Master Thesis

Senior Community Center Proposal and Design

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Declaration of Authorship

I, Yujie Xu, declare that this thesis titled, 'Senior Community Center
Proposal and Design' and the work presented in it are my own. I confirm that:

- This work was done wholly or mainly while in candidature for a research degree
  at this University.

- Where any part of this thesis has previously been submitted for a degree or any
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Signed:

_____

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"My passion and great enjoyment for architecture, and the reason the older I get the more I enjoy it, is because I believe we - architects - can effect the quality of life of the people."

Richard Rogers

CARNEGIE MELLON UNIVERSITY

Abstract

Prof. Volker Hartkopf

School of Architecture

Master of Science

**Senior Community Center
Proposal and Design**

by Yujie Xu

The project of Senior Community Center started from Fall 2014. The goal of the project is to 1) analyze the feasibility and the potential benefit of a Senior Community Center near CMU Campus, 2) conduct case review of related design with specific focus on inter-generational relationship creation.

Acknowledgements

Contents

List of Figures

List of Tables

Abbreviations

CMU	**C**arnegie **M**ellon **U**niversity
OSHER	**A**cademy of **L**ifelong **L**niversity
SCU	**S**pecial **C**are **U**nit

Dedicated to my family, friends and my instructors. . .

Chapter 1

Case Study

1.1 General Design Considerations of Senior Population

Senior center is an active node in the community that supply resources to senior citizens and provide the community with aging related knowledge [1]. Main services offered at a senior center include: education on a broad range of topics including health, art, humanity, nutrition etc., volunteering opportunities, intergeneration programs, meal plans, health screening, physical training etc.

There are several main categories of housing choices for the elderly: independent living communities, assisted living facilities, Continuing Care Retirement Communities (CCRC), nursing homes, and special care facilities as Alzheimer's care facilities. The main difference are the degree of care provided. Residents of independent living communities differ from normal communities mainly in the demographic sence, i.e. the residents are limited to senior citizens. Assisted living had 24 hour staff and provide living services such as meal, laundry and bathing. It is meant for seniors that are not capable of living independently but are not in need of heavy medical care. Nursing home are more like hospitals with on site physicians and nurses that provide high degree of medical care in addiction to living services. CCRC provides varied degrees of service that covers all the services provided in the housing types above and may include some dementia care [2]. Due to the awareness of the negative impact of relocation of seniors especially those with dementia, the CCRC prototype for senior living is the most suitable in the current case.

The senior community center under discussion in the current project is a combined community center and housing for senior citizens. It also integrates with the university population by providing common space to the community including university population,

some housing units for newly enrolled faculty members and space for elderly-children common activities with the children from the children's school or from the community. These makes the function different from a traditional senior center setting. The case study in this section focus more on the aspect specific to the project, such as the instances with mixed age groups, affiliated to a university, or a combined facility of living and research.

1.2 Elderly and Children Combined Facility

1.2.1 Multi-generational Neighborhood Center

In Europe, "multi-generational neighborhood centers" are alternatives to traditional senior centers that creates inter-generational connections. The services expanded from traditional senior center to include pre-school and infant care etc [3].

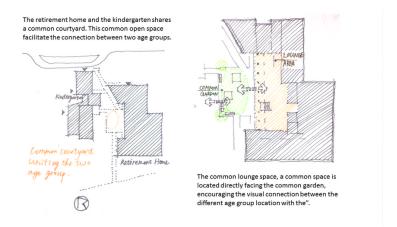#### 1.2.1.1 Intergenerational Quartier (Germany)

The IGZ Quartier urban regeneration project is located in the city of Dülmen. The Intergenerational Center of the project aims at [4] !!!!!!!!!!!!!!!!!!

