



From Passive House to Active Residents

Co-housing and the circular city

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From Passive House to Active residents

What is co-housing (CPO)
What is the circular city (CC)
Specific features relating CPO to CC

- social opportunities
- engineering opportunities
- planning opportunities


Lessons learned
Conclusions up- and outscaling?


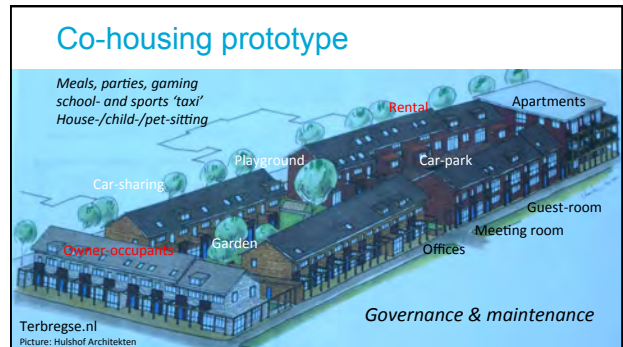


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Co-housing (re-)emerging in Europe

	French	English	German	Dutch	Spanish
CO	- Habitat group - Habitat partagé - Caballat - Cooperatives of habitats - Habitat communautaire	- Cohousing - Housing co-op - Intentional communities	- Wohngemeinschaft - Gemeinschaften - Wohnzweck (BZG - getrennt)	- Samenwonen (Planend) - Wooncoöperatie (leer, openend) - collectief, particulier - opvattingen - centrale aangek.	- Viviendas cooperativas
AUTO	- Habitat participatif - Habitat partagé - Auto-promotion - Auto-construction - request	- Self-help housing - Self-managed - housing - request	- Bauzwecke - Hausbesitzer	- Zelfbouw - huizen in eigen - beheer - huizen	- autoconstrucción - Chalea
ECO	- Ecohabitat - EcoVillages - Ecoquartiers	- Ecohabitat - Eco-village - Eco-district	- Ökodorf	- Eco-dorp	- Ecoberrio

[Bresson & Tummers, 2013] 





Environmental claims

LILAC means **Low Impact Living Affordable Community**.
We are the UK's first affordable ecological cohousing project: a community of 20 households and a common house, based in Bramley, West Leeds.
We are a pioneering and **award winning project**.


The aim of LILAC is to:
Reduce our impact on the environment
Respond to the housing crisis
Make a positive contribution to the surrounding community.

For news of upcoming socials click here. Everyone welcome to come along and meet us, find out more about the project, or just have a pint and a natter.



All Photos in this website are courtesy of [Andy Lard](http://lilac.coop/) (andyford.co.uk) <http://lilac.coop/>

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Sharing = reducing?


Same amount of washing;

- Label AA++ machine;
- Use of rainwater;
- 'Extra' or 'in place of'?

Swedish study: 1ton CO2 reduction through everyday practices



[Stevenson et al, 2013; Kido, 2011]



assessing 'real' performance

Current EP calculation models:
 Building related
 Standardized for social practices
 Different requirements for mixed functions

Shared spaces?
 Boundaries?

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BODY OF KNOWLEDGE Co-Housing & Energy

Baborska-Narozny, M., F. Stevenson & P. Chatterton A Social Learning Tool - Barriers and Opportunities for Collective Occupant Learning in Low-Carbon Housing. Sustainability in Energy and Buildings, 2014/ 10.
 Chatterton, Paul. Towards an Agenda for Post-Carbon Cities: Lessons from Lilac, the UK's First Ecological, Affordable Cohousing Community. International Journal of Urban and Regional Research, 2013.
 Haquebord, Jeanet, and P.M. Duurzame Stadsvoases. Wooninnovatiereeks, 2009.
 Kido, Hiromi, and Yusuke Nakajima. Predicted Energy Conservation by Use of Common Areas in Co-housing. 6. Helsinki, Finland: Kogakui University, 2011/10/09.
 Lietart, Matthieu. Cohousing's Relevance to Degrowth Theories. Journal of Cleaner Production, no. 18 (2010)
 Locatelli, Daisy, Francois Desrués, and Jean-Marc Biry, eds. Guide Pratique de l'Auto-Promotion. Strasbourg: Association Eco-Quartier Strasbourg et CAUE Bas-Rhin, 2011.
 Marckmann, Bella, Kirsten Gram-Hanssen, and Toke Haunstrup Christensen. Sustainable Living and Co-Housing: Evidence from a Case Study of Eco-Villages. Built Environment 38, no. 3 (2012)
 Palojarvi, Ansa, Jarkko Pyyssalinen, and Mia Saloranta, eds. Inspiring Stories From Ecovillages: Experiences With Ecological Technologies And Practices. Helsinki, 2013. www.balticecovillages.eu
 Purtik H, Zimmerling E and Welpel IM (2016) Cooperatives as catalysts for sustainable neighborhoods – a qualitative analysis of the participatory development process toward a 2000-Watt Society. Journal of Cleaner Production 134: 112–123.
 Sanders, Fred. Duurzame Ontwikkeling door Collectief Bewonersinitiatief Leidraad Voor Professionals Om Bewonersgroepen Aan de Duurzameleidsopgave Te Verbinden. Vol. 2014. Dissertation TU Delft
 Stevenson, Fionn, Hannah Baker, and Kale Fewson. Cohousing Case Studies in the UK: Is Sharing Facilities Really Resourceful? Paper presented at PLEA, Munchen, 2013.

