interpreted within this scheme. It also shows an overview of the project on the site in the upper left corner. Figure 10.08, shows a perspective of how the balcony

![Figure 10.09 Schematic Two Perspective Cultural Space](image1)

![Figure 10.10 Schematic Two Perspective Cultural Space](image2)
would be translated into a cultural space, as well as an axo of the overall building. Similarly, Figures 10.09 and 10.10 show how the cultural spaces would work for schematic two. The archetype of the porch and the residential and commercial typology were created in the perspective.

In order to decide which of the three schemes to develop further, the analysis process had to occur. By building three models simultaneously, it helped to look at the possibilities for successful cultural spaces. Ultimately, schematic three was chosen. The overall form of the building represented the connection to the water and plaza the most. Additionally, the placement of various residential units along the North allowed for spaces between the residences. Figures 10.11 through 10.16 show perspectives of the chosen schematic. As seen in Figure 10.11, the design contained four main building components. From top to bottom, the various sized blocks represent the residential units. The pieces mimic the existing buildings throughout the Pueblo. The second component is the large solid orange block which represents the communal space for the residents. The communal space will serve to function the main dining room, seating, and activities for the facility. The
following component is the linear angled transparent piece. Its purpose is to serve as a corridor through the building and site. This is one of the main parts which keeps the access between the water and plaza constant. The fourth and final component of the axo is the public space on the ground floor. Its purpose is to continue service to the outside public as well as the residents themselves. Retail shops are to maintain along the street’s edge in order to maintain the character of the downtown. Figure 10.12 shows a schematic perspective of how the building would relate to the surrounding site context. The beginning parti is still visible as the building follows the connecting angle.

Schematic three was initially able to produce four of the eight archetypes into cultural spaces. Figures 10.13 through 10.16 depict where and how the spaces would occur.
The next step after selection of schematic three, was to explore the design further. A larger scale model of the building design was made to understand the spaces previously created. Orange spheres were inserted throughout the model to show where the eight cultural spaces could possibly occur. Figure 10.17 and Figure 10.18, show photographs of the models. Again, the large orange block centrally placed, is the communal space for the residents. The strip shown in the center of Figure 10.17 is the main connector that promotes pedestrian movement and interaction.

Throughout the Thesis I and II semesters the schematic design began to evolve even further. As the program and square footage became more defined, the building had to contract and expand in order to work most appropriately. Figures 10.19 and 10.20 took a step back into developing the idea of the three residential units folding into the communal space. One of the main changes occurred when the number of residential buildings were reduced to three. Independent living, assisted living and skilled nursing each were given a residential tower. As seen in Figures 10.21 and 10.22, the building has evolved rather distinctively. The main retail
shops are still maintained on the South ground level. Directly above the retail spaces is the large communal space which wraps around a majority of the building. Figure 10.22 shows the communal space in a gray chip board material. The residential towers have varied in form and now contain the many needs for aging in place. Due to the square footage requirements of senior living bedroom units, the number of residential units had to change. However, the change proved to be a positive one, as now the independent, assisted and skilled nursing residents have their own sectors. As the schematic began to evolve into a building, it was on to the final stages. Developing the final design occurred in the second thesis semester. It was time to take the ideas and turn them into architecture.
Figure 10.21 Evolutionary Model One

Figure 10.22 Evolutionary Model Two
The final design of the thesis project began at the start of the second semester of thesis. The overall schematics had previously reached a state of completion. The next step was to further develop the overall building form and space. Most importantly was the need to address the main methodology and hypothesis which was initially researched.

Before the project could be continued, it was necessary to go back and develop a building concept. Although, the concept of integrating culture into housing was still the main driving force; the building itself needed a concept. The diagram shown on figure 11.01 is the building concept diagram used to inspire the project further. It explores the idea of creating a line of both connection and security between the residents and the public. Essentially, there are two components; the internal residential and the external public. Between the two there needs to be a secured interaction. The secured
interaction will allow for the public to interact with the residents without putting their safety at risk. Figure 11.02 shows the same building concept only diagrammed into the building parti that was previously created. The secured interaction now becomes the main corridor for circulation and connection throughout the site. Floor plan diagrams shown in Figure 11.03, were made to understand the spaces throughout the design. The diagrams shown, outlined exterior interaction spaces, exterior views, and communal vs. residential diagrams within the working floor plans. Defining opportunity for views and interaction was essential in creating a successful senior housing environment. All types of moments for interaction needed to be address. Large, Medium and Small spaces for seating and gathering were defined using the diagrams on Figure 11.03.

