



BUILD UP Skills CrossCraft

Qualification scheme for cross craft trainings of professionals in the construction industry

Austria



Overview



The objective of “**BUILD UP Skills CrossCraft**” was to develop a qualification scheme for **cross craft trainings of professionals** in the construction industry (e.g. foremen, craftsmen,...).

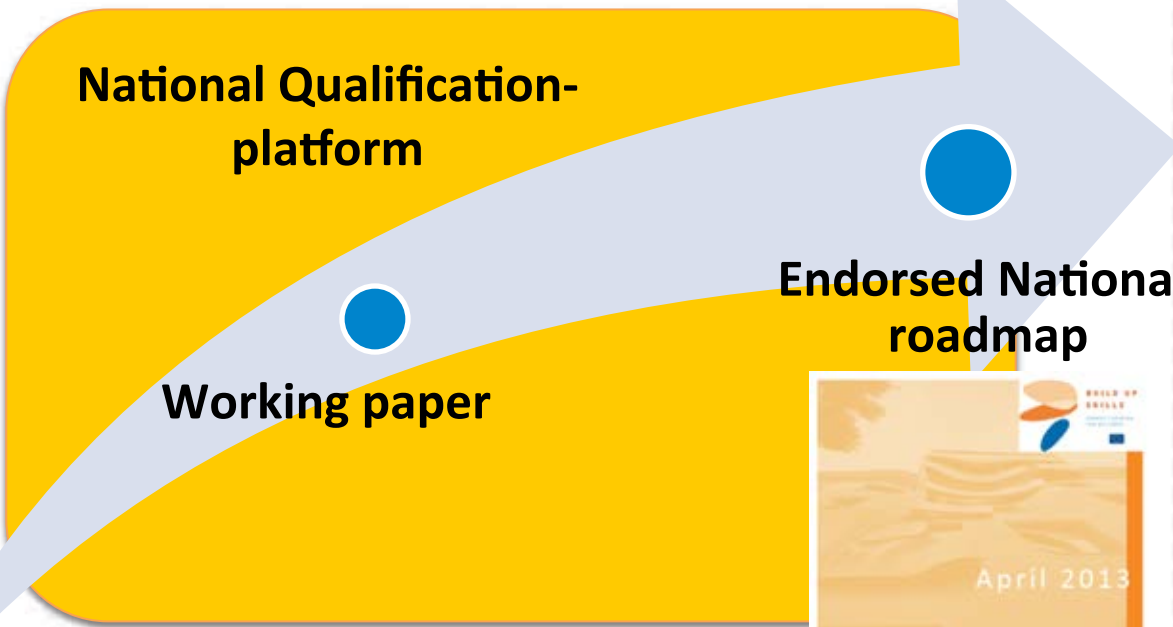
By providing this qualification scheme, the project aimed to **improve the competence of blue-collar workers** in the Austrian construction industry, necessary for the **achievement** of the **nearly zero energy building** standard.

To warrant the large-scale and long-term approach, the qualification schemes were **implemented, monitored and evaluated in pilot courses** all over Austria.



BUILD UP Skills Initiative

National process



New CrossCraft trainings
(Development and implementation)

Endorsed National roadmap



BUILD UP Skills CrossCraft
Österreichische Aus- und Weiterbildungsinitiative für die optimale Umsetzung von Energieeffizienz und erneuerbaren Energien in der Bauwirtschaft

Kompaktkurse österreichweit:

- ⊕ Baustellentraining „Alles dicht?“
3 Stunden vor Ort
- ⊕ Wir bauen Energieeffizienz
Nächste Runde
- ⊕ Der Baustellen-Qualitäts-Coach
- ⊕ Sanierung alter Bausubstanz
Vertiefungskurs
- ⊕ Haustechnik in der Baustellenpraxis
Vertiefungskurs

Status quo report

BUILD UP Skills Austria (11/11 – 05/13)

