

# NZEB SKILLS FOR AFFORDABLE HOUSING PROVIDERS

## SOFT SKILLS & SMART CONTRACTING

20 February | Brussels  
House of the Dutch Provinces



PROF / TRAC



***“The affordable housing gap cannot be filled unless inefficiencies in construction are addressed”***

**...let alone affordable nearly-energy zero housing.**

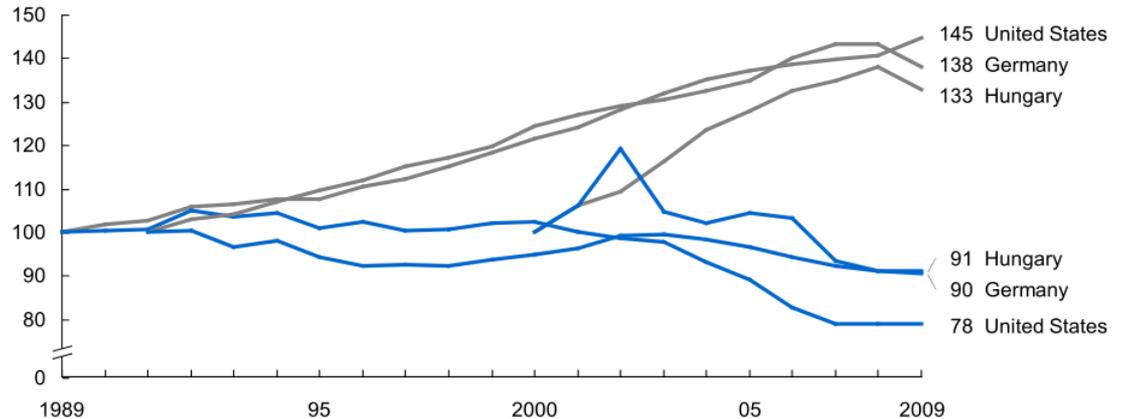
**“Measures are needed such as value engineering and efficient procurement”**

### Labor and capital productivity in construction have been falling in developed economies for 20 years

#### Labor productivity

Value added (volume)/labor input (hours worked)

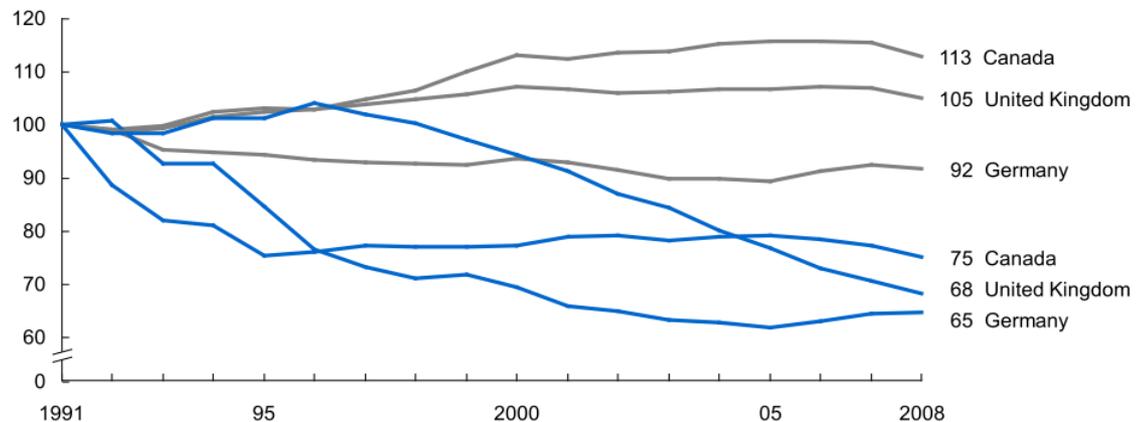
Index: 100 = 1989 for United States, 1991 for Germany, 2000 for Hungary

