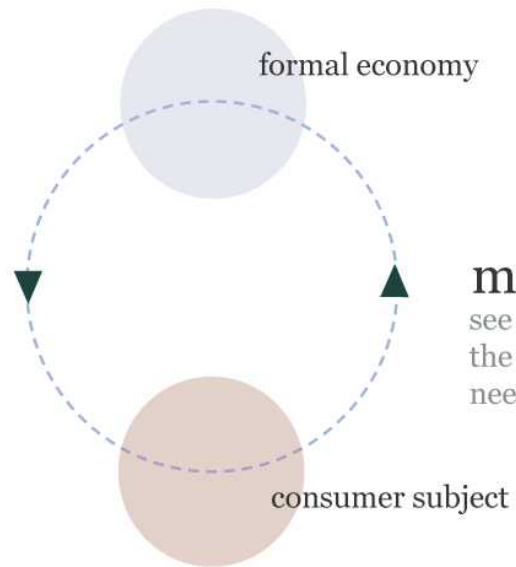


ecosXchange: a prototype for the social economy of **hi-residency**

modern environment :

grid of Modernist formal economy

a simple visualisation of formal economy ecosystem :

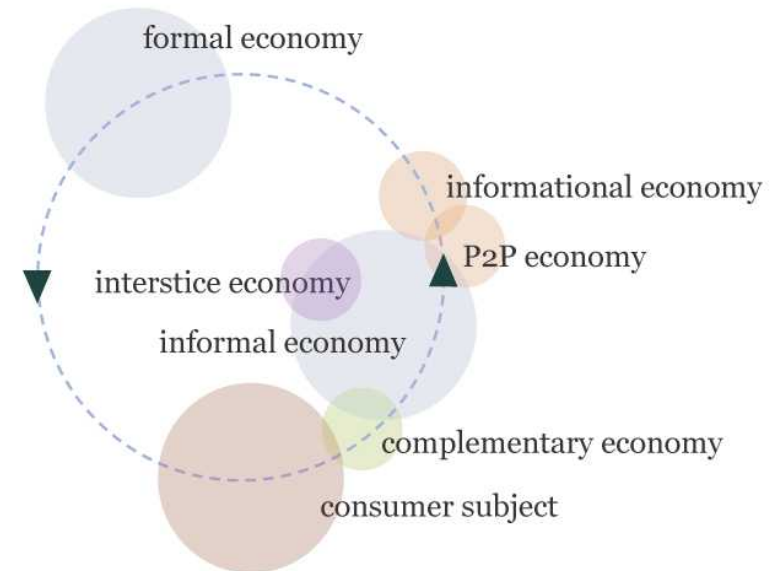


market \neq capitalism

see Braudel, Galbraith etc
the 2 are synonymous but in fact
need not be

autopoietic environment :

parallel markets with feedback processes



ideal is that the way we work, feed, clothe ourselves depends on making choices in the open global market
maximises choice/freedom through direct relationship between subject consumer and global market;
reduces range of feedback processes through its tools:
economic : corporate sector
cultural : mass media
regulatory : public sector

no-one has calculated the ecological cost of extending this economic paradigm to all of the planet's 6 billion + people

parallel and complementary markets are processes of varying scales that create exchanges and produce spaces outside formal economy
The spaces are essential for social and cultural feedback processes
the importance of parallel markets is seen today in situations where the formal economy simply has no means of comprehending the needs of a population or its environment e.g. modern Africa where the informal economy accounts for 70% of the total economy

feedback rich autopoietic environments require parallel markets to produce a micro-scale density of social cultural interactions

feedback processes reduce waste, reduce disparities in society and environment and contain collective ecological footprint



early ecologists used the concept of **emergy**
emergy = embodied energy, memory of energy
emergy = total energy including energy already used
including waste & transport, including hidden externalities.
emergy takes many forms through the pre-fix [em]:
solar emergy, dollar emergy, electrical emergy

It could be argued that modern consumer culture
though wasteful with its monoculture and high ecological
footprint nonetheless has a high latent cultural emergy

to tap this latent emergy we need to create a complementary
culture
a complementary culture is an evolving process,
a form of cultural emergy unfolding in time

to create a complementary culture we need to:
introduce new forms of circulation into society
this requires the use of a complementary currency which acts as:

- 1 a circulating **memory store** so that benefits from individual initiatives
are neither lost nor unaccounted but pool incrementally
- 2 creates a **corresponding value system** so the total ecological
footprint or social emergy can be visualised as part of a
shared cultural map
- 3 embeds an **autopoeitic process** into a social fabric which
reproduces itself and continues to develop generationally

At the CIAM meeting of progressive international architects (1929),
the concept of '**Existenzminimum**' was developed for defining optimum
criterion for the minimum standard dwelling in the industrialisation of
housing construction for the 'machine age' city.
Out of this, Le Corbusier later introduced the concept of
'**maximum architecture**' and the Ville Radieuse [1931] an open plan
city raised on pilotis with roof gardens.
This led to the realisation of the **Unité d'Habitation** (1947-52) as
the prototypical hi-rise dwelling, now common the world over.