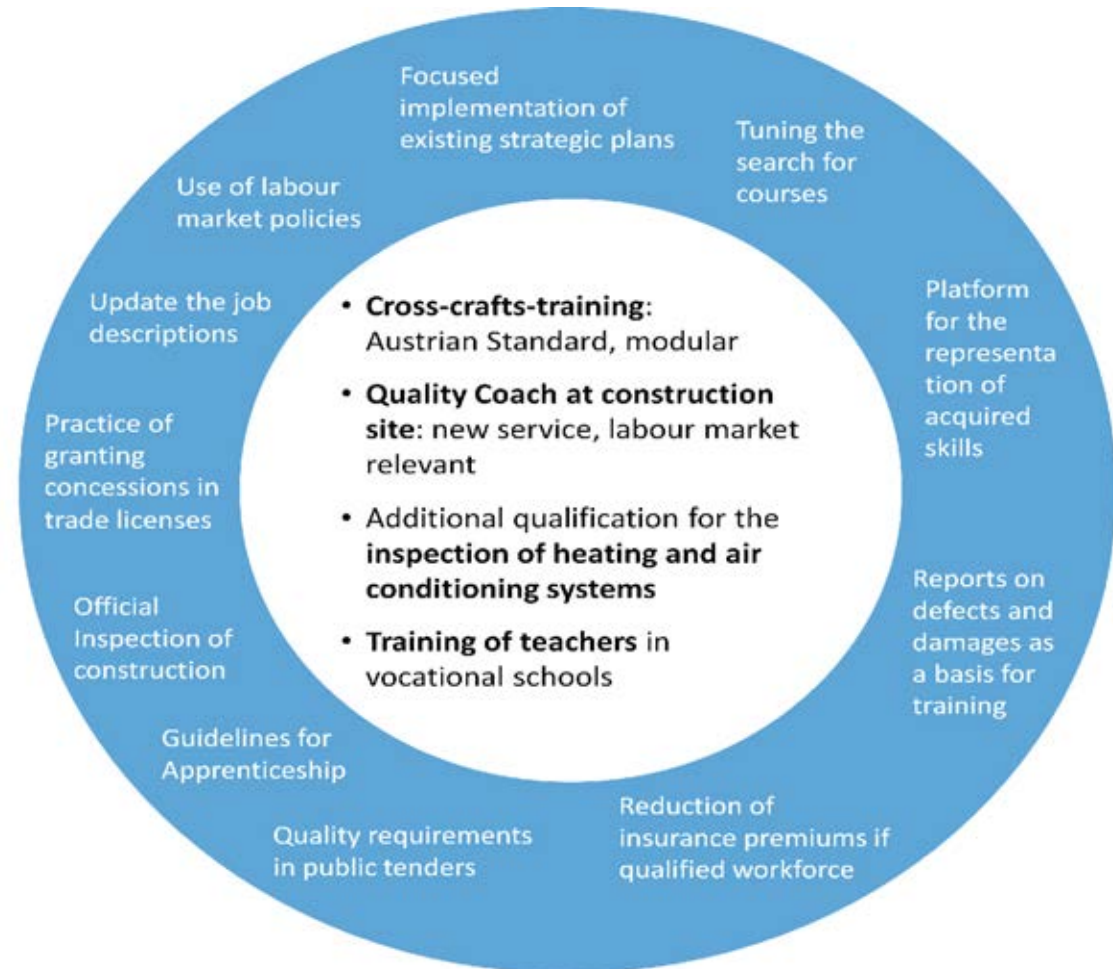
BUILD UP Skills CrossCraft (11/13 – 06/16)

BUILD UP Skills Austria – 1st Pillar

Key findings



Identified national qualification **needs**
&
Proposed **actions** to increase the qualification level of blue collar-workers



BUILD UP Skills CrossCraft – 2nd Pillar

New CrossCraft Trainings



Based on the key findings of BUILD UP Skills Austria the following new courses were developed, implemented and evaluated during BUILD UP Skills CrossCraft:

CrossCraft training on construction site – on-site training (duration: 3 to 4 hours)

Short on-site trainings based on „frequently made mistakes“ inline with the implementation of a blower a door test.