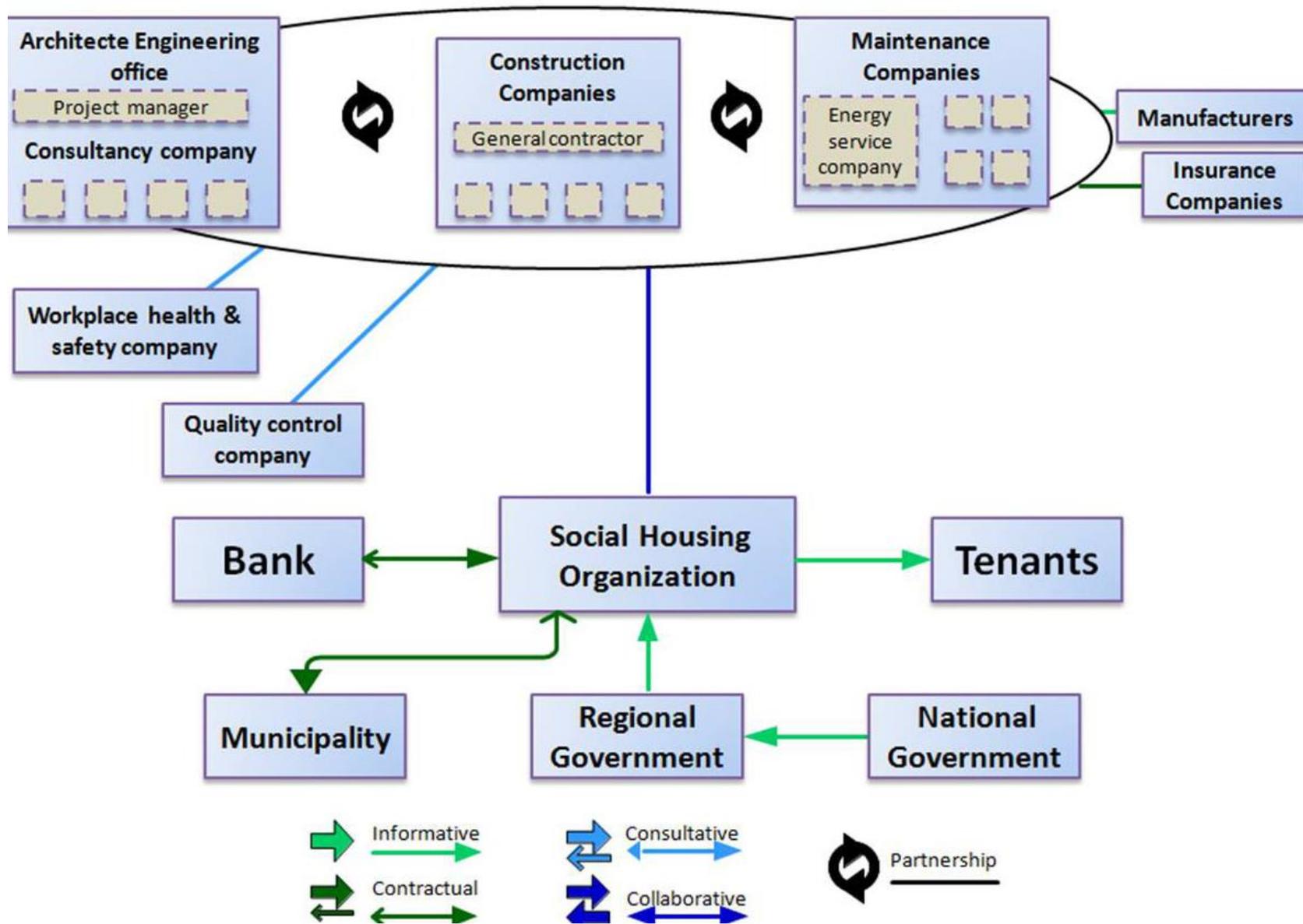


#### Capital productivity

