

Elderly Experimental Residence from Suburban Decay to Interaction within the Community and the Environment

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1 Site Selection

A site in the West Tokyo city of Kodaira lies beside the Tamagawa Jousui river which is also excavated deep in the earth in order to manage flood control. To the east of the site is a large playground, to the west is the entrance to The Japanese University of Korean Studies. In order to address these two fronts, a traversable truss will cross the site from east to west and provide access people coming from either direction. In addition the project will not interrupt the path along the river, and will front the street facade with workshops and other community programs. In figure 1, the locations of the candidate abandoned houses near the site. 10 houses which are aging beyond repair, and have an elderly resident. Some elders have family or friends living in the area whom they may cohabitate within.

2 Program

A multi-generational housing project aimed at providing elders with comfortable living and support from the community. The program consists of housing for elderly and their families if they choose to live their as well. Also housing for assistants who will contribute to the care and needs of the elderly will also cohabitate with the families. Lastly auxillary multi-purpose spaces for PhD art student's ateliers and elderly people's own private studio or community workshop. Lastly every room for the elderly would have access to an elevator lobby in order to access other levels of the project. Also terraces of green roofs on the project will help return some of the green space back to the site from which it was taken. This pattern can continue until the building site has filled with new residents and the project can then serve as a prototype for other projects like it throughout the region and the world beyond.

3 Building and Park Exchange Grant

In the local area surrounding the site, are several cases of elderly people living or squatting in delapidated housing, a result caused by strict tax regulations on property. People living in these homes fear that if they leave the house will be torn down due to unsafe conditions which would drastically raise the taxes because the land does not have a house on it. Conversely, if elderly people living in these houses die, the property will have to be torn down and partly sold in order to pay the high estate inheritance tax in Japan. This project offers a solution to this problem.

Elders living in these houses will be able to apply for a local government grant to living in a high-density housing project especially designed to cope with aging seniors and integrate them into a larger community where they have purpose, and are inspired to contribute to the society as a whole. The applicant will trade his or her parcel for a piece of land in the green field next to a park where the project is being built. The urban vegetation which is being sacrificed to built the respective elder's house will be replenished by the construction of a pocket park by the government in place of the abandoned house which it had required. The green extends into the greater community beyond where neighborhoods have better access to it, and elders are being brought together with the relatives and peers. Figure 2 demonstrates how the site of an abandoned house can transform into a different pocket parks depending on the public space needs of the local community. Figure 3 shows the high amount of abandoned houses in Japan compared to normal houses while figure 4 illustrates the aging population in Kodaira and that of Japan. Being a bed town Kodaira has a more youth residents but still suffers from a low birth rate and inbalanced elderly population.

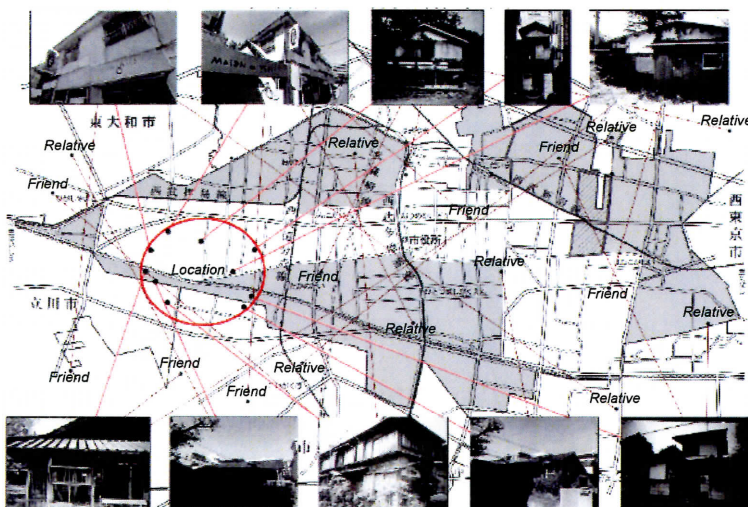


Figure 1. Abandoned House Location Diagram.