With Unité d'Habitation the cellular unit comes from its provision
of a minimum floorspace of 14 sq metres of living space per person.
From this core cell a spatial matrix is built up to a modular
compositional system called the Unité

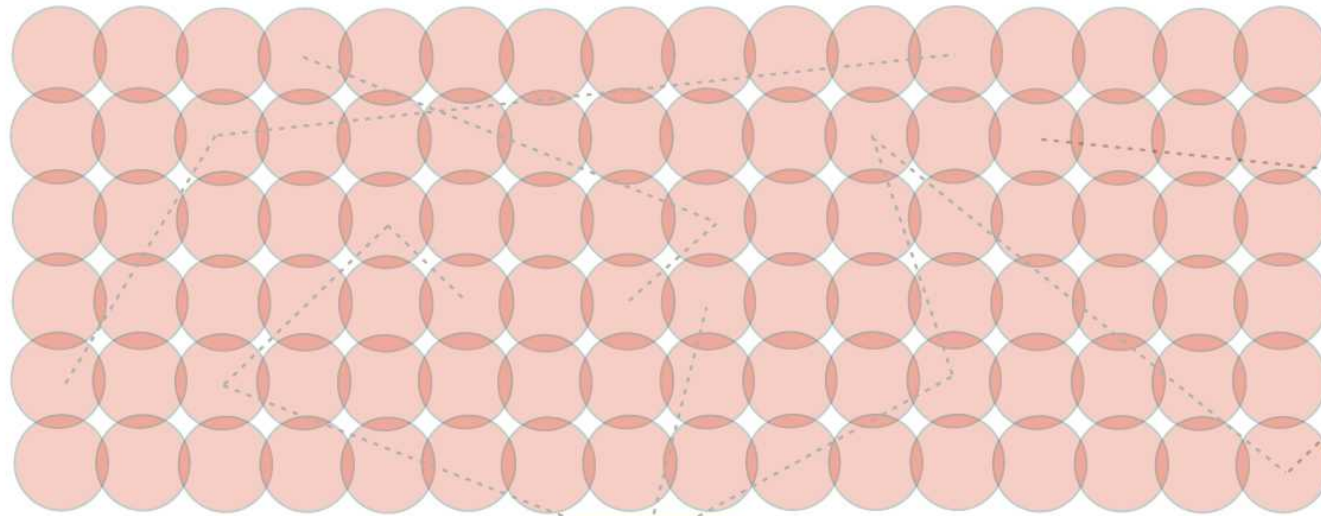
The carbon economy of Unité as a living metabolic process:
1000 people with 23% body mass as carbon = 14 tons of carbon

Produces annually about 8 tonnes CO₂/person = 8000 tons CO₂
To be sustainable : for 1 planet living, the Unité needs to
produce **2000 tons of CO₂** maximum annually





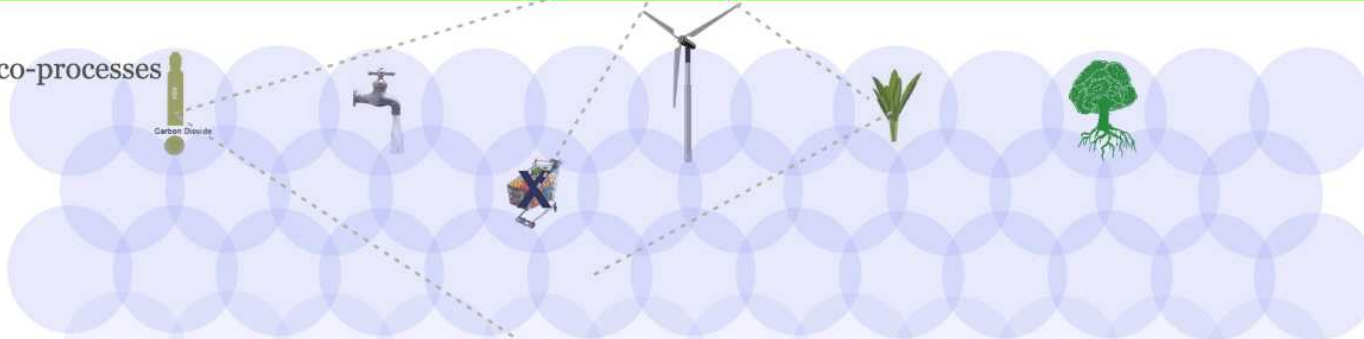
autopoietic Unité d'Habitation template



complementary bank

6 hectare park

evolving matrix of eco-processes



ecosXchange is not a programme for technically the reducing carbon footprint of the Unité at Nantes, Maison Radieuse. It is about the creation and cultivation of an autopoietic culture, one that generationally increases the density of interactions between the cells of the Unité to produce a closer relationship between the resident /consumer and the habitat /environment. ecosXchange is conceived as an inhabitant so it grows up in the Unité where it builds up its memory store through its social interactions. The matrix of exchanges between ecosXchange the virtual resident and the cells of the Unité have positive + or negative - feedback values. In a software programme these values accumulate to enable the creation of a currency which circulates as exchangeable tradeable points in the complementary economy of the Unité. The currency draws its value from the savings made by reduction in the ecological footprint of the Unité, through the eco processes and exchanges. In an autopoietic environment these would reproduce & evolve generationally to maintain the circulation of the complementary economy.





Maison Radieuse, Rezé, Nantes