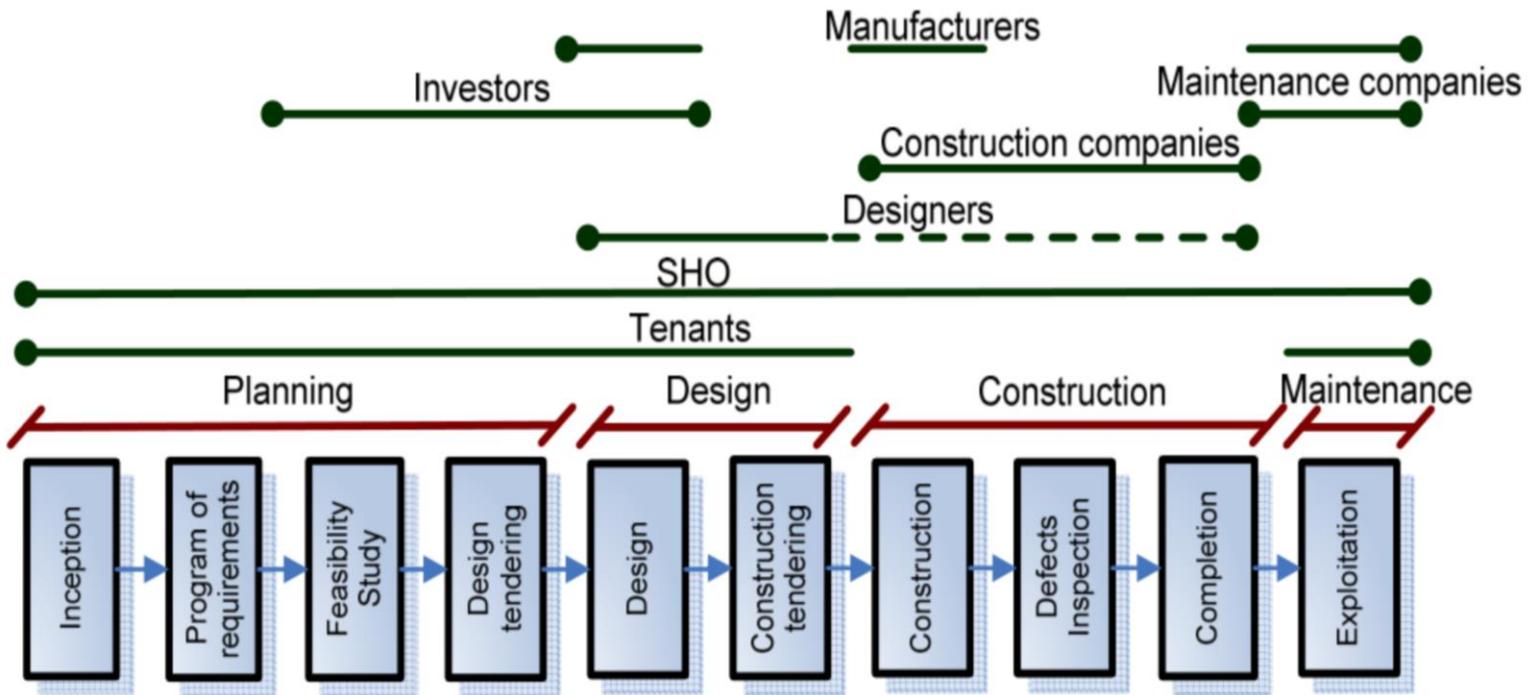
Value added (volumes)/capital stock (volumes)

