

The Sangamine-Ecohouse

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Abstract

This is a comprehensive initiative that includes: the construction of a self-built house on the premises of Aichi University of the Arts in Nagakute City in Aichi Prefecture; the use of renewable energy with this house being the central point; the growing of vegetables on a natural farm; workshops where regional citizens get to have experiences with nature; the creation of an informational network for regional citizens; and the creation of festivals that allow for exchanges between regional citizens. In the 1960s, cyberculture arose from the counterculture movement, and the Internet and personal computers started to be developed. Even now, this has grown into smartphones, the Internet, and renewable energy. The abilities of individuals are being cybernetically expanded, and the networks have pushed the human spirit beyond the physical form. Also, the current era is moving towards the dream of coexistence that could not be accomplished by the counter culture in the 1960s. This project is creating connections between citizens in the same region by leveraging its self-sufficient spirit and using the power of music, art, and networks, and it is bringing back a traditional lifestyle that coexists with nature.

Background

Around 2007 when the plan to construct a self-built house was started, there was a close-up view of environmental problems like global warming. Additionally, in Japan, the destruction of nature and deforestation had become a problem. Therefore, we thought that we would like to get to know more about the current state of the forest and the surrounding natural environment by building a house ourselves. Moreover, because problems with farm chemicals and food issues had risen to the surface, we started a workshop together with the regional citizens to allow people to have natural experiences including farming within the region and university. Furthermore, around this time, high-speed fiber optic Internet lines were connected, and it became possible to always be connected to the Internet. Also, smartphones and SNS started to spread, and it became possible to communicate through the Internet anywhere in the world even outdoors. In this situation, we felt that the field of our activities was in the process of going beyond being indoors and in cities and starting to include the community and outdoor areas. On the other hand, there was a flood of reproducible information on the Internet, and we started to think about the value of the actions and experiences that we can only have here that cannot be copied. Also, in Japan society was in the process of becoming sealed off and far less transparent as technology and society became more complex as issues like falsified production sites for food and falsified construction strength came to light. Therefore, we thought that we would like to

get safe food and buildings that gave us piece of mind by building a house ourselves and growing our own vegetables. Additionally, the growth of cell phones, SNS, and smartphones has lessened actual face-to-face communication, so we thought we could create an opportunity to communicate with students and people in the region through the joint work of building a house and farming. Moreover, the separation of one's work from one's residence in the modern age means that the houses that people live in and the places where they work are in separate places. Thus, local communities are in the process of disappearing. Accordingly, we felt that we wanted to make this house open to the community and have it be a place where local people can have a variety of exchanges and do various activities.

The construction process

The construction process for this house is listed below.

There was a field trip to see the state of the forest and a survey done in November of 2008. The Asahi Lumber Cooperative in Asahichō area of Toyota City in Aichi Prefecture was visited, and we asked them about the state of the forest, how to distinguish cedar trees from cypress trees, and large drying machines. (Figure-1)



Figure-1, doing a survey at the Asahi Lumber Cooperative

Brining in the lumber: In November 2008, the lumber was brought in by Teiichi Suzuki from the Asahi Lumber Cooperative. (Figure-2)



Figure 2, brining in the lumber

Removing the bark: In December 2008, the bark that was on the logs was shaved off with a saw blade, and then the trees were cleared from the site where we planned to build the house.

Provisional assembly: In December 2008, the carpenter Mr. Tsuge carved mortises into the lumber and checked that they would fit together by temporarily assembling them.

Groundbreaking ceremony: In December 2008, the area where the house would be built was enclosed in hemp rope in light rain, and vegetables, alcohol, rice, kelp and fruits were offered up inside this space. Then a service was held for the groundbreaking ceremony. A total of 12 people participated in the ceremony. (Figure-3)



Figure 3, the groundbreaking ceremony

Yarikata: In December 2008, the area around site that was planned for the construction by the carpenter Mr. Tsuge was surrounded by boards, and the position where the house would be built was decided.

