In today’s society the main issue with social housing has been the risk of becoming technically or functionally obsolete over time therefore being abandoned. With this current situation architects are taking into consideration the life span of a building, where the more flexible a building is the better it can respond to the users’ needs in an effective manner, therefore extending its life span.

What is building flexibility? During a buildings life span there are various changes that occur, number of users, change in the user’s needs, innovative technology etc., depending on the buildings system to determine its life span. If a building is flexible it will be able to adapt to these changes while a rigid system won’t, reducing the buildings life span. Flexibility provides a building with resilience assuring that it can adapt with minimal changes in its functional organization, structure etc.

There are various approaches to flexibility where some involve the structure of the building, the internal layout, technology etc. Cristiana Cellucci and Michele Di Sivo explore spatial flexibility in a fixed surface, there are four types: evolutionary spatial flexibility, technological flexibility related to construction techniques, technological flexibility related to the easy maintenance of installations and building sub-systems.

Spatial flexibility in a fixed surface area is the ability to adapt an area using sliding/foldable walls, undefined environmental units and using mobile equipment. With adjustable walls an area can be easily dividing creating two different space one more public and the other more private. The undefined units allow a surface to be used for various activities instead of a specific activity. Mobile equipment like wall mounted foldable bed allows an area to be used one way during the day and another at night.

Evolutionary Spatial Flexibility is about converting/redesigning spaces quickly and with low costs; an example is increasing the surface area by extending the house to a patio by closing it off. The second method involves structural elements that can be placed in gardens/patios to extend the volume of the house. Lastly manipulating the internal structure without affecting the house volume, so dividing a room with a fix wall to create two different units.

Technological flexibility is related to the construction techniques of the way the house was built, so the technics that were used during its construction which then make it easier to restore/maintain. An example is the facades which usually are restored every twenty years and flooring (is restored more frequently).

Technological flexibility is related to the easy maintenance of the installations and building sub-systems is using different techniques during the construction of the building to have easy access to pipes, tubes etc., to be able to maintain these aspects of the house such as lights, water, etc.

The user’s needs, time, psychological needs, function, flexibility, durability, costs, etc. must all be taken into consideration when projecting a building to increase its life span and make it adaptable for any future changes.
Architect: Henley Halebrown Rorrison (HHbR)
Project Year: 2009
Construction Year: 2013/14
Total Area: 950m²
Constructed Area: 795m²
Area/Habitant: 61m²
Stoke Newington co-housing (also known as 1-6 Copper Lane) is located in north London, projected in 2009 by Henley Halebrown Rorrison (HHbR). This is the first co-housing scheme in London and with housing prices up by 13-15% in London it’s a concept that is beginning to be explored. This rise led to many Londoners moving further away from their work, spending a lot of time and money commuting. Co-housing aims to respond to changes in both lifestyles and economics where a composition of private houses live in community and share facilities such as kitchen, dining room, etc.

1-6 Copper Lane was funded by a group of friends who were looking for a more economical way of living in London. This co-housing scheme has six houses (in total seven adults and 6 children live here) which creates a center courtyard from which you can access the shared facilities, such as the hall, workshop space and the laundry. The orientation of the houses is outwards into the gardens, rather than facing inwards around the court. There are four 3-storey houses and two 2-storey houses (3 x 3 bed, 1 x 2 bed, 2 x 1 bed).

In terms of construction the aim was to minimize the ecological footprint by reusing material from the demolition that occurred in the lot prior to construction, renewable energy such as solar panels and sustainable materials to ensure maximum comfort such as triple glazed windows and heat recovery ventilation system. The houses have a concrete structure where the two 2-storey houses are then constructed with a wood frame and brick masonry, while the four 3-storey houses have a wooden structure which is then sealed with thermally modified wood.

http://hhbr.co.uk/work/copper-lane/
http://www.detail-online.com/article/communal-backland-oasis-co-housing-complex-in-london-26099/
http://idox.hackney.gov.uk/WAM/showCaseFile.do;jsessionid=1D95368EC6BC41BE1582401A9FE1ACD7?action=show&appType=Planning&appNumber=2011/2679
Alcabideche, Portugal

Architect: Guedes Cruz Arquitectos

Project Year: 2012
Construction Year: 2012
Total Area: 10,000m²
Constructed Area: 995m²
Area/Habitant: 19m²
The Social Foundation for the Banking Sector promoted the creation of this housing complex designed by Guedes Cruz Arquitects. The Alcabideche Social Complex is aimed to accommodate elderly and less able people with 52 houses and a main support building with common facilities and parking. The architects tried to create a mixture of outdoor spaces with streets, plazas and gardens which then allow the houses to extend itself, creating a balance between communal and private life.

Each house is single-storey which allows easy circulation between spaces (bedroom, living room, kitchen and bathroom), in terms of construction it is a simple cube of reinforced concrete with an elevated translucid roof. The roof has various functions, during the day it reflects the sun and at night acts as a lamp. It is also very functional for ventilation, during the summer it keeps the house cool and in the winter the elevated roof acts as an air bag making the house comfortable to live in. There are various solar panels which produce energy for the under floor heating.

There are two smart systems in this project: recycling of water and residents safety. The recycling of water is produced for irrigation of green areas, washing roads/pavements and reducing the running cost of the complex. Lastly, each house has an emergency bottom which sends a message to the main buildings and turns the roof of the house red, making it easier for people to get help and making the complex a safer environment.