

Agrihoods: The Sustainable Communities of the Future

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With a large call for sustainable methods in construction due to current consumer interest and worries over the environment, a growing movement has developed to answer this call. This project involves a case study on agrihoods; housing developments involving community farming. The research will be centered around the use of Freehold Communities' in-progress 309-acre agrihood model located in Palm Springs, California known as Miralon. This, as well as information from independent third-party sources, will bring to light the numerous positive aspects involved in making communities' sustainable though agrihood's unique attributes. The project will touch on the possible negative aspects and challenges that have been brought forth against them. These will include challenges faced with building agrihoods, what implications it has when using them (additional labor & potential crop issues), and how sustainable these communities truly are. At the conclusion of my project, the project will provide information on agrihoods evolution, insight and collective opinions on how these agrihoods are solutions to environmental issues, the innovations in sustainability they possess, and the practicality in terms of cost and time.

Key Words: Agrihoods, Freehold Communities, Miralon, Community Gardening, Sustainable

Introduction

The large societal issue of sustainability and the overall protection of our environment has rapidly taken the masses interest in recent years. With growing concerns for the wellbeing and longevity of our planet, actions rather than words & concern need to be taken. With this in mind, a growing trend has emerged in the form of urban agricultural communities known as Agrihoods. Agrihoods possess innovations that help the issues of sustainability in both buildings and the neighboring environment. "[Sustainability is] growth based on forms and processes of development that do not undermine the integrity of the environment on which they depend" (Jim MacNeill, Former Secretary General of the World Commission on Environment and Development). Freehold Communities, a real-estate master builder, is one of the developers that is addressing this directly and can be seen through their current project in Palm Springs, California known as Miralon. Miralon is a modern-day agrihood that features many sustainable aspects that addresses current environmental issues and various sustainability conditions in Residential Construction.

General Background

Before diving into Freehold Communities' take on the modern day agrihood, it is important that we define what an agrihood is to better understand the significance of them. Agrihoods are defined as, "an organized community that integrates agriculture into a residential neighborhood." Agrihoods typically feature a central working farm, which can include livestock, orchards, vineyards, and row crops (ATTRA Sustainable Agriculture 2016). In order for an agrihood to be feasible in an area there are pre-requisites that need to be met. These include the overall availability of the land, the abundance of natural resources, the financial viability of agrihood, how strict the various public policies are in an area, the workforce required to maintain the agrihood and keep it running, and lastly the acceptance by the community of agrihoods. Without possessing all of these, it would become a conundrum in figuring out how the agrihood would be a success.

History of Agrihoods

Back in the 1950's, during a time when cities were recovering from post-war manufacturing and overall hard times for its citizens, the development of agriculture in urban areas began to emerge by the means of gardening. As Laura J. Lawson writes in her book, *City Bountiful: A Century of Community Gardening in America*, "Gardening became a venue for community organizing intended to counter inflation, environmental troubles, and urban decline." These communities that came to be known as Agrihoods were built upon the need for survival through rough economic times and were temporary until financial and social conditions improved. Nowadays, agrihoods have made a revitalization throughout the US and their purpose for re-emerging have changed drastically from the early forms of agrihoods.

The purpose of these communities in today's world is to facilitate food production while at the same time providing recreation for members of the community. According to Alyssa Giacobbe of *Architectural Digest*, "the broadest definition of the term includes any community with an emphasis on sustainable, protected outdoor space—a reflection of the latest spin on luxury, which is more about how you spend your time than how you spend your money." Agrihoods are seeing a resurgence in the US largely due to Millennials' interest in the sustainable aspects of agrihoods and the community created through them. (Loudenback, *Business Insider*).

Agrihoods Rise in Popularity

Paul Habibi, a professor of real estate at UCLA's Anderson School of Management, states that agrihoods represented a "confluence of economic profits, environmental good, and social benefit". Agrihoods are designed to entice young, active families who enjoy eating healthy and spend time outdoors all while not being off the grid (Loudenback, *Business Insider*). Due to the fact many millennials enjoy unique experiences, encourage sustainable environments, and center their lives around community, agrihoods are all inclusive of these and thusly have a large interest by Millennials. Agrihoods are not limited to Millennials as many other people share these interests, however, the current statistics on agrihoods show the majority of interest in these communities comes from this generation (Giacobbe, *Architectural Digest*).

