K. ITURRALDE. **Refurbishing homes for elderly using CAD-BIM-CNC technology.** *Gerontechnology 2012;11(2):174;* doi:10.4017/gt.2012.11.02.510.00 **Purpose** This article was developed in the context of research on a construction system based on CAD-CAM-BIM and CNC (Computer Numerically Controlled) technology and it is focused on the implementation of sustainable refurbishments in historic districts. During field work in historic districts, it was established that more than 25% of the population in these areas is older than 60, and most of them have lived in the same apartment or house their whole live. The problem is that these old timber-framed buildings require better equipment to fit elderly peoples' characteristics. For instance, a better distribution of space in the home would be beneficial to the elderly. To ensure better living conditions for the aging society, comfortable and big bathrooms, corridors, and doors are necessary, instead of the narrow and cramped current spaces. Likewise, more space for the installation of technological equipment is needed to support people who are disabled. Automated homes for the elderly require machinery that take up a significant amount of space. Moreover the installation of new equipment and redistribution of space has to be done rapidly so that the process creates minimum disturbance. The construction system that is being developed gives priority to the preservation of the current timber-framed structure and masonry walls, instead of dismantling the inner structure. This way, the refurbishment works are less traumatizing and the elderly and their elderly neighbors can continue to live in their homes. **Method** The construction system is designed for different building contexts to demonstrate its universal applicability. Before being applied in a real situation, the first step was to ensure the refurbishment system's suitability using virtual tools. For this purpose, a BIM-building simulator was used. The preliminary works focused on two different building typologies. The first typology is an apartment building (located in Bilbao) with a common staircase where properties are divided horizontally. The second typology is a terraced house located in London. In both cases, the refurbishment system was compared to traditional refurbishment processes. The parameters of comparison have been refurbishment costs, timing, and quantity of used energy. In both cases the project was personalized for a disabled aged person. **Results & Discussion** A proper refurbishment process grounded on CAD-CAM-BIM and CNC-technology needs to be based on detailed and exact measurements. Moreover, it is advisable to collect data more than once during the refurbishment process because the timber-framed building could move some millimeters. To avoid problems due to measurement errors, the CNC-fabricated pieces should offer measurement tolerances in order to facilitate the assembly and staging process. These first steps of the project – the defining of the refurbishment system – take a long time, since all the joints must be designed in 3D. This delay in the design process will be reduced when a detailed BIM-library is set up. However, the duration of the building site process is clearly shortened and that is why how disturbance is minimized. The construction system enables a flexibility of the inner distribution and the BIM-software helps with the tracking or monitoring of changes in the future. If the health condition of the elderly person requires more care or supply, modifications in the home can be fixed easily.

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