Index: 100 = 1991





Source: Shelter project



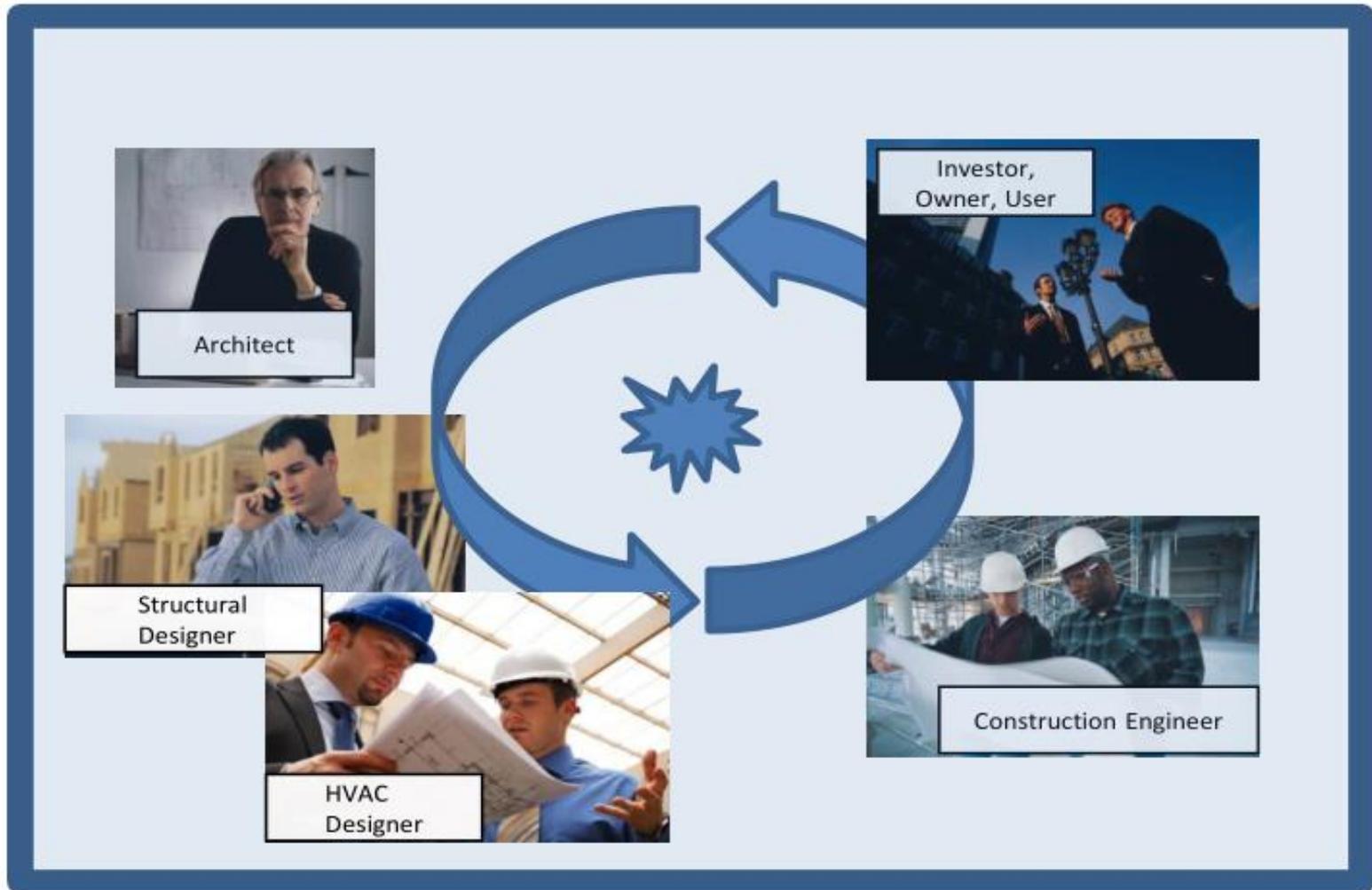
Source: EU project Shelter

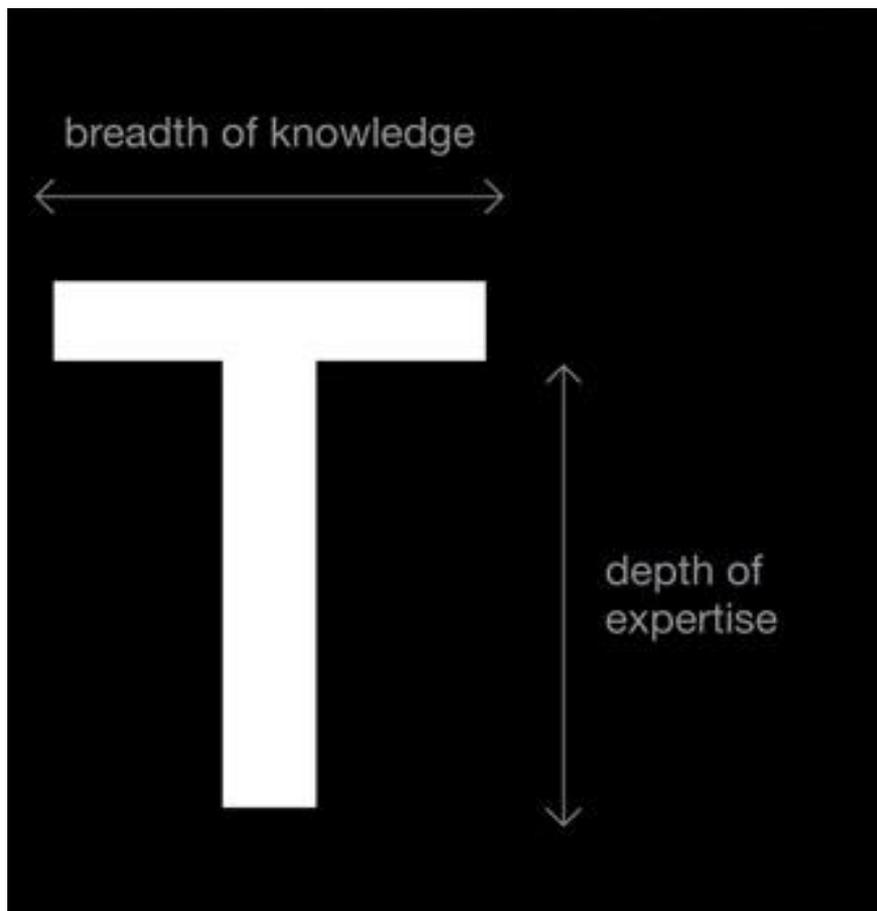
# Value of PROF/TRAC

Fill the knowledge and skills gaps of professionals in nZEB.

- A lack of tradition for **integrated design processes**.
- Low readiness for adoption of **new collaborative, organizational and educational models**.
- **Interdisciplinary design** is blocked by (market and financial) interests which prefer linear, instead of integrated, design approach.

New technical skills + soft skills required to work in integrated teams. Also from contracting party.





- nZEB require new skills from soc. and aff. housing professionals
- setting-up and working in cross-disciplinary nZEB project teams;
- knowledge about integrated designs, best value-approaches
- possess interdisciplinary skills.
- need to define and formulate needs, performances, incentives and value.
- KITS - Know & Involve Tenants-Skills

# Company A

TECHNOLOGY, INTERDISCIPLINARY SKILLS AND PROFESSIONS	Architect	Engineer		Project manager			Project developer			Construction site supervisor		Building owner			Financial manager				Procurer			
	5	5	3	4	5	3	4	5	4	5	1	2	5	2	3	4	5	2	3	4	5	
<b>INTERDISCIPLINARY SKILLS</b>																						
Communication	Orange	Orange	Yellow	Orange	Orange	Yellow	Orange	Orange	Orange	Orange	Blue	Green			Yellow	Orange	Orange			Yellow	Orange	Orange
