



Co-funded by the Intelligent Energy Europe Programme of the European Union

## Financing models for school renovations

Armin Knotzer  
AEE – Institute for Sustainable Technologies, Gleisdorf/Austria



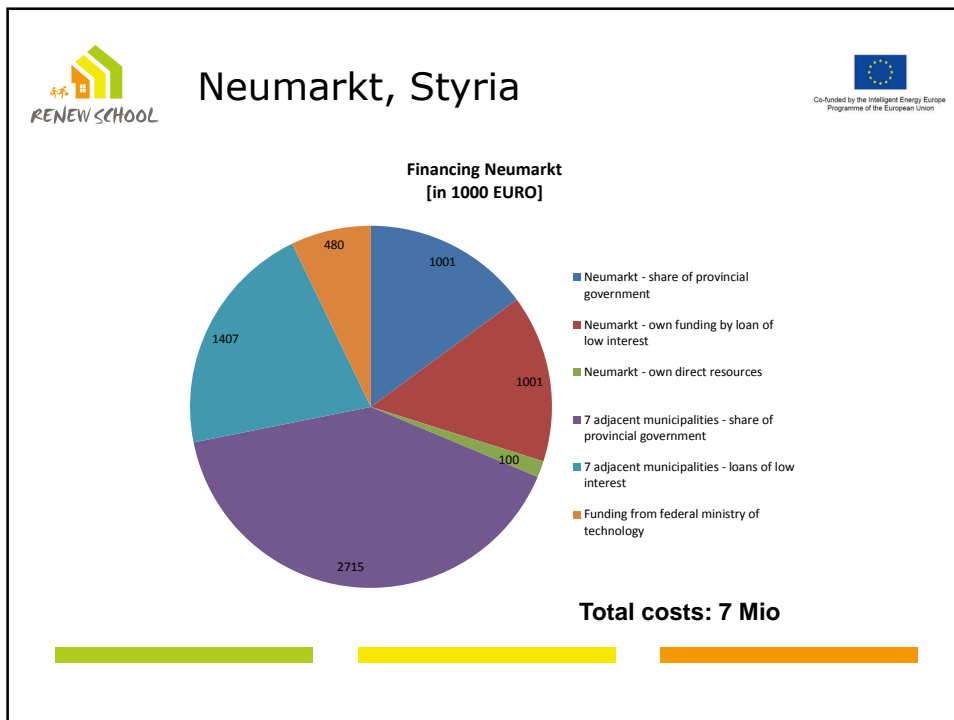
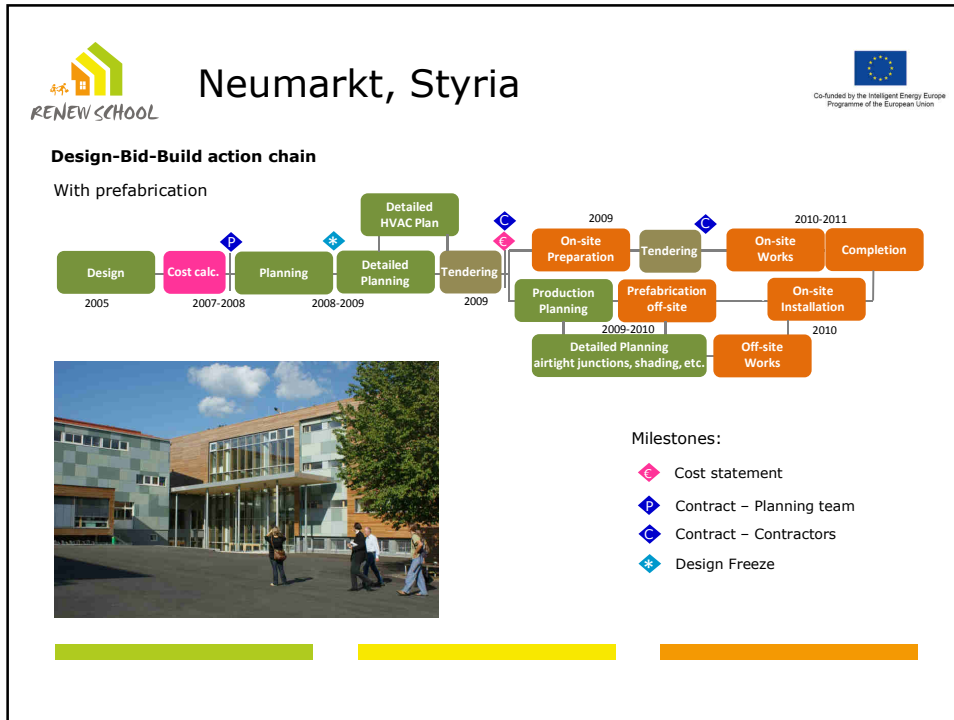
[www.renew-school.eu](http://www.renew-school.eu)

