

## Chapter 10

# Transferring Biophilic and Universal Design Theory to Practice With Learning From Green Buildings: Restorative Design Parameters According to Three Certified Green Building Case Studies

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### ABSTRACT

*The study aims to guide the assisted living facility (ALF) design, in which biophilic design, which is observed to have positive physiological, psychological, and sociological effects on humans, is observed, and the principle of universal design is accessible and designed for everyone. Since there is no place called a biophilic ALF, the study is supported by a nature-oriented design method called Green Building Rating Tools. Green building certificate systems are explored in terms of biophilic and universal design, and three of the certifications show credits linked to the theories researched. With these certificates, green building certified ALFs located in the same region are selected. With the methodology applied on the case studies of three ALFs that received these certificates, how and where biophilic and universal design patterns can be transferred from theory to practice has been examined. The study observed the extent of 14 biophilic design patterns in ALFs and tabulated how to find each pattern in these facilities according to the methods and places.*

DOI: 10.4018/978-1-7998-6725-8.ch010

## **INTRODUCTION**

Changing situations in living standards and family structure leads to different living options for people. People mainly live as nucleus families, and adults do not want to affect their children's living conditions. For this reason, it is necessary to have alternative life options in order for the elderly to live more comfortably and safely. Assisted living facilities and care home options are available for the elderly for this need.

Prior to the 1970s assisted living facilities were considered only as physical care environments; however, in today's world, some facilities are becoming restorative environments and promoting the well-being of their occupants (Rejeski & Brawley, 2006). They provide psychological, physiological, and mental support for the elderly. The elderly has the chance to live with their peers with whom they can socialize and share their living experiences. There are examples of assisted living facilities that meet certain conditions for a restorative environment. However, the requirements for creating the conditions for designers are not established.

The chapter focuses on creating a comfortable, accessible environment possible restorative environment in assisted living facilities that prompts well-being, prevents and reduces health problems, and respects innate, age-related, and physical differences. In order to provide this environment, a literature review has been done, and the biophilic design, which has proven physical, physiological, and sociological positive effects; universal design principles that promote physical diversity and equal opportunity for all are explored through selected green building certificates and case studies. The chapter argues that biophilic design and universal design principles make environments, assisted living facilities in this case, more restorativeness of the environment is related to universal design patterns that provide an equal environment for users considering their physical differences and necessities that suggest basic needs for their comfort, health and enable them to lead a more socially active life. In addition, the biophilic design with the base created with the universal design provides an environment that improves the health conditions and well-being of the residents with the effect of stress reduction, psychological restoration, attention restoration, and rising recovery rating effect.

Assisted living facilities focus on creating a home-like place for the elderly, respecting their quality of life with respect, and recognizing the individuality and independence of residents (Roth & Eckert, 2011). The facility aims to provide the elderly with a meaningful, safe, and valuable life (Finlex, 2012). Unfortunately, there is a conflict between the theory and practice of these facilities (Pirhonen, 2017). The chapter aims to optimize the theory and practice differences of the facility and propose a restorative environment for assisted living facilities with biophilic and universal design theories.

## **UNIVERSAL DESIGN**

The universal design term was first used in America in 1985 to provide equal opportunities for everyone (Mace, 1985). In the design process, designers have to consider the whole process, as body functions and responses weaken as age progresses. Everyone should have equal access and opportunities regardless of body conditions, abilities, and age (Null, 2013). There are seven principles listed as universal design principles.

Table 1 shows the universal design principles with required keywords, sample figures, and conditions. These patterns can be adapted to different fields as architecture, urban design, interior architecture, and

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