Constructing the foundation: In December 2008, the land was surveyed, and 8 self-supporting foundations were built. Voids (cardboard tubes) were buried in the ground, and concrete was poured into them. Then the pillars were carried in by hand. Lumber that has just been cut down that is still wet inside is very heavy. (Figure-4)



Figure 4, carrying in the lumber by hand

Erecting the pillars: In December 2008, teams that made a three pronged fork for each of the pillars were formed, and the pillars were held up vertically, and once they were stood up, they were made perpendicular to the foundations and installed on it. This work is normally all done using heavy machinery, and doing it by hand is difficult but fun. (Figure-5)



Figure 5, erecting the pillars

Placing the lumber for the roof on top of the pillars: In December 2008, after 8 of the pillars had been erected, the work of placing the lumber for the roof on top of the pillars was done. Ropes were tied to the lumber, and it was raised up by hand. Everyone lifted up the lumber, and the lumber was assembled by being inserted into the mortises. (Figure-6)



Figure 6, placing the lumber for the roof on top of the pillars

Each time a piece of lumber was put up, it was met with applause and cheers. The first stage was completed after the 4 pieces of lumber that would support the roof were placed on the pillars. Next the heaviest pieces of lumber that was 4.3 meters long were lifted up. The work that we had thought we would do in 2 days was almost completely finished in a single day, and the work was completed while everyone felt a comfortable sense of exhaustion. (Figure-7)



Figure 7, the completed structure of the pillars and roof

After this from 2009-2010, a wooden deck and railing were built. (Figure-8)



Figure 8, the completed structure of the pillars and roof

In 2011, the walls, doors, and windows were built, and the house was almost completed. (Figure-9)



Figure 9, building the walls

Along with the building of the house, grains and vegetables were cultivated at the natural farm. The house was used as a place to store farm tools and equipment and to dry and store the vegetables that were cultivated at the natural farm. Additionally, the house that was built was also used to hold workshops and as a storehouse for the equipment needed for these workshops. The aim was to have a self-sufficient lifestyle in a remote mountain area that is rooted in the Japan's natural ecosystem by building this house, holding these natural experience workshops, and doing this natural farming. (Figure-10, 11)



Figure 10, conducting a natural experience workshop for children in the region on the house's wooden deck



Figure 11, practicing natural farming

Setbacks for self-sufficiency, creating a network, and festivals

However, the productivity of the natural farm is low, and it requires an excessive amount of labor. So it was not able to produce the expected results. At this time, we were faced with the Great East Japan Earthquake of 2011. When this happened, the victims helped each other out while looking at their own survival, and they felt the importance of the connections within the regional community. Additionally, the tsunami caused the Fukushima Daiichi Nuclear Plant accident, and this contaminated a lot of land and crops with radiation. This made us keenly aware of the importance of a life that has local farms and a natural environment. Therefore, in 2014 we created the grass roots network called "the portal site for farming lifestyles, Nagakute Yuimaaru". This started creating a network for a life based on farms. (Figure-12)



Figure 12, portal site for farming lifestyles, Nagakute Yuimaaru

Moreover, we thought that we wanted to create a place where people can build face-to-face relationships, and the regional residents can get to know each other better. In 2014, we started the regional festival called the “Nagakute picnic,” and it has been regularly held since then. The house that was built is at the center of this festival, and the festival features songs, dances, a cooking workshop, an introduction of civic activities, the sale of produce, and exhibitions of art. (Figure-13, 14, 15)



Figure 13, a live performance at the house at the “Nagakute picnic,” and the performers are Pochi & Olive, TOPA



Figure 14, students introduce the activities at the Nagakute picnic



Figure 15, an exhibition being held in the house, the Nagakute art festival, the Imo group

Additionally, the experience of being forced to conserve power for a while because of the Fukushima Daiichi Nuclear accident taught us to fear reliance on large energy systems like nuclear power. The house was fitted with wind generators, solar panels, a storage battery, and a tank to collect rain water. The electricity created by these things is used for the amplification during the festival, the lights for the exhibition, and to pump rain water into farm. (Figure-16, 17, 18)