The most important layer was the placement of the eight archetypes. They each needed to be implemented into the final overall building design appropriately. The best way to display the cultural spaces was to format the title, definition, axonometric, and perspective into a packaged visual product. Each archetype is given a number, name and main descrip-
In order to comprehend the location of each cultural space, it had to be represented clearly. Each archetype is shown in plan, as a perspective within the building and highlighted through an axonometric of the building.

The first of the eight archetypes was the porch, seen in Figure 11.04. The porch is intended to be the place of interaction between the street and the residents. Therefore, it was placed in the ‘front’ of the building, that is to say, the building facing the ocean. It is a covered exterior space which opens up to views along the street’s edge.

The second archetype translated into a cultural space
was the plaza, on Figure 11.05. The plaza is located on the rooftop of the communal gathering space. One of the main features of the plaza is that it overlooks the existing plaza of Aguadilla as well as the Atlantic Ocean. A large overhang was also provided to allow for shading on the rooftop level.

Dominos is the third archetype seen in Figure 11.07. It is located on the ground level adjacent to the building entrance. It allows the public to interact with the shaded space and gives its residents a familiar activity to participate in. By placing the domino tables and chairs in an exterior location, it invites both residents and the public to use the space.

The fourth archetype envisioned into built form was the idea of the street vendor. As seen in Figure 11.08, the
street vendor took the place of the existing kiosks. By choosing to keep the kiosks on the North end of the site, it opened the kiosk plaza even further to those passing by the site. The domino archetype is immediately across the kiosks in order to keep the area active and entertaining.

The food is the fifth archetype depicted in Figure 11.10. It is located in the corner where the communal component drops down and touches the ground. It is represented in the form of a cafe. Similarly to the food vendors, the cafe is located immediately along the street edge. It features a window for ordering and seating along the sidewalk. By including a service window and shading seating area, it resembles the personal interaction that a food vendor would emulate.
La Playa, also known as the beach, is archetype number six and seen in figure 11.11. The playa is the actual element of the beach. In order to incorporate the beach into a built form, an extension of the senior housing was added. The function of the building extension is to serve as a cabana and exterior workout area for the residents. Hammocks and seating furnished the beach side as to promote relaxation, reflection and cooling.

The Balcony, labeled archetype number seven, is shown in figure 11.13. It is a place of exterior interaction between neighbors. The main balcony occurs above the retail shops. However, there is a more important internal form of the balcony found between the residential units. A perspec-
tive of the balconies between the residential units and garden spaces, can be seen in Figure 11.39.

The final archetype is the residential vs. commercial vertical building typology connection. Figure 11.14, shows the perspective of the retail along the street edge. It was important to translate the vertical connection between the commercial below and the living hovering above. By doing so, residents are able to access the retail shops internally as well as monitor the public interaction below.

To further understand the final building components of the design, an exploded axonometric was created. The exploded axonometric on Figure 11.16, depicts from top to bottom the main componential elements that make up the building's form. Beginning at the top is the main entry and family center. This component is brought to the corner of the site allowing for a clear visual point of entry from the existing plaza. The following layered elements represent the floor plates of the three main residential building units. The plate to the center left is the extension which crosses the street to the beach end. The large orange component is the community space shared mainly by the residents. Large gathering and
activity spaces are held here. The cubes on the lower right are the existing kiosks that were kept. The component on the bottom contains the five retail shops lined along the street.

The final overall site plan can be seen in Figure 11.17. The overall massings of the building maintain the character of the existing surrounding buildings. They read as pieces with slight slivers of in-between spaces contained in a city block. The character was kept in tact as the building became a part of the existing urban fabric of Aguadilla. Additionally, it was essential to maintain the connection between the water and plaza that was explored initially in the schematics phase. The connection between the water and plaza happens clearly on the ground level. The connection is in the form of a courtyard that is open to the sky above. This exterior/interior courtyard is the element itself that promotes the secured interaction between the residents and the public. The main point of entry into the site and building itself, happens at the South East corner of the block. A perspective of the point of entry can be seen on Figure 11.18. Residents and the public alike are greeted with a two story glass entry. A metal roof system folds into the building to allow for shading and building sign. The
name of the building C.D.A., stands for Centro De Ancianos. C.D.A. is translated into English at Center for Seniors. The large communal space in orange adds a sense playfulness and identity to the building corner. On the ground level to the right of the entry is the domino cultural space that pulls the public into the site.