Methodology

My primary methodology for this case study is an analysis of qualitative data that is directly recorded from interviews with various Freehold Communities 'employees and a separate developer (Gallery Homes) who currently are working on an Agrihood in Palm Springs, California. These developers were asked questions that analyze the topic of Agrihoods, their experience with them, and the challenges faced when dealing with Agrihoods. I have also included quantitative data through the different percentages saved from the use of Agrihoods in terms of sustainability, cost, and time via Miralon.

To further expand the knowledge and improve upon my own research, the case study incorporates secondary research from another case study of agrihoods, academic research journals, and various experts. To reduce bias in the case study, I will incorporate all negative aspects of these agrihoods that are analyzed through my secondary research. Through both qualitative and quantitative data, the analyzed results will incorporate positives, negatives, and future improvements.

My overall purpose and objectives for this case study is to...

- Expand the general knowledge known about Agrihoods
- Analyze the impact of agrihoods' sustainability components
- Further understand, if any, the negative aspects of Agrihoods
- Help other contractors and home buyers in the future to make informed decisions via my research on whether Agrihoods could benefit them

Case Study

Freehold Communities is a developer of master planned communities with offices all over the United States, however, for this case study we focus on their California office. Their developments are large-scale residential communities with thousands of homesites and each development is specifically designed to incorporate the latest trends within the local market. Freehold Communities puts a large emphasis on community and what community entails. Recently, they found through research of trends in the current market of home-buyers that agrihoods are a growing interest of people throughout the United States due to their sustainable impacts and large sense of community. With this knowledge, they created their first modern-day agrihood with many unique characteristics & innovations.

Project Specifics

Freehold Communities' first take on a modern-day agrihood is called Miralon and is located in Palm Springs, California. The site is 309 acres and is transforming a previously constructed 18-hole golf course into working olive groves, community gardens, and walking trails. The site was originally purposed as a golf course but failed after the 2008 financial crisis. When buying the land in 2016, Freehold decided to repurpose the open space into Agrihoods after research into how they could convert the land. Below in figure 1 is the map and legend for how Freehold Communities planned to convert the large golf course into a successful agrihood.



Figure 1: Miralon Map & Legend

Crop Choice

Part of various agrihood's key success is dependent on the crop they choose to grow and how well it responds with the local environment. In Miralon's case, since it is located in the desert where many crops do not fend well due to many factors including but not limited to lack of water, natural resources, and large harvesting labor requirements. Freehold Communities hired various experts in the local area to determine the best crop for countering the various difficulties of the desert environment. Below in figure 2 is a chart that Freehold, with the help of the experts, put together showcasing why their choice of olives were the most desirable for Palm Springs.

	Low Water Usage	Low Water Usage	Low Pesticide Requirement	High Commercial Demand	Low Labor Requirement	High Ability to Thrive	Short Pollen Season	Rodent Averse	Reduced Waste	Simple Harvest
Olives	2 acre'									
Grapes	4 acre'									
Citrus	4 acre'									
Persimmon	5 acre'									
Pomegranate	5 acre'									
Date Palm	8 acre'									
Fruitless Olives	4 acre'									
Almonds	6 acre'									
Walnuts	6 acre'									
Desertscape	2 acre'									
Turf	6 - 8 acre'									
Fig	4 acre'									

Figure 2: Crop Advantages Chart

Pros

- Low water use
- Mechanical harvesting requires a small labor force at harvest
- High commercial demand for olive oil
- Limited pesticide requirements
- Sturdy plants capable of thriving in desert conditions
- Dropped fruit does not attract rodents or other pests
- Abbreviated pollination period

Cons

- Pollen may cause sensitivities in those that are susceptible

Consumer Interests

Freehold Communities were able to see opportunity in further Millennial trends giving rise to newer approaches to agrihoods. In recent years, golfing participation by the younger generations have dwindled heavily due to many factors including financial issues and disinterest in the game as a whole. Unfortunately, this leads to golf courses having a hard time seeing profit with the expensive maintenance of golf courses. Golf courses also produce negative impacts on their surroundings. These negative impacts include ground water pollution due to fertilizers and pesticides and loss of natural habitats (Rutgers, “Golf Courses and Environmental Issues”) Freehold communities recognized this pattern and addressed it through their purchase of the golf course in Palm Springs that they transformed into Miralon.