Figure 16, the house with solar panels and a wind generator



Figure 17, the house with rain water tank

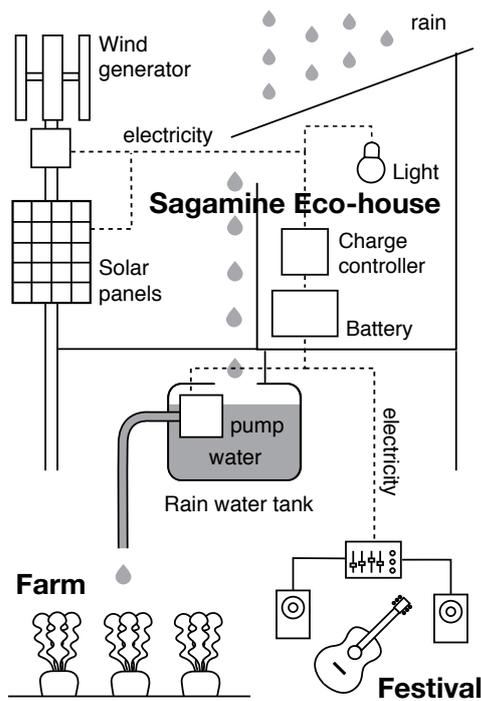


Figure 18, how the power and rain water in the house is used

The counter culture and self-sufficiency

At the beginning of this project, we aimed to have a self-sufficient life through building a house and natural farm, and this was impacted by the communal lives that were led by the counter culture in the 1960s. In the 1950s through the 1960s, people were terrified of the possibility of a nuclear war under the cold US-Soviet cold war system. Moreover, in the 1960s young Americans were conscripted to go to the Vietnam War through the draft system, and there were anti-establishment movements like anti-war demonstrations that took place all over the world. On the other hand, there were also young people who left cities who were part of groups like communes that started farming or building houses to explore a new lifestyle that was free from the oppression of the system.

The biggest legacy of the counter culture that was produced in this manner is the self-sufficient state of mind. The founder of The Whole Earth Catalog Stewart Brand made a statement to the following effect.

“There is a book called “from Counterculture to Cyberculture”. If you read this book, the hippies’ ethics and the philosophy were taken over by the computer culture. This book writes that the internet and web have a large impact on culture. It goes on to state that the great thing that the hippies produced was the do it yourself approach. This approach seemed to say you can do anything, and now it is found in the maker movement, the Burning Man movement, and the enthusiasm for creativity that can be seen all over the internet.” [1]

The Whole Earth Catalog and Cybernetics

The young counter-culture generation in the 1960s-70s needed to escape the oppression of the system and gain the tools needed to live independently. One tool used

to do this was The Whole Earth Catalog that shared a variety of tools, information, knowledge and ideas for this purpose. This was a magazine aimed at young people in the counter culture, and it published a lot of necessary information and products for the things that they were aiming to do like starting and maintaining a new commune and expanding consciousness. All of this information and these products were treated as “tools” to support their own lives.

Furthermore, The Whole Earth Catalog was not simply a catalog, it was “information technology.” Steve Jobs, the founder of Apple, made the following statement about The Whole Earth Catalog.

“When I was young, there was an amazing publication called The Whole Earth Catalog, which was one of the bibles of my generation.... It was sort of like Google in paperback form, 35 years before Google came along. It was idealistic and overflowing with neat tools and great notions.” [2]

Moreover, The Whole Earth Catalog had reviews of a variety of tools, and the reviews were not only done by specialists and submissions by the readers were emphasized. The receivers and senders of the information were placed on equal footing. The Whole Earth Catalog was created based on Gregory Bateson’s ideas about cybernetics, and it was a place to do social experiments using a system’s theory approach that emphasizes feedback. The Whole Earth Catalog viewed information as a process, and it was a dynamic setting that had a type of network forum. It was not merely ideals, and it also employed realism like a scientific approach and looking at realistic solutions to problems.