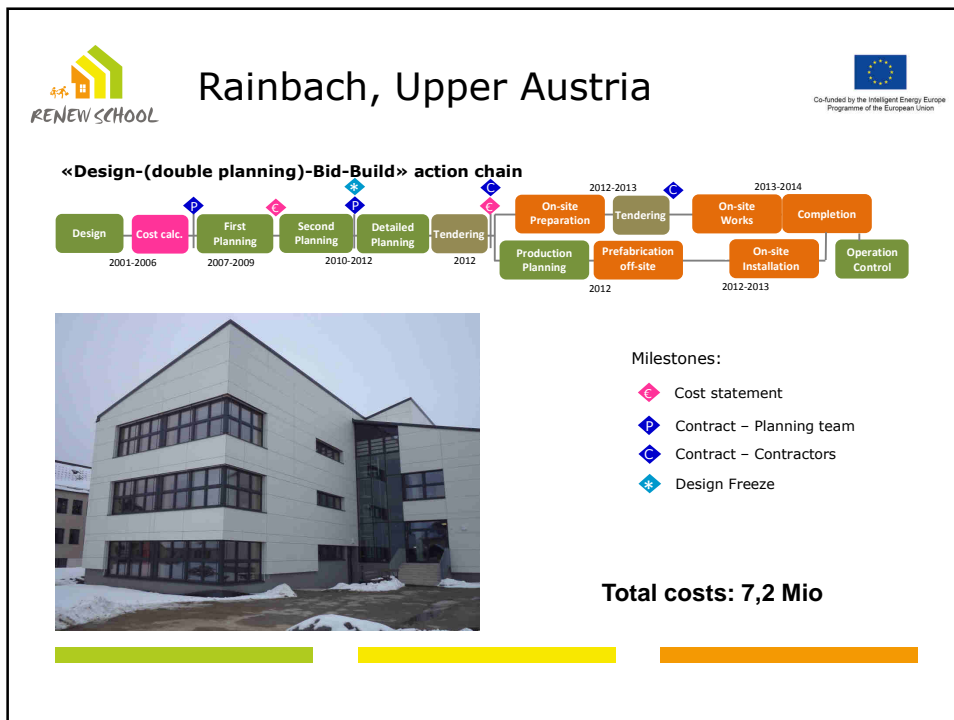
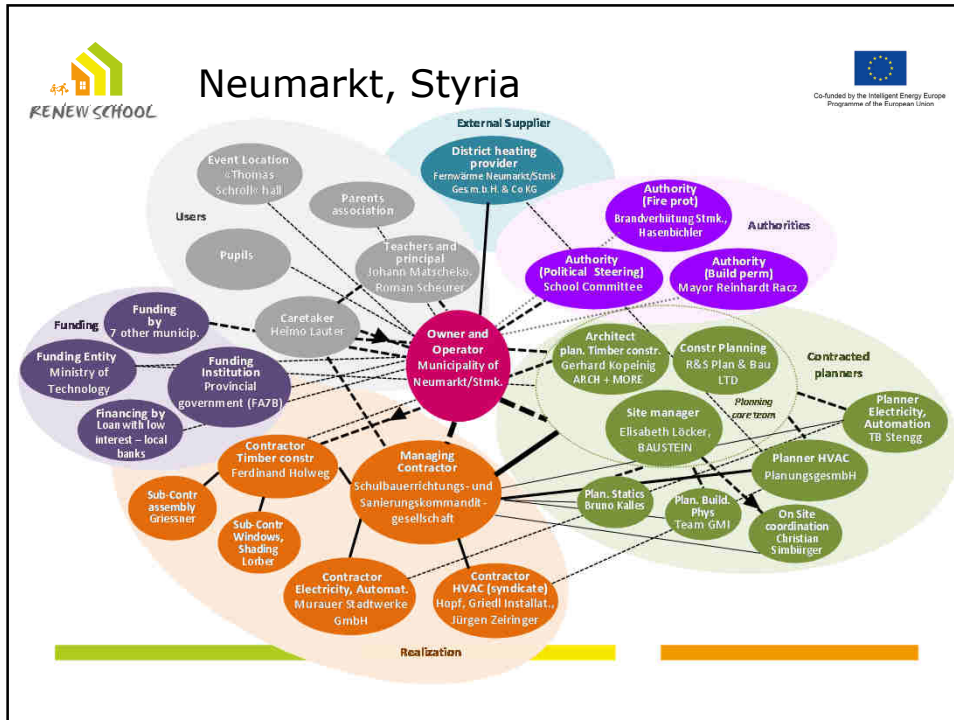