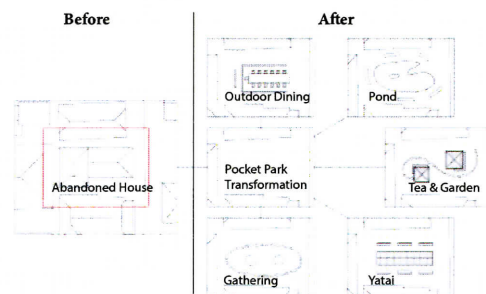


Figure 2. Diagram of Exchange Grant Proposal for the Housing Project

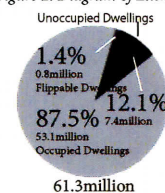


Figure 3. Housing in Japan

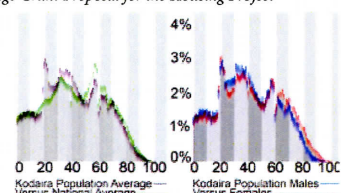


Figure 4. Kodaira and Japan Population

4 Elderly Activity

One of the major goals of this project is to encourage elders formally living in delapidated housing to interact not only with other elders in the community, but directly engage their family or young people. On the ground floor where the most elderly live, programs for community activities such as Ikebana workshops, Juku, art studios, or other spaces where the elders themselves can propose to create things. These spaces will connect directly to the living spaces for convenient access, and will have visual connections to the upper levels of the unit where the elders peers or relatives reside as seen in figure 5. Young people, living near the community spaces will both care for the elderly and share their expertise in conducting workshops learned at university.

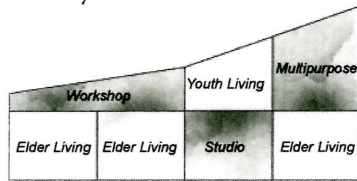


Figure 5. The activities of elders and visitors reverberate through the ground floor.

5 Multi-Generational Connection

The project will house people from many generations. Elders will be supported by their families or younger people also living in the project. This heterogeneous composition of the occupants' age encourages cross-generational relationships and support that is vital to the longevity of Japan's aging society. As in figure 6, the micro-community formed inside the project will outreach to local universities and Kodaira City beyond through many community programs conducted by elders and youth.

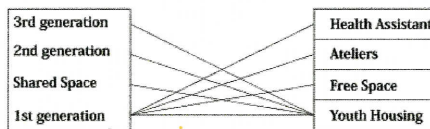


Figure 6. The stratification allows the young and elderly to connect and support.

6 Integration with the Art University

Doctoral students can conduct their own atelier in the upper levels of the project. These students may invite residents of all ages living in the building to collaborate on art activities and inspire elders to contribute to the community through their own arts and crafts projects on the ground floor. This network illustrated in figure 7 encourages the flow of ideas between young and old in the building. This social infrastructure is crucial to the longevity of the project as a place for growing, learning, and renewal.

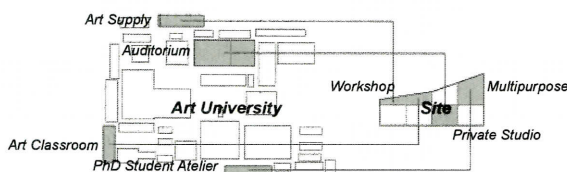


Figure 7. Ground floor programs reach corresponding spaces in the art university.

7 Parti

The project will begin with the first phase with a cross axis of circulation elements as seen in figure 8. Next a house will be attached to the intersection of the paths, and establish a node from which all the other houses will attach. Phase three will consist of an addition of more family houses, and finally phase four will be the addition of youth houses and support spaces. On the ground floor are living quarters for elders in the south and spaces for their community projects in the north. In the upper levels the building, younger people live on the north and housing for the elder's families or friends.

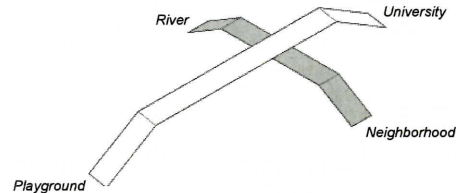


Figure 8. The intersection of the major axes integrating site and project.