The linguistic root for cybernetics is the Greek word *Κυβερνήτης* that means a person who takes the rudder of a ship. This person controls the ship to advance it to its destination while it is being impacted by waves and the wind. Cybernetics is like this in that is a term that indicates constantly predicting or getting feedback about the results of an action that is taken to achieve a goal and preparing the next action. It indicates doing the best action to achieve a goal. Organisms and machines both gather information from the outside world, and have special devices in place that make this useful for their own actions. These devices change information to new forms and incorporate it so that this is useful for subsequent actions. By doing this, they are able to act in a way that is effective in dealing with the outside world. Then, the actions they actually take in relation to the outside world provide these devices with more information. In this way, both organisms and machines can control themselves and take the best actions to accomplish a goal while having a interactive relationship with the outside world. In this sense, cybernetics is a universal concept that applies to machines, natural ecosystems, information networks, and society.

The Whole Earth Catalog functioned as cybernetic information technology using a paper medium in a time when there was not yet internet or personal computers.

“Brand’s vision was to turn the catalog itself into a tool. The CATALOG—he usually spelled it in capital letters—was to form a feedback loop. He wanted it to be a communication device that connected the far-

flung community he cared so much about. He wanted the catalog to be part of something that would create an equilibrium. The catalog was part of a whole system, a dynamic and self-regulating system.”[3]

The Whole Earth Catalog was trying to be a whole self-regulating system that had informational and behavioral feedback loops, and it was not something that was done unilaterally by a single person. However, in the 1970s, the Vietnam War ended, and energy issues, environmental problems, pollution, and recession from the oil crisis were serious problems. At the same time, the 1970s intense counter culture movement came to a conclusion, and the communes disintegrated.

In the work “From Counterculture to Cyberculture,” Fred Turner described this age in the following manner. “Self-sufficiency is an idea which has done more harm than good. On close conceptual examination it is flawed at the root. More importantly, it works badly in practice. Anyone who has actually tried to live in total self-sufficiency-there must be now thousands in the recent wave that we (culpa!) helped inspire-knows the mind-numbing labor and loneliness and frustration and real marginless hazard that goes with the attempt. It is a kind of hysteria.... self-sufficiency is not to be had on any terms, ever. It is a charming woodsy extension of the fatal American mania for privacy.... It is a damned lie. There is no dissectable self. Ever since there were two organisms life has been a matter of co-evolution, life growing ever more richly on life.... We can ask what kinds of dependency we prefer, but that's our only choice.” [4]

Thus, the counterculture in the 1960s-70s and the subsequent communes made by young people disintegrated, and they were not able to realize a self-sufficient coexisting lifestyle. They returned to cities and engaged in economic activities, and the dream of the counter culture disappeared. This was because they did not have realistic “tools” to live independently from society at that time. The Whole Earth Catalog finished playing its role, and its ideals were taken over by the electronic network Whole Earth 'Lectronic Link (WELL). The cyberculture was born out of this series of movements, and since then, a variety of realistic tools have been developed.

First, the personal computer was developed in the 1970s as a “tool to expand individual’s abilities,” and these came into common usage in the 1990s. The internet was developed as a “tool to create networks.” In 1969, ARPANET connected a non-governmental internet, and in 1989, the internet browsers and www came about. In 1993, mosaic was developed, and after this, Netscape and Internet Explorer were developed. Since the 1990s, the internet has become a common tool. Later, search engines like Yahoo and Google and SNS like Facebook, Twitter, Instagram, and YouTube and smartphones became widespread. A lot of progress was made in the using the internet on personal information devices.