Information management	Orange	Orange	Yellow			Yellow			Orange		Blue				Yellow	Orange	Orange			Yellow	Orange	Orange
Collaboration	Orange	Orange	Yellow	Orange		Yellow	Orange	Orange	Orange	Orange	Blue				Yellow	Orange	Orange			Yellow	Orange	Orange
Quality assurance	Orange	Orange	Yellow	Orange		Yellow	Orange	Orange	Orange	Orange	Blue	Green			Yellow	Orange	Orange			Yellow	Orange	Orange
Sustainable architectural design	Orange	Orange	Yellow	Orange		Yellow	Orange		Orange		Blue				Yellow	Orange	Orange			Yellow	Orange	Orange
Integrated design	Orange	Orange	Yellow	Orange		Yellow	Orange		Orange		Blue			Green	Yellow	Orange	Orange			Yellow	Orange	Orange
Sustainable building materials	Orange	Orange	Yellow	Orange		Yellow	Orange		Orange		Blue			Green	Yellow	Orange	Orange			Yellow	Orange	Orange
Sustainable installation materials	Orange	Orange	Yellow	Orange		Yellow	Orange		Orange		Blue			Green	Yellow	Orange	Orange			Yellow	Orange	Orange
Environmental (indoor) quality	Orange	Orange	Yellow	Orange		Yellow	Orange		Orange		Blue			Green	Yellow	Orange	Orange			Yellow	Orange	Orange
Economics	Orange	Orange	Yellow	Orange		Yellow	Orange		Orange		Blue			Green	Yellow	Orange	Orange			Yellow	Orange	Orange
Procurement	Blue	Blue	Yellow	Orange		Yellow	Orange		Orange		Blue			Green	Yellow	Orange	Orange			Yellow	Orange	Orange