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What is circular city?

- Closed loops
- Flows
- Metabolism
- ~~Waste~~
- Up-cycling
- Value creation
- > System boundaries?

Daughter of sustainability
 [Brundland 1987]
 Sister of :
 energy transition, recycling,
 low-impact, climate change
 mitigation,

> More questions than answers

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Planning the circular city

Co-housing as Living labs,
 Although not 'circular'
 Provide a holistic model for circular approach to the environment.

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Rainwater recycling



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Low-tech; DIY esthetics

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Water recycling: system boundaries?

- individual
- district

Long term resilience?

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Engineering opportunities: cluster

Cluster as intermediate scale

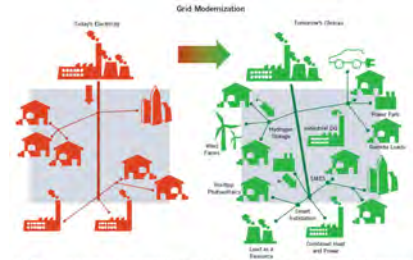


Fig. 1. The IEEE's vision of the smart grid (under distributed generation, information networks, and control coordination), a drastic change from the existing utility configuration.

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Assessing demand side: L. Tummers, forthcoming

demand	Groene Mark (1990, Zutphen)	1. Tummers (2000, Zwolle)	February 2016 (2015, Leids)
# units, tenure	77 units (14 rental plus 3 private levels of ownership)	13 rental units (plus some workshops)	24 rental units (plus workshops)
Sharing resources	On-site water purification, Community house, Bicycle shed, playground & green common	Community rooms, bicycle shed, playground	Community rooms, laundry On-site water purification, roof terrace, bicycle shed, vegetable garden
Learning process	Learning from architects' earlier experience, self-contracting Common House based on evaluation of mistakes of home building	High ambitions for consensus, limitations of negotiation, Prioritizing community building (dormable spaces)	Self-built, self-operation, outreaching in monthly workshops and tours
Design	Community building prevailed over environmental criteria. Relatively large share of roof area. Road orientation for solar.	Part Cluster part terraced, reduced parking space	Clustered multi-storey, straw bale self-build. Balconies/semi-collective spaces
Engineering	"Regulatory system" choices before EPC. None received label A or B. Land available for self-heating exchange	High insulation prevents over sophisticated equipment" (PVC) Individual HR++ heating	Energy neutral, collective pellet heating, collective solar
Self-management	Monitoring and Billing system for common house & land, & grey water not energy	Individual for energy matters	Monitoring and Billing system from common spaces

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Social opportunities: Collective learning

[Baborska-Narozny et al, 2014; Marckmann et al, 2012]



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Social opportunities: expertise



TU Delft Cartoon: Sandra de Haan, 2004

Engineering opportunities: Self-management



High-tech

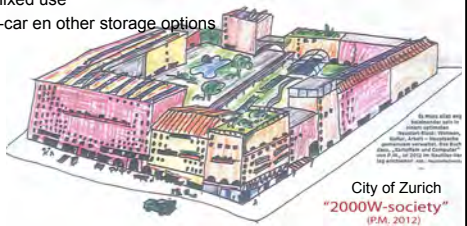
Long term resilience?

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Planning Opportunities: location

- Choice of location
- Insertion in urban fabric
- Mixed use
- e-car en other storage options



City of Zurich
"2000W-society"
(PM, 2012)

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From Passive House to Active residents: 6 lessons

1. Sharing installations such as laundry, or other facilities
2. Institutionalise collective learning
3. Residents remain in the lead during the whole lifespan of the project, in the management, administration and maintenance.
4. Design and dimensions of cluster: the intermediate scale, urbanism.
5. Engineering utilities and recycling systems for self-operating and monitoring
6. Reducing transport-dependency, for example by integrating services or employment; and by sharing means of transport or combining trips.


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How to harvest the co-housing experiences for the circular city?

Cluster as intermediate scale



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Publications Co-housing L. Tummers

Co-Housing: a double shift in Roles?
(in: Buckingham & LeMason : Climate Change through Gender Lens Routledge; 2017)

Professionalizing Co-housing (with dr M Fernandez, ENHR 2016)

Critical Review of Co-housing Research (Journal for Urban Studies, online 2015)

Co-housing in the Netherlands (Wohnbund, Jovis, 2015)

Understanding co-housing from a planning perspective (Journal for Urban Research March 2015)

Taking apart Co-housing
special issue of the Journal for Urban Research (March 2015, re-published by Routledge 2016)

L'habitat participatif autogéré une nouvelle stratégie urbaine? (With dr S. Bresson in: Metropoles 2014)

Co-housing, pioneers of eco-engineering (ENHR2013)

Collectively Commissioned Housing: new urban qualities through residents self-management
(in: Qu & Hasselaar: Making Room for People; Techne Press 2011)


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Method Co-housing and the circular city

- Literature review
- Interviews
- Observations and project visits
- Case studies:
 - International
 - Dutch in-depth studies
 - Briefings for Building license
- Environmental programs
 - valuation reports
 - Professional experience



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