Now, wind generators, solar panels, electric cars, IoT and AI are in the process of becoming widespread, and “real social tools” are being developed for transportation, energy, and society. Openly shared objects, information and energy are continually advancing, and the concepts openness, sharing, and sociality that only a little while

ago were concepts of the cyberworld are becoming more general in real society. (Figure-19)

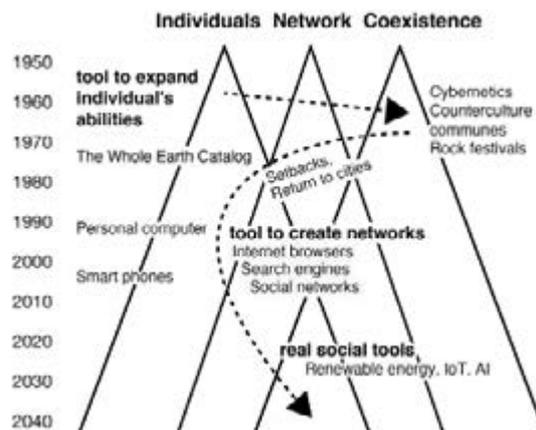


Figure 19, history of developing “tools”

From the Counterculture to the Cyberculture and coexistence

The counterculture movement faced temporary setbacks, but Bateson’s ideas about cybernetics, and the ideals expressed by The Whole Earth Catalog were passed down while a variety of tools were developed. It seems like the history that has happened since the 1960s has been trying to transform society. This project tried to find a lifestyle that was self-sufficient and removed from society, but it faced setbacks. Thus, the shift to interacting with society through exchange events and creating networks in society might have been its natural destination.

People cannot live outside of society in being separated and opposed to it. Bateson realized this.

“Bateson's vision clearly echoed the New Communalist critique of technocracy. Like the former commune dwellers, Bateson offered a new consciousness as an alternative to the destructive, mechanistic forces of bureaucratic America. Yet he did not call for the establishment of alternative communities. For Bateson, mind was simply present in all social and natural relations. To recognize that immanence and to act in accord with it (and thereby possibly save the world from ecological disaster), individuals need not join an alternative community; they could simply work to influence whatever local "system" in which they found themselves involved. In this way, Bateson offered a generation that had set out for the woods fully believing that they could save the world a chance to make their way back with their faith in their own importance still intact. Although the individual could not stand outside the "system," Bateson's epistemology implied, he or she could save the system from within.” [5]

Building a house, doing natural farming, and then transitioning to rebuilding society by creating a farming lifestyle network and holding festivals for people in the regional community seems like it emulates the path that was taken by the counterculture after the 1960s. However, the difference between the 60s and now is that now it is possible to use a variety of “tools” that were not available then. Now we can independently build a house, create a website, and use smartphones to communicate

over SNSs. It is also possible to generate electricity using renewable energy and hold festivals, and it has become possible to actually do a variety of things in society.

The following graph is the changes in the amount that the “Portal site for a farming lifestyle, Nagakute Yuima aru,” and the site has been accessed more since its inception. This is thought to be because there is incessant access from local residents as this site displays a list of blog information diffused by them through the RSS feed, enabling one to consult the latest information of local residents on a constant basis. This could also be considered an example of a cybernetic feedback loop. (Figure-20)

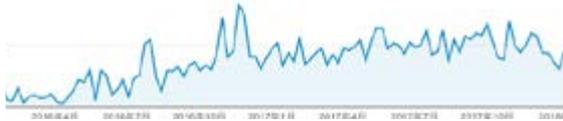


Figure 20, change in the access to the Portal site for a farming lifestyle, Nagakute Yuima aru

The regional festival “Nagakute picnic” has musical performances, music workshops, introduces participant activities, sells regional produce and handmade goods, and exhibits art. Through these things, it is attempting to create an informational and material feedback loop in real-life society. The organizers are not one-sidedly giving things to the participants, and it seems like the participants themselves are creating a self-regulating cybernetic system where they feel actively involved and have exchanges and convey information.

A Coexisting Society and the Current State of Japan

In modern Japan, society is rapidly aging due to the declining birthrate, and the budget for welfare, nursing, and education are becoming inadequate. It is becoming impossible to rely only on administrative systems. Additionally, the fact that we cannot rely solely on administrative systems when there is a disaster is a lesson that the Great East Japan Earthquake taught us. Therefore, the spirit of self-help and mutual assistance with others is necessary in addition to disaster plans and a welfare system. For this reason as well, it is important to have self-sufficiency and a do it yourself mentality where we build our lives ourselves and create networks and have exchanges with regional residents ourselves. This is not living outside of social systems in isolation from and opposition to society, and it is important to try to implement realistic solutions to social problems within social systems.