# Company B

TECHNOLOGY, INTERDISCIPLINARY SKILLS AND PROFESSIONS	Architect		Engineer		Project manager			Project developer			Construction site supervisor			Building owner				Financial manager					Procurer					
	4	5	4	5	3	4	5	3	4	5	3	4	5	2	3	4	5	1	2	3	4	5	1	2	3	4	5	
<b>INTERDISCIPLINARY SKILLS</b>																												
Communication				Orange											Orange	Orange												
Information management				Orange											Orange	Orange												
Collaboration		Orange					Orange				Orange				Yellow													
Quality assurance		Orange					Orange				Orange				Green	Yellow	Orange	Orange	Blue	Green	Yellow	Orange	Orange					
Sustainable architectural design						Yellow	Orange				Yellow				Green	Yellow												
Integrated design		Orange					Orange				Yellow	Orange			Green	Yellow												
Sustainable building materials		Orange					Orange				Yellow	Orange			Green	Yellow												
Sustainable installation materials	Yellow						Orange				Yellow	Orange			Green	Yellow												
Environmental (indoor) quality	Yellow	Orange					Orange				Yellow	Orange			Green	Yellow												
Economics		Orange				Yellow	Orange				Yellow	Orange			Green	Yellow												
Procurement		Blue				Yellow	Orange				Yellow	Orange																

# Examples – technical skills

AVS, the Spanish Association of Public Social and affordable housing and Land Providers, designed an **online course on energy efficiency renovation and financing**.

FederCasa, the Italian Federation of Public Housing Providers, developed a **module on implementation and management of social housing projects to nearly zero energy**.

Aedes, the Dutch association of social housing providers, started six years ago to help to **switch the contracting skills and culture** of its members. From developer or project management towards a more directive role of principalship and market maker.

From management to direction	
From	To
Designing in detail	Encouraging the contribution of knowledge by the market
Contracts based on technical requirements	Contracts based on functional requirements (performance-oriented)
Lowest price	Price/quality/performance
Decentralised purchasing	Coordinated purchasing
Many types of small contracts	Uniform (standard) contracts – integrated contracts

# Examples – Soft skills

The Project Kortrijk: The importance of **good communication between the actors - in particular with tenants - cannot be underestimated.**

- demonstrate the advantages and implications of the renovation projects **from the very beginning.**
- inform tenants and propose **collaborative actions** with them to reduce consumption.
- Aside from professionally trained construction workers, having architects, engineers and housing managers **who understand each other and the tenants** is essential in a renovation.
- In the use of renewable energy, **training the owners/tenants is crucial** on how to use the devices and to monitor performance.