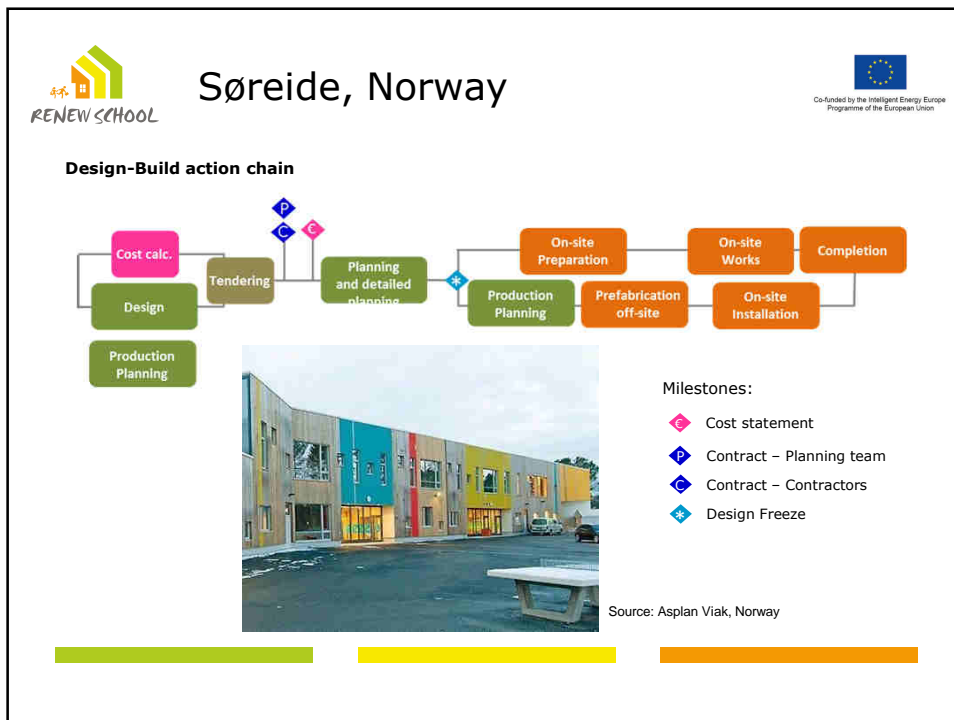
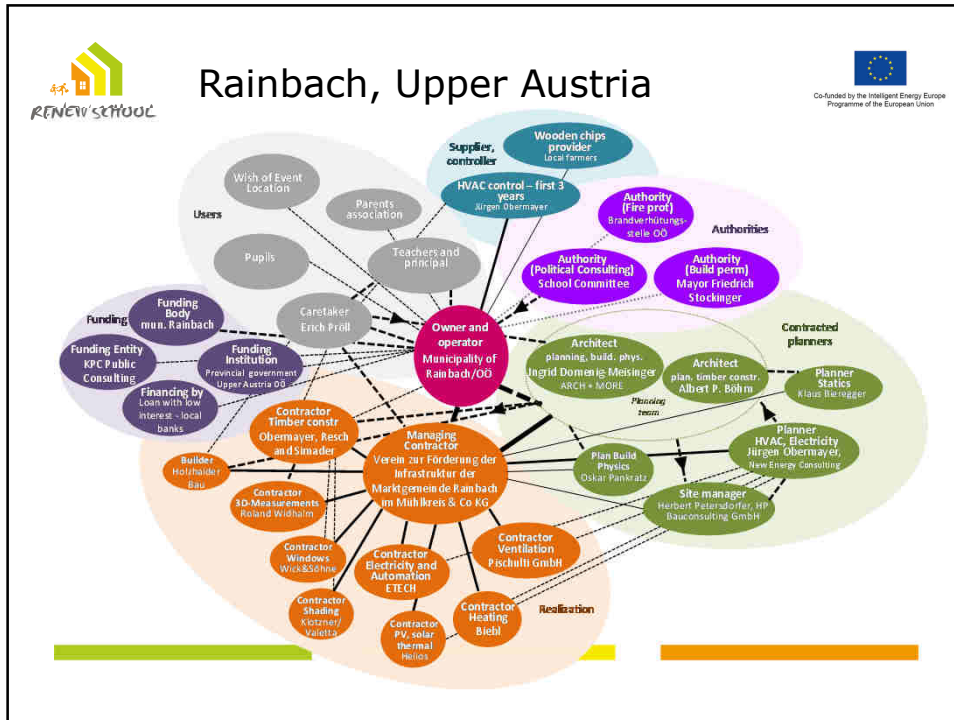
Co-funded by the Intelligent Energy Europe Programme of the European Union