Figure 11.19 is taken from the interior of the point of entry. This perspective illustrates how the internal secured interaction occurs. Immediately upon entering, users are greeted with staff on the right side of the courtyard. Residents are able to feel secure as they are protected by staff and a secondary internal point of entry into the senior living area. On the right side of the courtyard, an internal entrance to the retail shops are easily accessible. Seating and planters promotes moments of rest and interaction within the courtyard. Perhaps, the most exciting element of the courtyard is that it is open the elements. It allows natural sunlight and ocean breezes to permeate throughout the courtyard. Catwalks and internal balconies give the building and its residents a sense of openness and awareness of surrounding.

One of the main elements associated between the
public and the residents is the commercial retail shops. The public’s entry is located along the street edge. The entry to the residents can occur either from the internal courtyard, or depending on their ability from the public street side. Additionally, spaces to enter into the courtyard are also placed in between the retail shops to allow for transition and circulation. The shops chosen to lie within the senior housing were significantly programmed. Each of the five retail shops had to occupy a program which could address both the public visitors and the senior residents. The commercial spaces arranged from left to right are; a small grocery store, a laundry mat, a doctor’s office, a hair salon and finally a post office. All of the programs promote use by the aging adults within the facility. Senior residents are able to feel more independent as they are able to do participate in everyday tasks. Opportunities to check their mail or even do their own laundry promote interaction and sense of independence. By having such commercial spaces on site, residents are not required to depend on transportation or necessarily others to perform tasks.

Detailed floor plans had to be developed in order to understand the micro scale of the building as well as its spatial qualities. Figures 11.21 through 11.24 on the following pages show in specific detail the final spaces within the senior housing facility. As noted in Figure 11.21, the first floor plan shows the building in relation to the site. The residential units are kept in the Northern end of the site adjacent to an internal gathering space. Nurses stations and administration are the boundary which forces the point of security. The next layer is located directly at the center and is the internal courtyard system. The main lobby on the South East welcomes visitors and residents alike. The cafe and retail shops line the South end of the building allowing for seating and shaded spaces for resting. The vertical circulation in the form of stairs and elevators are mainly reserved internally for the use of residents and approved visitors. Nurses and staff at the center of the secured interaction space have the task to register visitors and allow them entrance into the senior living areas. Visitors from the public are able to access the courtyard, main lobby, commercial spaces, family center, and public balcony. Figures 11.22 and 11.23 show the residential units recessed further to allow for more shared views and communal spaces. The following floor plans can be viewed in further detail.
Figure 11.21 Floor Plan One
Figure 11.22 Floor Plan Two
Three sections were taken throughout the final building design. The sections are shown in Figures 11.25 through 11.27. In order to see where the sections cuts occurred, please refer to Figure 11.06 in this chapter. Section cuts are used to understand the internal qualities of the building. They show the relationship between spaces and the surrounding street.

Elevations of each side of the final building were also created to better understand the building’s exterior qualities. The South elevation seen in Figure 11.28 clearly shows the linear orange communal space. The openings on the wall, allow for views and light entry. The component represents a celebration of community and culture in a playful manner. The commercial units can also be seen at the street level below.
the communal element. The East elevation is the main point of entry from the side of the plaza. Figure 11.29 shows how the entrance, domino area, and kiosks relate on the street level. Above the domino area, are the family center, communal dinning area and covered plaza space. Relating back to the entry component from the exploded building axonometric.

The North elevation shown in Figure 11.30 shows the relationship between the residential units. From right to left, the residential units consist of independent living, assisted living and skilled nursing. Each residential tower, holds a garden space in between to allow for an exterior connection amongst neighbors. The West elevation shows the facade facing the ocean in Figure 11.31. Plenty of exterior railings and gathering spaces allow users to enjoy the ocean views from the ground level up to the exterior roof plaza.
Three types of residential units promoting aging in place were integrated into the senior housing program. Independent living, assisted living and skilled nursing were all used accordingly.