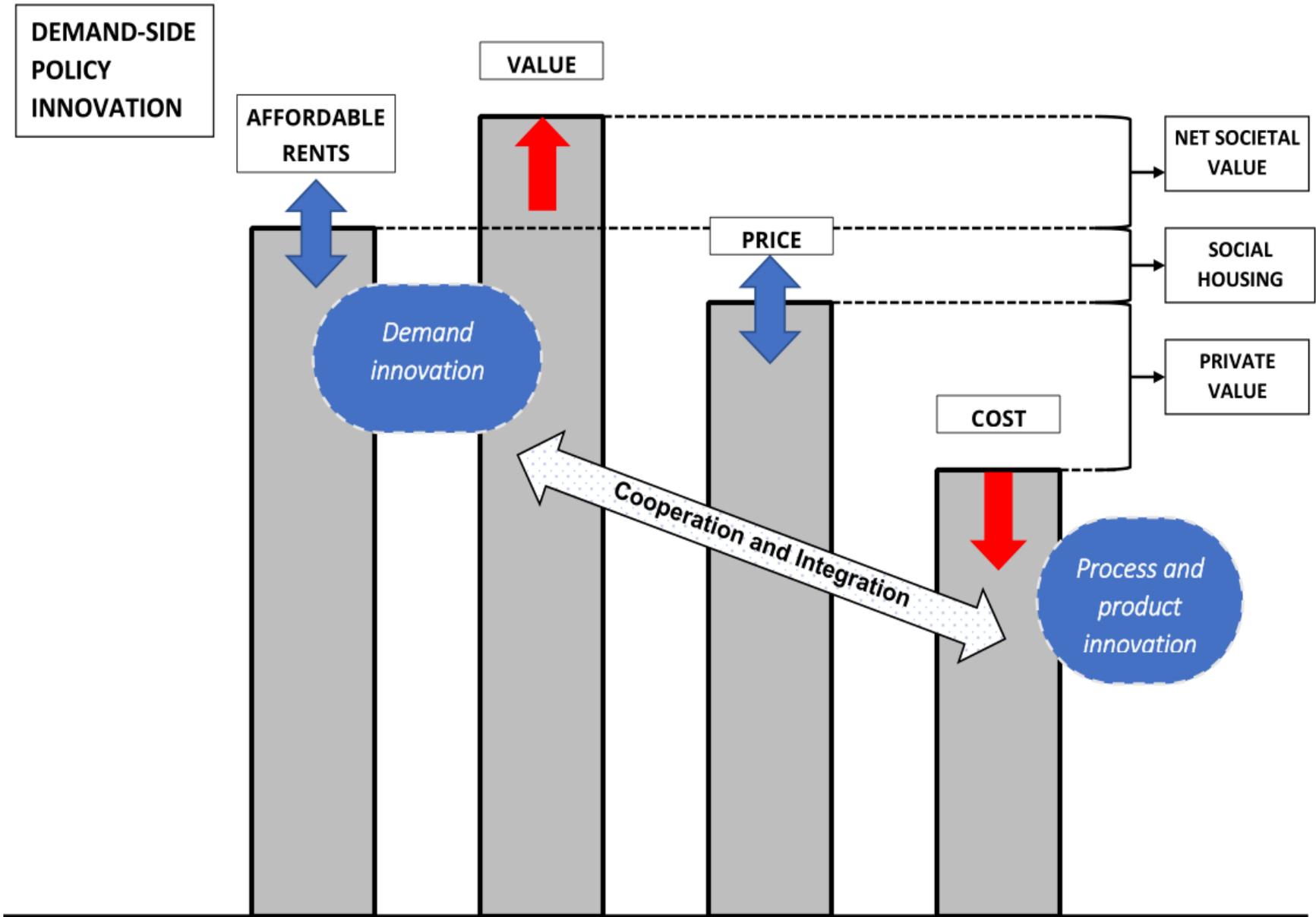
Source: The Project Kortrijk – EU Ecolife Project. Winner of the European Responsible Housing Awards in 2016.

THANK YOU



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# Recommendations (Shelter)

- **Involve construction and maintenance companies during the design phase** in energy renovation projects.
- Define lists of legal and recommended **award criteria** for energy renovation projects.
- Make use of **performance-based specifications**.
- Define **separate** (performance-based) **contracts** for specific works in energy renovation projects.
- Implement **professional certificates** at European level.
- Implement actions that make a **direct link for the tenants between their behavior and the energy bill**.