1.2.2 Mixed-generation Elderly Housing

In Swabia, Germany, a housing program for elderly was created with 2/3 elderly residents and 1/3 of other age groups. The housing model aims at helping elderly age in place with helps from other generations in a "supportive environment". The common space is extensible and can hold a variety of activities arranged by social workers and the residents themselves. The activites take place in the common space include: morning play of children, affordable lunch for both the senior residents and people from the neighborhood, informal community gatherings and rent out space for other community events [3].
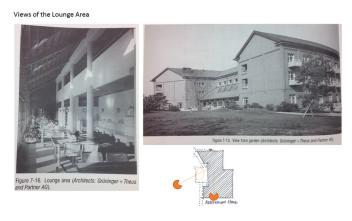
1.2.3 Elderly Housing Next to Kindergarten

1.2.3.1 Altersheim Furttal, A Retirement Home in a Swiss Village

The retirement home is built near the city center with good public transportation. This connection provides the residents with a stronger connection to the society.

The retirement home and the kindergarten shares a common courtyard. This common open space facilitate the connection between two age groups.

Kindergarten

Common courtyard uniting the two age group.

Retirement Home

LOUNGE AREA

COMMON GARDEN

The common lounge space, a common space is located directly facing the common garden, encouraging the visual connection between the different age group location with the".

(A) Site Plan Layout of Altersheim Furttal and Kindergarten

Views of the Lounge Area

Figure 7-16. Lounge area (Architects: Grüninger + Theus and Partner AG).

Figure 7-13. View from garden (Architects: Grüninger + Theus and Partner AG).

Retirement Home

(B) Views of the Lounge Area

FIGURE 1.1: Common Garden and Interior Design in Creating Connections between Different Age Groups

There is a kindergarten to the north of the facility. The connections between the two age groups are established with a common courtyard between the kindergarten and the retirement home. The interior space design strengthens this connection by arranging a two story "lounge space" adjacent to the common garden.

1.3 University Affiliated Senior Housing

1.4 Dementia Assisted Living

"Dementia is an umbrella term for a group of cognitive disorders typically characterized by memory impairment, as well as marked difficulty in the domains of language, motor activity, object recognition, and disturbance of executive function – the ability to plan, organize, and abstract." [5] Dementia, or its most common form Alzheimer is highly prone and one could not neglect its existance: there are 5 million Alzheimer victims in

the U.S. and every 1 out of 3 seniors die in dementia. Women are more vulnerable to dementia and 2/3 of the Alzheimer victims are women [6]. This section conduct some related case study on elderly caring facilities for people with Alzheimer Diseases.

The physical space acted as a "therapeutic resource" in improving the wellbeing and help reduce the seriousness of dementia [7]. Relocation of individual dementia victims to new environments can increase the possibility of depression and mortality [8]. This implies the necessity for dementia dedicated space. If there are not such spaces, when resident develops dementia, they will have to be relocated to facilities that has dementia care functions, which might cast negative impact. The living unit for cognitively impared people are commonly refered to as Spetial Care Unit (SCU). The common features of SCUs include "smaller size units, fewer resident rooms and more designated private rooms with private dining rooms". The SCU environment have positive impact on "communication, self-care, social function and mobility" status of dementia victims. It also reduce emotional strain and increase satisfactions. Separation between people with and without dementia is necessary as study showed non-dementia residents experience mental declines as a result of living near dementia victims. The tipical features of a SCU unit include: less rooms, small room sizes, private rooms and dining space, access to outdoor environment etc [7]. Smaller cluster size showed positive effects on reducing agitation level, aggressiveness, anxiety and depression [7]. The positive impact of smaller cluster group setting also includes relief of stress and negative attitude of relative care-givers [7, 9]. Special acoustic feature should be added to create a balance between "sensory overstimulation" and "deprivation", i.e. create a space that is neither too noisy nor too quiet. Since people with dimentia tend to also have visual difficulties, the suggested visual environment is low glare, high contrast and increase lighting level [7]. The "bright light treatment" showed improvement on sleep patterns [10]. For enhancing way-finding, common design suggestions include: provide views to the outside environment which gives hint of location; create "landmarks", large signs; increase lighting level of public spaces etc. Corridors are associated with less orientation and higher percentage of hallway reduces disorientation [7]

1.5   Sustainable Strategy in Senior Center

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