Residents who are considered senior citizens but able to live independently, have an option to live within the senior housing facility. There are a total of seven independent living units at approximately 600 sq. ft. Figure 11.32 contains an interior perspective and plan of the independent living unit. It contains a private bedroom, bath, closet, full kitchen, living room and dining area.

The assisted living unit in Figure 11.33 contains a bed, shared bath dresser, seating and kitchenette. Each of the eight units average about 230 sq. ft. each. Windows beside the room entry, allow for the opportunity to display personal items in order to promote individuality and identity.

The skilled nursing unit is the smallest at about 150 sq. ft. It features a bed, communal bath, dresser and seating. Large windows open to the communal garden space allow for a visual interaction with the exterior as depicted in Figure 11.34.
The final overall building is less than 50,000 total sq. ft. and in addition to residential units it contains spaces for; administration, support, maintenance, kiosks, cafe, grocery, laundry mat, doctor’s office, salon, main lobby, health services, family center, bookstore, kitchen, large dining, shared community spaces, art studio, dance/activity space, small library, computer lab, roof top plaza, and beach side cabana.

Maintaining the cultural character of the final design entailed understanding the common materials used in buildings of Puerto Rico. Figure 11.35, shows a perspective of the overall building, highlighting the materials and concepts used. There are two main types of roofs used in Puerto Rican residential homes. Flat concrete roofs are most common and are used mainly throughout this project. Pitched roofs built with metal sheets or tiles are also common and promote good ventilation (Jopling, 71). The roof over the entry component is a folded metal sheeting which refers to the Puerto Rican vernacular. Railings in the Puerto Rican vernacular are often made of concrete or wrought iron. Similarly, the railings of the final design are made with a combination of wrought iron rails.
and concrete inserts. The inserts are spontaneously spaced in between the wrought iron bars. Some of the concrete pieces are colored to resemble the playfulness given by the large orange walls of the communal space.

In relation to the large communal space just previously mentioned, its use of bright color comes from the existing vernacular. Puerto Rico tropical homes and buildings can usually be found painted a vast array of bright colors. This use of color that is common in Puerto Rican and tropical architecture alike had to be incorporated in one form or another. The circled image title ‘color’ in Figure 11.35 shows a perspective of a street in Old San Juan. The image enforces the use of various bright colors within the buildings of Puerto Rico. In addition to the use of color for the large communal piece, tile was also incorporated. The use of tile in the urban downtowns of Puerto Rico are also very common. Cladding the facades of the buildings on the first level eases the task of maintenance. Because most buildings are located in such close proximity to the street, it is susceptible to dirt and exhausts. Therefore, tile is used to allow for easy cleaning. It is a better alternative to paint with peels especially within the humid climate of Puerto Rico. The overall idea of keeping identity and culture throughout the building is still in effect. By using elements, materiality and common traits found within the vernacular; the building brings familiarity and identity to the user. These materials can have a positive effect to those residents who relate to the use of materiality they are familiar with.

A perspective of the residential side of the building can be seen in Figure 11.36. The residents are able to use the large green space available to them on the North end of the site. It contains plant material and palm trees that normally fill the islands natural vegetation. The green space is also introduced to the existing kiosks and residential garden spaces.
Communal Interaction Spaces are a large part of senior housing. Not only are the cultural spaces programmed throughout, but so are various spaces intended for interaction. Three of the most important communal interaction spaces are shown through perspectives in Figures 11.37 through 11.39.

In the front porch, residents are able to gather towards the center of the courtyard in order to share the main connector view towards the ocean. The perspective of the porch, which is one of the archetypes can be seen on Figure 11.37. Various forms of seating allow for a variety of interaction. The main porch faces the beach providing a conceptual front for the building.

The family kitchen seen in figure 11.38, allows family members and friends of the residents to share a ‘home-like’ environment. Guests are able to cook family meals together and celebrate holidays, birthdays and special events in an on-site location. It allows family member and friends to promote culture on a more personal level, through traditional foods and the importance of family.