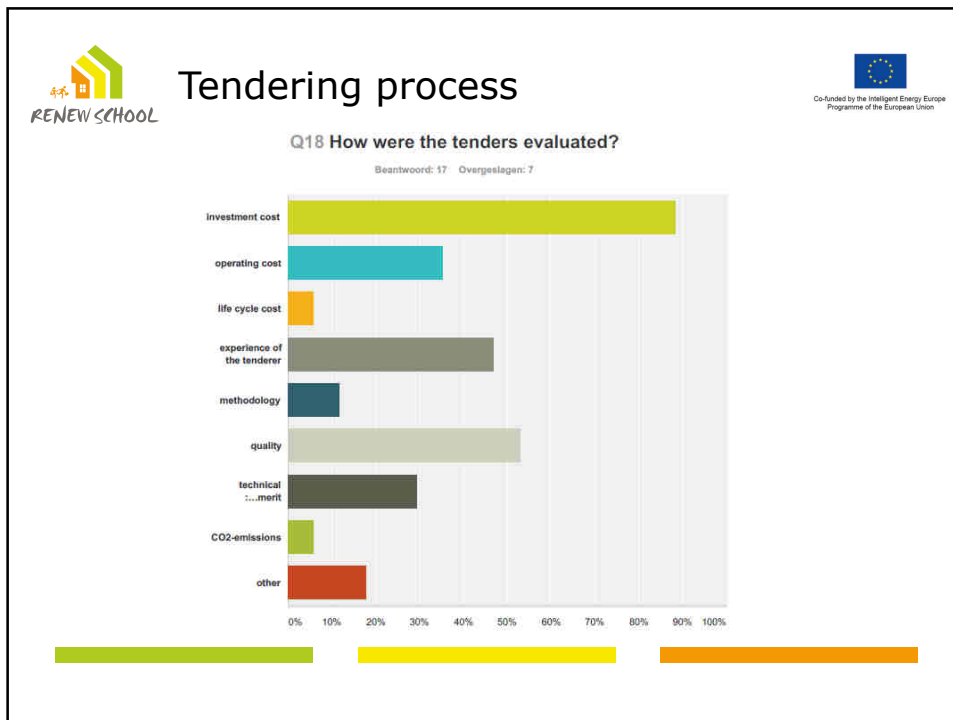
## ... process quality and cooperation are the crucial points ...