Basic CrossCraft module – off-site training (duration: 16 hours / two days)

- Understanding of the importance of low-energy building standards
- Better understanding of the interaction of crafts
- Avoiding poor workmanship and its impacts

Advanced training modules – off-site trainings (duration: 8 hours / one day)

- Techniques for renovation of old buildings
- Installation of renewable energy systems

Compact CrossCraft module – off-site training (duration: 32 hours / four days)


Content of the Basic CrossCraft module

- + Techniques for renovation of old buildings
- + Installation of renewable energy systems

On-site Quality Coach training – off-site training (duration: 24 hours / three days)

Focus: cross-craft understanding, quality assurance in terms of internal and legal aspects. To guarantee the implementation of high quality constructions.



A photograph showing four men standing in a room. In the background, a red fabric structure is set up, likely for a blower door test. A large black fan is visible on the floor in front of the red structure. The men are dressed in work clothes and jackets. The room has a concrete floor and a white wall.

The **airtight envelop** is an **essential part** of Nearly Zero Emission Buildings. Frequently made mistakes can be easily shown up by the implementation of a blower door test.

The blower door test is a key element of the developed CrossCraft modules.

On-site CrossCraft module

Process steps



Step 1 – Preparation of the blower door test.

Step 2 – Checking penetrations.

Step 3 – Explore the leaks and discussions about the possible causes and how to seal them.

Step 4 – Presenting and discussing the types of plugs and sealing-materials.



Basic & Compact CrossCraft modules

Key elements



WHY?

- The airtight envelop is an essential part of the NZEB.
- Cutting points between building envelope and building equipment (heating, ventilation and air conditioning, HVAC) are error-prone.
- Fail-safe constructions of Nearly Zero Emission Buildings (NZEBs) request perfect cross craft cooperation.

WHAT?

- Searching for frequently made mistakes inline with the implementation of a blower door test.
 - Recognition of optimization opportunities and ways to improve the process.
- The avoidance of frequently made mistakes is shown up practically by case examples. Topics: airtightness, thermal bridges, external wall, windows, balcony,...

WHO?

Foreman, brick layer, carpenter, plumber,...

20/06/16



Techniques for renovation of old buildings

Advanced module



WHY?

Knowledge of the specific physical building conditions of old buildings is needed to overcome demanding challenges (thermal bridges, humidity,...).

WHAT?

- Reasons for the renovation of old buildings, total and partly renovation concepts, specific physical building conditions of old buildings , methods to investigate the existing situation in an old building.
- Identification and evaluation of thermal bridges.
- External and internal insulation possibilities.
- Possibility of an airtight envelope in an old building.
- Ex-post implementation of air conditioning systems.

WHO?

Construction supervisor, foreman, brick layer, carpenter, plumber,...

20/06/16



Installation of renewable energy systems

Advanced module



WHY?

Innovative (renewable) energy systems and HVAC-systems operate only efficient if all crafts are aware.

WHAT?

Training of basic principals to ensure high quality installations of innovative (renewable) energy systems and HVAC-systems .

Topics:

- Working with check lists to ensure a high quality installation of building equipment
- Floor heating , thermo active building systems, solar systems, heat pumps,...
- The way to high energy efficiency & comfort
- Avoiding Frequently made mistakes

WHO?

Construction supervisor, foreman, brick layer, carpenter, plumber,...



Quality Coach Training – off-site training

24 hours / three days



WHY?

- Assurance of a high quality and smooth construction process.
- Reduction of construction faults and damages.
- Experienced craftsman are trained to “Quality Coaches”.

WHAT?

- Airtightness and avoidance of thermal bridges.
- Optimal integration of windows and sun shields.
- The “Quality Coach” as a cross craft interface between the crafts.

WHO?

Craftsman with long practical experience – construction supervisor, foreman, brick layer, carpenter, plumber,...