The residential gardens are shown through a perspective on Figure 11.39. The in-between spaces found within the
residential units allow for the opportunity of a garden space. The gardens can be accessed directly from individual units to the outside. The balconies on the third and fourth floors are in close proximity with each other. This closeness is intended to promote the positive interaction and relationship between neighbors. Additionally, residents are able to place plants and seating outside their doors in order to identify their personal spaces and entry. It was important to highlight a few of the spaces intended for interaction. However, it is also important to note smaller moments for interaction such as the seating located in the corridors between the residential units. Exterior gathering spaces such as the bench in front of each commercial space can be seen in Figure 11.40. The photograph shown is the final section model. The purpose of the model was to show materiality and spatial quality at a larger scale. The section cut shows the lobby, large communal gathering space, family center, commercial spaces, internal courtyard, roof top plaza, nurses station, reception, and dining hall.
In all, three different models were made for the final building design. As mentioned, Figure 11.40 was the large scale section model that showed the detailed elements of the point of entry. The second model created was the entire site model seen in Figures 11.41 and 11.42. The model featured the site conditions from the residential filled hills to the water’s edge. The immediate surrounding buildings were also massed to see the character of the downtown urban fabric. A model of the overall building design made of white museum board popped within the sea of wood. The site model allowed for one to see how the overall building would work in the existing site conditions.

The third and final model built was that of the overall final building design. The communal space component was again given hierarchy with the orange tiled surface. Being that this element served as the main point of interaction and gathering amongst the residents, it had to stand out. Figures 11.43 and 11.44 are photographs of the final model scaled at $1/6" = 1'$. It contains not only the final building, but also the kiosks as well as the extension piece that crosses to the side of the beach.
Figure 11.43 Overview of Building Model

Figure 11.44 South End of Building Model
In conclusion, a year of research and designing for senior housing has been brought to a point not of termination; yet, rather a point of transition. A transition that will hopefully, lead myself and others into further exploring how architecture can create spaces which respond to the individual. Creating moments which bring a sense of culture and identity to the user is indeed possible. However, it is the user’s interpretation of the space that can bring them familiarity and memory.

The thesis journey began with the statement of a problem. The problem was to address the increasing demand for the secure living and care of older adults. The goal was to discover and learn not only how to create a positive living environment through design, but, to also improve the living standards for senior housing. As the project progressed, it became evident that the need of senior housing dealt with a second problem, specifically within Latin America. This problem was the lack of Latin American approval towards placing its seniors into assisted living facilities.

This different angle helped to guide the thesis into a new direction. The hypothesis states that through the implementation of a design method based on cultural analysis within senior housing, the result would create an acceptable assisted living environment. In turn, that environment would represent identity and reflect culture to its users. The methodology entailed the objective of recreating cultural interaction spaces within the senior housing program. By using an idea called cultural diagramming a system was formed to implement cultural moments into a built space. Eight ‘archetypes’ were developed in order to further define the cultural components that would be explored. During the process of implementing these components, it was apparent that they could not be the sole solution. A successful senior housing environ-
ment would contain layers of spaces and elements that would promote positive living in senior housing. The integration of culture was the innovative element that drove the overall thesis. However, it was through the addition of other elements that secured a successful plan for senior living within Latin America. (1) Cultural Diagraming, (2) Puerto Rican Vernacular Architecture, (3) Elderly Living Requirements and (4) The Existing Urban Typology were the four elements that meshed together to form the overall building design.

As previously mentioned, the main design method of the four, was the concept of Cultural Diagraming. Cultural diagraming is an analysis of forms, spaces and activities found within Puerto Rico. First, a cultural image was developed which then is depicted as a two dimensional diagram, a three dimensional construct, and eventually, a built form and programmatic space. The second method concept used involved an analysis of the existing Puerto Rican vernacular architecture. The character of designing within a tropical Latin American culture such as Puerto Rico was considered. The use of common building materials and typologies found in Puerto Rican building and landscape design were implemented to identify the existing vernacular. The third method required the understanding of the design requirements and needs for the elderly. It used strategies to give senior identity and familiarity within their new transitional home. The forth and final method concept focused on using the existing urban typology of Aguadilla. The site and context influenced the parti and responded directly to the urban condition.

Therefore, the end result of the thesis brought me to an understanding that one element such as culture could have a large impact on the user. However, it is through a layering of many elements that can promote a more successful prototype to the senior housing typology. It was my intent that senior housing could be a positive living alternative for those who do not have another option. The transition into a senior living facility which contains cultural familiarity, identity and interaction in bound to be successful. By giving the residents of senior housing a sense of place and belonging, they are giving the opportunity to thrive in their environment. I believe that the final design of the senior housing center; indeed allow individuals to age in a place integrated with culture and reflected with identity.


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