 **Enablers for change – cooperation and communication**   
Co-funded by the Intelligent Energy Europe Programme of the European Union

Renovation process could be improved by:

- Strong driving force within the project team
- Sufficient application of Building Information Modelling (BIM) → Clear agreement on how risks are shared
- All actors cooperate from the very beginning
- Clear, target oriented and transparent communication – physical meetings and “atmosphere of trust”
- Take the users seriously in the process as early as possible
- Establish information and documentation management
- Ensure incentives and share benefits and risks





## Financing – what did we learn?



- A **mix of financing sources**: municipal funds/public capital, subsidies and grants, preferential loan programmes and VAT reductions, only few EU-funding like EFRO
- There are several **years needed** to develop the financial model
- Comprehensive renovation typically requires **high upfront investment**
- Tender procedures - the **lowest price principle** is still winning, before the experience of the offering company
- There is a tendency for the involvement of private investments (e.g. ESCO – **EPC**)
- **Additional funding** is possible when 'Best practice' examples, so called frontrunners, are carried out



## Investment costs of frontrunners



School	Type of project	EURO / m2 GFA (net cost)
Backsippan Preschool	New building	2400
Capriva Del Friuli Kindergarten	New building	2000
Detmold Vocatioani College	Renovation	809
Heusden-Zolder Adult School	New building	3034
Kalmthout Kindergarten	New building	2869
Kekec Kindergarten	New building	1308
Lavrica Kindergarten	New building	1323
Neumarkt School Center	Renovation	950-1450
Rainbach Primary and new Secondary School	Renovation	1048
Reutershagen Gymnasium	Renovation	2126
Risar Technical College	Renovation	4993
Schwanenstadt Secondary School	Renovation	951
Siemianowice Kindergarten	New building	610
St. Leonhard Primary School and Kindergarten	Renovation	1092
Storžek Kindergarten	New building	1667
Søreide Primary School	New building	3006
Tišina Kindergarten	New building	2090
Vibeengen Primary School	New building	3313

Average cost for renovation: 1674 EURO/m2 GFA



## New financing opportunities



### ELENA (EIB) - advice by EU

<http://www.eib.org/products/advising/elena/index.htm>

European Local Energy Assistance run by the European Investment Bank (EIB), covers up to 90% of the technical support cost needed to prepare, implement and finance the investment programme

### Energy performance contracting (EPC) – kind of PPP

[http://www.managenergy.net/lib/documents/868/original\\_3-221-13\\_Bullier\\_-\\_Alternative\\_financing.pdf](http://www.managenergy.net/lib/documents/868/original_3-221-13_Bullier_-_Alternative_financing.pdf)

An EPC is an integrated contract with an Energy Service Company (ESCO); construction companies and utilities are an emerging player in the EPC market for deep renovation - pooling or bundling is interesting



## Enablers of change - financing



Renovation process (and prefabrication) could be improved by:

- Consider the prefab renovation modules as '**stock products**' within the **master-planning** of a building portfolio
- Create volume by **aggregating buildings** in one tender
- Possibility of '**Competitive Dialog**' for tendering – EU-Guideline
- Tender requirements for CO<sub>2</sub>-reduction, **life cycle** analyses and "resource-sustainability" lead to innovative constructions
- Prefabrication technology is a financially viable solution, thus enabling a short on-site execution time
- Consultancy of **experienced experts**

→ **A very early financial and technical planning results in the best renovation qualities!**





[www.renew-school.eu](http://www.renew-school.eu)