Implementation of pilot courses

Final status



	Aim of the project	Performed
On-site CrossCraft Module Duration: 3 to 4 hours	4	10
Basic CrossCraft Module Duration: 16 hours	1-3	3
Advanced Modules Duration: 8 hours	2	2
Compact CrossCraft Module Duration: 32 hours	1-3	2
Quality Coach Trainings Duration: 24 hours	1-3	3
Total	9-15	20

Mission accomplished



Participants of pilot courses

Concrete numbers



Course evaluation

Target & activities



The **target** of the course evaluation (conducted during the project implementation) was to analyse:

- the promotion activities of the pilot courses.
- the costs for the implementation of the courses.
- the achievement of objectives.

The course evaluation included the following **activities**:

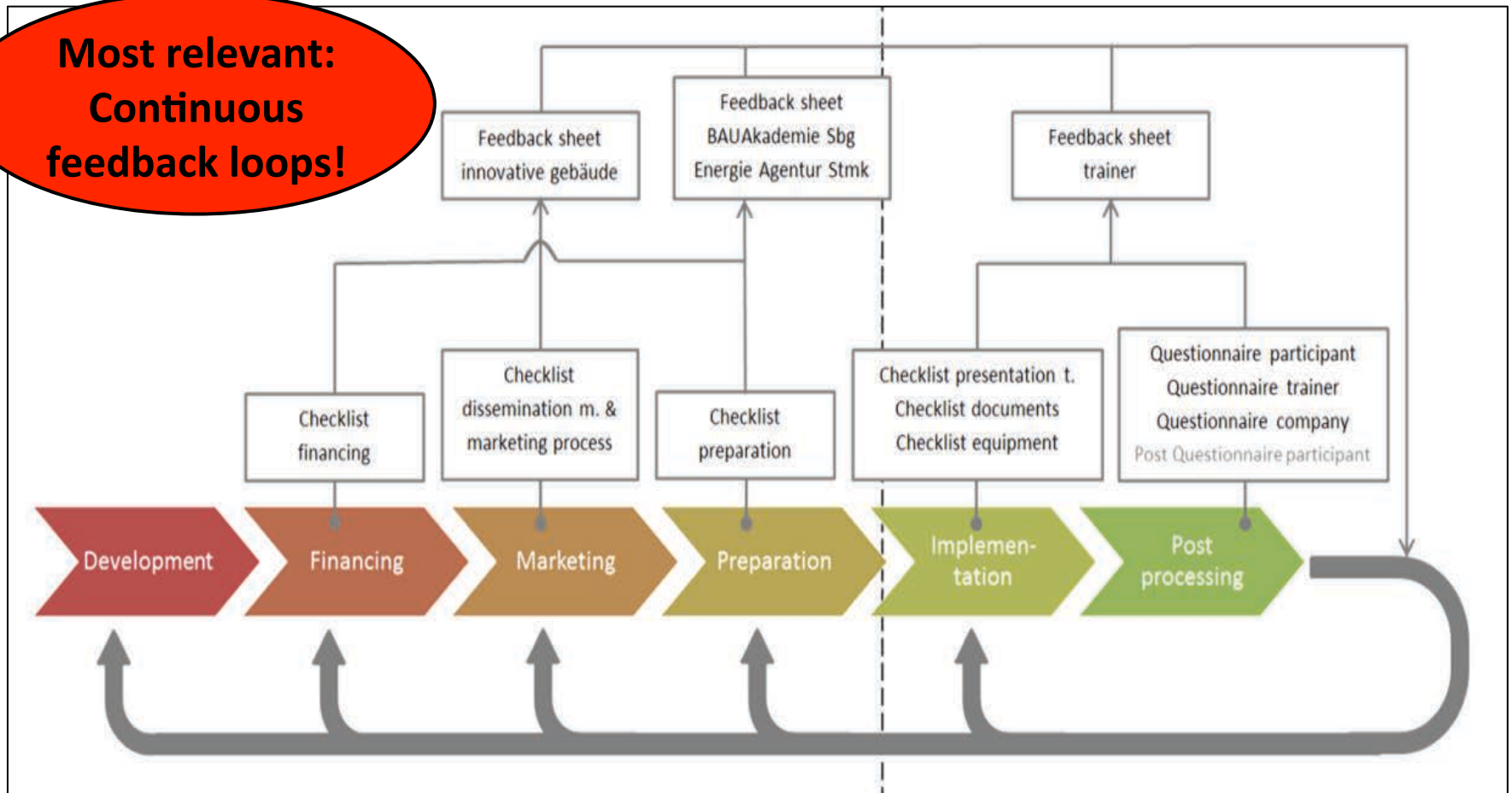
- Designing an evaluation method for the pilot course evaluation.
- Preparing questionnaires for trainers, participants and participating companies.
- Evaluation of course funding, dissemination material (incl. website), organisation of the courses, presentation and lecturing techniques, trainings documents, materials and equipment (**over 180 questionnaires got evaluated**).
- Visiting selected courses by evaluation team members.
- Providing feedback to the project partners for optimising the courses (incl. used material: slides, hand-outs,...).
- Individual interviews with trainers and participating companies.