Space Utilization

Part of Miralon’s appeal to the community is its incredible utilization of space. When transforming the golf course into an agrihood, many possibilities arise in terms of what the area can be used for. As with all agrihoods, there is a community farm on Miralon, however, it also includes many unique components. As seen below in figure 3 in comparison to the originally planned golf course, the amended agrihood provides far more options for what the space can be used for.

	Original Master Plan	Amended Master Plan
TOTAL PROJECT AREA	309 Acres	309 Acres
TOTAL UNIT COUNT	1,150 Units	1,150 Units

OPEN SPACE USES		
Golf	91 Acres	-
Orchards	-	48.1 Acres
Desert Landscaping	-	33 Acres
Gardens/Social Spaces	-	1 Acre
Dog Parks	-	0.9 Acres
Trails	-	8 Acres
Lakes	6 Acres	6 Acres
TOTAL OPEN SPACE	97 Acres	97 Acres

Figure 3: Space Utilization Graph

Due to more variation in what the space is used for, a wider audience will have a chance to get utilization out of the former golf course area. With the large decrease in golf interest over the past few years as well, the space will see far more usage.

Sustainability Impacts

Miralon, based on analysis of the agrihood, possesses many sustainable innovations that mitigates the need for an abundant amount of resources, harmful processes that negatively impact the environment, and maintenance costs. These impacts include:

- Crop Sustainable Impacts
 - Carbon sequestration from olive trees and ground cover
 - Added shade and water efficiency
 - Low maintenance costs relative to other open space planting
 - Reduced need for pesticides
 - Composting of olive oil byproducts

- Resource Conservation and Efficiency
 - Solar included with every home
 - Highly efficient community center exceeding Title 24 requirements by more than 15%
 - Impervious surface limitations
 - Front yard landscaping restrictions
 - Dark sky compliance
 - Glazing material upgraded to limit heat exchange (passive cooling systems)
 - Water efficient uses – 23% savings relative to previous golf course use
 - Lakes serves as the irrigation system for the Open Space using non-potable water

Benefits of Agrihoods

Agrihoods contain a plethora of good in comparison to the negatives for both builders and consumers. Specific agrihoods possess different positives based on their location and the varied sustainability methods they incorporate. The overall beneficial aspects of agrihoods are as follows:

- Providing Community among groups of people

- Allowing for food security
- Multitude of various sustainability impacts (dependent on specific agrihoods)
- Hiring farmers in need of work with great salaries
- Providing unique experiences for its residents
- Educates the community on farming and various
- Encourages healthy lifestyle through eating habits, surrounding yourself with community, and partaking in activities
- Major profits for developers & various financial benefits for residents

Challenges of Agrihoods

Just as there are positives pertaining to specific locations, there are negatives that accompany them. Below are the potential challenges that pertain to agrihoods:

- Varied Crop-based negatives; some requiring larger labor requirements (increased cost)
- Specific agrihood communities can be high cost for its residents
- Potential loss of appeal towards agrihoods in the future due to...
 - Old stigmas of agrihoods being associated with less fortunate people
 - Overall loss of mass appeal due to another societal issue taking precedence over the sustainability of the environment (Birky, USF)

Conclusion & Future Research

Based on the information gathered from the case study of Miralon and the statistics learned from secondary research such as case studies of agrihoods, academic research journals, and various experts; It is safe to deduce that agrihoods boast an overall beneficial contribution. Agrihoods will provide large benefits to the environment, residents, and developers alike and due to these reasons are more than practical in terms of cost and time. As seen through Freehold Communities' modern agrihood in Palm Springs, new landscapes such as golf courses are being repurposed to make way for these communities. From a business perspective, there is an abundant amount of possibilities of these communities. These possibilities can be determined by what environments and un-used spaces could be repurposed into agrihoods.

Determining the feasibility & overall effectiveness of agrihoods is something that will be much more easily understood in the future when there are far more finished agrihoods. With the limited number of agrihoods in the United States from the current date, it is difficult to decide whether or not these communities are a fad of millennials or communities that are here to stay. Future research should continue to further extend and strengthen our understanding of agrihoods feasibility. New methods of sustainability are continuing to be developed and incorporated in Construction due to the consumer's interest in the wellbeing of the environment. Due to limiting factors of this case study such as the information of these agrihoods being from interviews on a specific agrihood in California, future research and further understanding of agrihoods can be obtained through research of different agrihoods in locations across the United States as well as potential communities outside of the United States.

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