8 River Damming

The Tamagawa Jousui River is shallow downflow from the Tamagawa Jousui power generation plant upstream in Tachigawa City. This hydroelectric facility provides a precedent for hydroelectric generation on the river, and reasonably for my site, given the walls of the river are already deep enough for damming, figure 9. However, the dam will also be able to release water in times of a flooding risk. The dam will not only facilitate the generation of power for use during a natural disaster, but also accommodate fresh water storage for times of crisis as well. This sustainable strategy is a key feature of the project's response to ecology and crisis management.

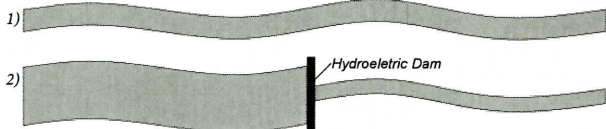


Figure 9. River before (1) and after damming (2) for power and water supply

9 Disaster Relief and ecology

The project would furthermore act as a crisis center in the case of a flood or earthquake. The building rests on a 0.5 meter high plinth which can resist flooding even in the situation when the water rises above the trench. Figure 10 illustrates how local refugees may seek safety on site. A continuous truss structurally holds the building together but also allows the living spaces to vibrate independently to resist significant damage. During a disaster the first floor would convert to quarters for at least 100 people.

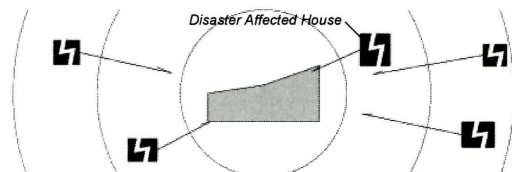


Figure 10. People affected by disaster nearby flee to the site.

10 Emergency Space Reformulation

Following an earthquake since central utilities may be cut off, the building can provide water stored up from the nearby river as well as electricity generated from it. In a moment of crisis, elders living on the ground floor will go up into the units above and live with their corresponding family or cohabitants, thus freeing the ground floor for emergency shelter. The spaces for elders and community spaces on the ground floor can be converted into short-term housing for refugees of the disaster fully supplied by renewable resources saved prior. See figure 9.

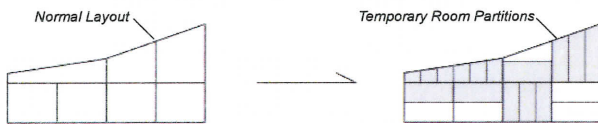


Figure 10. Temporary room conversion for refugees during a disaster.

11 Structure and Material Integration

A steel reinforced concrete frame composes the core truss which ties the entire project together. The wooden structure combines techniques used in traditional Japanese joinery. Like concrete, the wood will fuse seamlessly to create a monolithic expression. Also like Japanese traditional architecture, this project will make the basic structure also the material expression of the building. The units flanking the main truss will be wooden construction reinforced with steel on the outer facade in order to sandwich the wooden structure for earthquake stability. Concrete frame as pictured below can be infilled with recycled wood to create enclosure as seen in figure 12.