Evaluation concept



**Most relevant:
Continuous
feedback loops!**



Evaluation results



Through the **regular evaluation** of the implementation of the courses (incl. regular feedback to project partners, trainers, participants,...) the **quality** of the courses could be **raised** and **sustainability guaranteed**.

By the **feedbacks** of the participants, trainers and companies as well as by the **site visits** by the project team an **effective method** was generated to **evaluate teaching method, used equipment** and **learning effect** of the participants.

By the **evaluation activities** the performance of the **pilot courses was optimized**. Especially the **high number of performed courses** (more than originally planned) and the **highly** participants' and companies' **satisfaction** showed up the **successful assessment**.

Promotion activities



For the **successful promotion** of the project (especially the pilot courses) the following **activities** were implemented:

- Development of a web platform (<http://buildupskills-crosscraft.at>).
- Continuous announcement of the pilot courses in relevant education platforms.
- Implementation of regular information events (all over Austria).
- Development of folders, posters, rollups and postcards.
- Releasing of national and international press articles.

Over 40.000 relevant people reached.

Promotion at > 28 events.



Challenges



Challenges

- Strong market demand existed only for the short on-site trainings.
- The implementation of the two to four days off-site trainings proved to be exceptionally difficult all over Austria.
- A large number of already advertised courses had to be cancelled due to a lack of registrations.

Reasons

- The impacts of the economic crisis on the Austrian construction sector.
- Right now the construction sector is a very sensitive market.
- Construction companies reduce their fixed employees to a minimum (to reduce fixed costs). → SMEs are less likely to allow their workers to attend further training courses as they need them continuously on-site.



Success stories & lessons learned



Success story

The short on-site trainings have a strong market demand. **10** on-site trainings could be implemented easily.

Lesson learned

- The successful implementation of the two day CrossCraft training modules based on the “direct marketing” of the new trainings by strengthening bilateral exchanges with the SMEs.

Success story

Content and structure of the two days CrossCraft training modules showed up to be very attractive for SMEs. Education providers will integrate the two day Basic CrossCraft training module in their training offers.

Lessons learned

- Although the content of the Quality Coach training is very interesting for SMEs, SMEs are still very reserved in booking a training over three days (sensitive market). Discussions with the Austrian labor market service are ongoing to integrate this training module in their training offers.

Success stories & lessons learned



Lesson learned

- Although the content of the four days CrossCraft Compact course is identified as highly relevant, the implementation of voluntary training over four days is extremely difficult in Austria right now.

Success story

- The integration of the training scheme of the four days CrossCraft Compact course in the already existing trainings schemes for general foreman and timber constructors is successfully ongoing.
- The content of the four days CrossCraft module will probably get a fundamental part of already existing training schemes in Austrian vocational schools.



Partners & contact



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