Furthermore, Bateson also referenced the role of art. “But in the making he must necessarily relax that arrogance in favor of a creative experience in which his conscious mind plays only a small part. We might say that in creative art man must experience himself—his total self—as a cybernetic model.” [6]

People who see art or listen to music or participate in these things can feel like they are part of society.

Additionally, art and music are also tools for non-verbal communication that intuitively expand consciousness. They are even tools that allow people to overcome their ego and share awareness.

We are currently in the process of moving from vertically integrated unified informational, social and energy systems to pluralistically equally distributed informational, social and energy systems, and this is creating a new awareness around the world.

Jeremy Rifkin made the following statement.

“We come to see our common lot. Sharing the renewable energies of the Earth in collaborative commons that span entire continents can’t help but create a new sense of species identity. This dawning awareness of interconnectivity and biosphere embeddedness is already giving birth to a new dream of quality of life, especially among the youth of the world. The American dream, long held as the gold standard for aspiring people everywhere, is squarely ensconced in the Enlightenment tradition, with its emphasis on the pursuit of material self-interest, autonomy, and independence. Quality of life, however, speaks to a new vision of the future—one based on collaborative interest, connectivity, and interdependence. We come to realize that true freedom is not found in being un beholden to others and an island to oneself but, rather, in deep participation with others. If freedom is the optimization of one’s life, it is measured in the richness and diversity of one’s experiences and the strength of one’s social bonds. A more solitary existence is a life less lived. The dream of quality of life can only be collectively experienced. It is impossible to enjoy a quality of life in isolation and by excluding others. Achieving a quality of life requires active participation by everyone in the life of the community and a deep sense of responsibility by every member to ensure that no one is left behind.

The new understanding of the workings of feedback loops in ecological networks is paralleled in the modeling of info-energy feedback networks in an emerging Third Industrial Revolution economy. If technology, like art, imitates life, the new networked infrastructure of the TIR economy comes more and more to imitate the workings of the natural ecosystems of the planet. Creating economic, social, and political relationships that mimic the biological relationships of the ecosystems of the Earth is a critical first step in re-embedding our species into the fabric of the larger communities of life in which we dwell.” [7]

Furthermore, it must not be forgotten that this project was done at a university and that it was done with student participation. Rifkin made the following statement about education:

“The distributed and collaborative perspective starts with the assumption that learning is always a deeply social experience. We learn by participation. While our conventional education encourages the notion that learning is a private experience, in reality, “thinking occurs as much among as within individuals.” Although we all enjoy moments of private reflection, even then, the substance of our thoughts is ultimately connected, in one way or another, to our former shared experiences with others, from which we internalize shared meanings.

The new education reformers emphasize breaking down the walls and engaging diverse others in more distributed and collaborative learning communities, both in virtual and real space.” [8]

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Conclusion

Nature originally has a cybernetic self-regulating environment in and of itself, and it seems like people who lived traditional lives while coexisting with nature understood that natural cybernetics is dispensed by nature. This seems like why they would live so close to nature. Now, in the modern age, the informational and energy systems have grown into cybernetic systems, and it seems like we have finally caught up nature and traditional living. Accordingly, nature and traditional lifestyles and energy technology are not concepts that are in opposition. Because they have the same cybernetic behaviors, it seems like they should start to have an affinity for each other.

This project aims to create a self-regulating cybernetic mechanism for the integrated whole of nature, natural living, virtual network space, energy, and reality. It will also use the power of art and music to connect regional citizens using the spirit of self-sufficiency, and going forward, we would like to pursue quality of life through things like welfare, a way of living in harmony with nature, farming, food, traditional living and a way of life that has local roots.

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