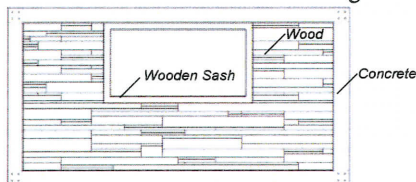


Figure 12. Detailed wall illustrating the fusional language of recycled wood

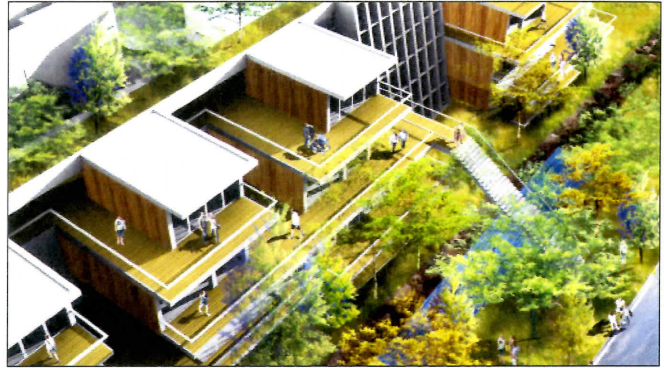


Figure 14. Terrace Detail Vignette



Figure 15. Entry from Playground Vignette

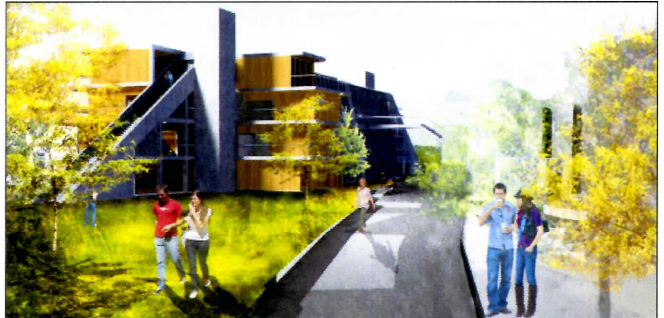


Figure 16. Street View Vignette



Figure 13. Main Bird's Eye Rendering

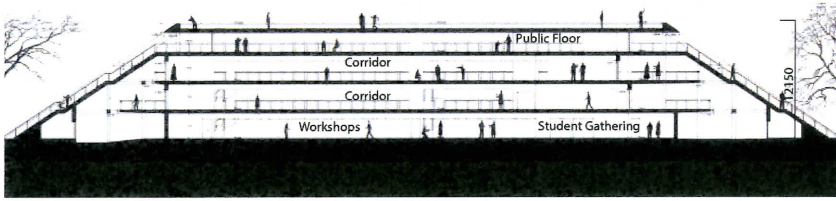


Figure 17. Primary Axis Section (a)

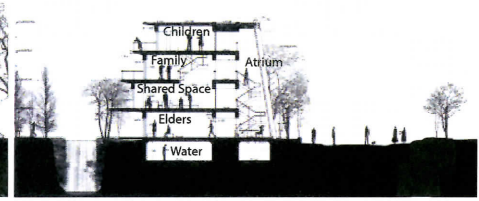


Figure 21. Short Section through house and atrium (c)

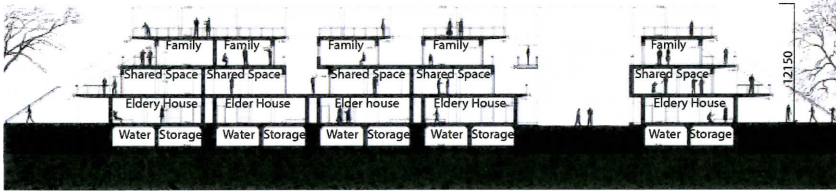


Figure 18. South Houses Section (b)

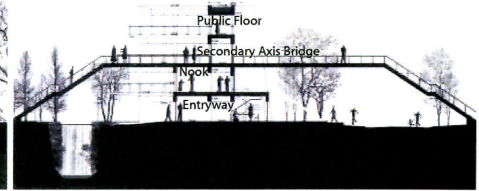


Figure 22. Secondary Axis Section (d)

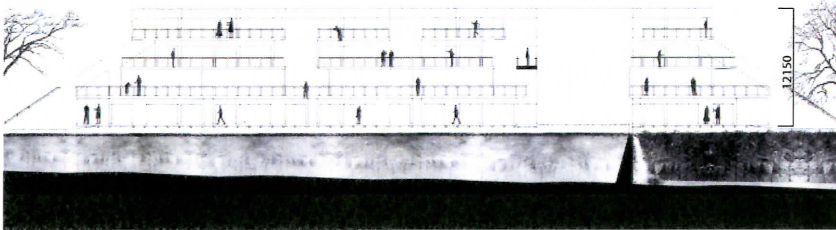


Figure 19. South Elevation

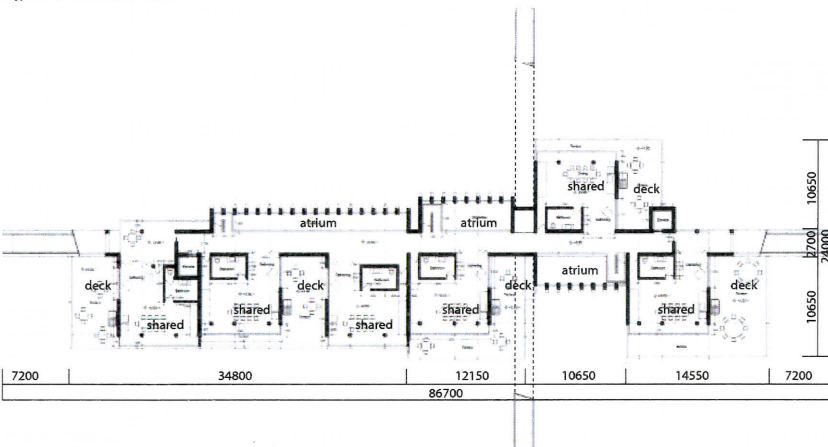


Figure 20. Second Floor Plan

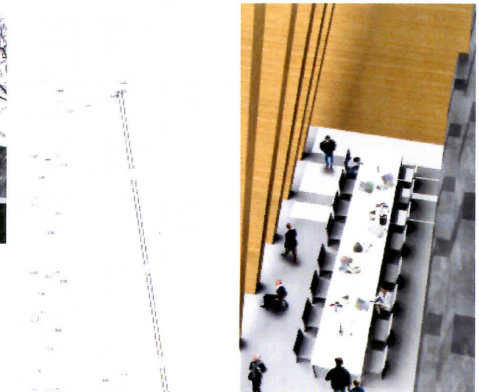


Figure 23. Detailed Wall and Unit Section

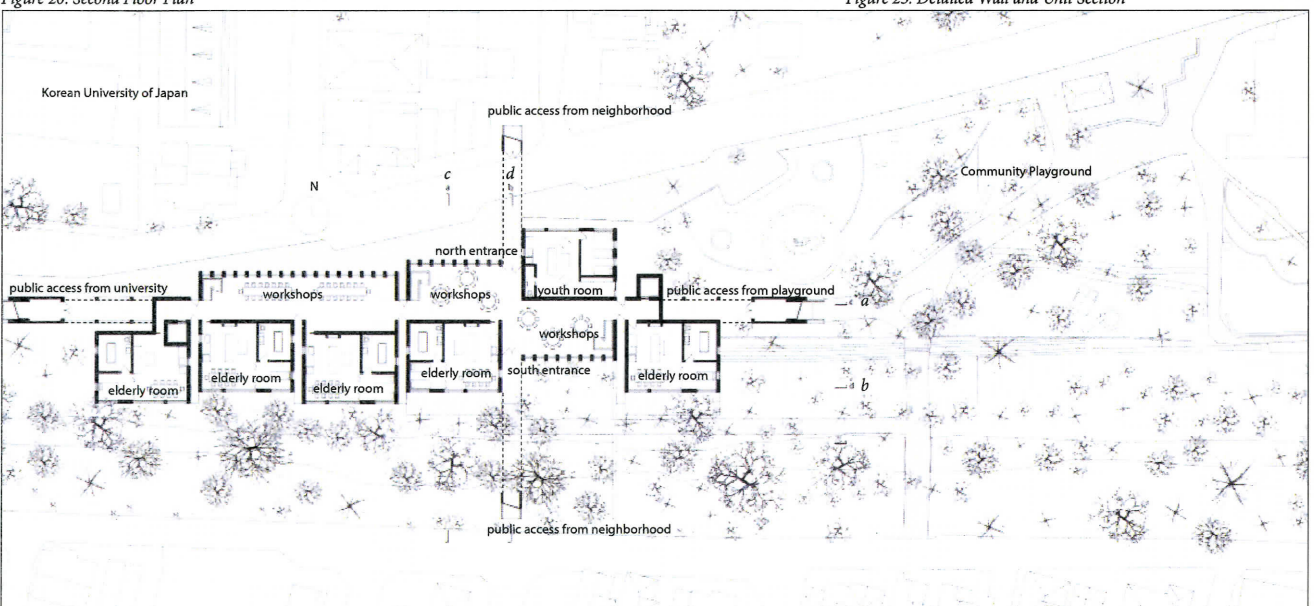


Figure 24. First Floor Plan