

URGE

Case study booklet



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CASE STUDY

CIRCULAR CONSTRUCTION OF 'DE NIEUWE LUNET' CITY OF UTRECHT

KEY FACTS

- 595 m² sport facility with changing rooms
- First municipality-owned circular construction pilot project
- Reuse of a.o. shower installation, doors, scaffolding wood.
- Use of Freement concrete and ClickBrick

DO'S

- Reserve enough time for your pilot project
- When you have limited experience on circular construction: make use of a more abstract tender based on performance indicators
- Prioritize a limited number of criteria in your tender and steer on these criteria.
- Make use of an (external) process supervisor to keep track of progress and keep the momentum

DONT'S

- Avoid the inclination towards a traditional construction project cycle; collaboration and teamwork throughout the whole building chain

CONTEXT

The City of Utrecht's ambition is to be a circular city by 2050. Utrecht is taking the first step in our transition to a circular economy through the action programme Utrecht Circular 2020-2023. Circular construction is an important priority of this action programme, as the city is dealing with a large demand for new buildings. By experimenting and implementing of various pilot projects until 2023, we learn more about how to approach circular construction and development. The circular construction pilot of the sports facility 'De Nieuwe Lunet', the City of Utrecht was able to give a first good example of circular construction. De Nieuwe Lunet is therefore an important good practice for circular construction in the city

CIRCULAR CONSTRUCTION PILOT 'DE NIEUWE LUNET'

De Nieuwe Lunet is a sports facility was realized in December 2019, replacing an outdated and polluted facility from 1978 that had grown too small for the sports clubs. The goal for de Nieuwe Lunet was to both demolish the old building as well as construct a new, larger facility on the same parcel, all based on circular construction principles. The result of the tender is a 595 m² two-floor, zero energy, natural gas free and sustainable building that works on a PV installation and heat pump. The building was constructed as circular as possible, by both using secondary materials and products from the demolished sports facility, such as the shower installation, as well as from other 'harvest sites', such as secondary doors. Cavity wall insulation was made of old jeans and panelling of was made out of the scaffolding wood that was used during the construction. For concrete in the building Freement concrete was chosen that contains reused cement. Finally, virgin materials that are suitable for reuse in the future were applied, such as ClickBrick system that allows for easy demounting.

OPPORTUNITIES AND CHALLENGES

The fact that the facility is municipality-owned created the opportunity to develop an **alternative tender**, that was based on a concise statement of requirements, including sustainability performance indicators, and a lay out rather than an extensive technical list with building specifications. Through steering on performance indicators



- from supplier to architect is important for circular ambitions.

LESSONS LEARNT ON COLLABORATION

- Include your end users and stakeholders in the planning and design process as much as possible. In this way, you will reach a well-considered outcome.
- Make sure to define together what circularity exactly means in an early stage of the project
- Trust in the contractor as well as the collaboration itself is important. The soft side is as important as the hard side.
- Make use of a process supervisor to keep the momentum in the project. Do you get stuck? Do not wait too long with arranging support.
- Realize that boards of sports clubs often change in composition and have limited knowledge on the facilities of the clubs.

more freedom remained with the market, providing the space and trust to experiment and come up with innovative solutions. A **strong building consortium**, especially the building contractor, is thus also key as their enthusiasm and willingness to learn was vital for this project's success. Challenges with de Nieuwe Lunet were mostly on the themes of **reuse of materials**, the **logistics of circular construction** and the **prize and time** for the circular ambitions. Reuse from the 1978 sports facility was only possible to a small extent, as the actual construction materials were not suitable to be re-used, due to amongst others contamination with asbestos. Application of secondary materials was a challenge in the sense that the Building Decree legislation in some cases prevented the direct reuse of harvested materials. Closely connected is the issue of certification, as secondary materials and innovative new circular products often lack the right certification, which resulted in expensive testing or lowering the project's ambitions as was the case with the Freement concrete. Reuse from other 'donor' buildings required insight on material flows and organizing logistics, which proved to be very challenging with the currently limited market activity on secondary materials and products. Delay on the demolition of a donor project therefore resulted in delay at the recipient side, as was the case with the reuse of doors. Lastly, connected to the abovementioned issues is the prize and time for circular ambitions. Circular ambitions required an additional 15% on the investment, which makes circular construction more expensive. There are additional costs in the development phase as well as during the implementation. Overall, the project thus required more time and energy of the parties involved in building consortium, not to mention an overall change of traditional building approaches.

WHAT'S NEXT?

Experience gained through de Nieuwe Lunet pilot, other pilots in Utrecht as well as the pilots at the other URGE partner enriches the knowledge on how to approach circular construction in cities and how to concretize ambitions. This knowledge will feed into the upcoming construction tasks in Utrecht, most prominently in 20 urban development projects where circular construction will be a key ambition, paving the way for a fully circular city by 2050.



CASE STUDY

PILOT PRODUCTION OF PREFABRICATED BLOCKS FROM RECYCLED AGGREGATES (NIGRAD D.O.O., MARIBOR)

DO'S

(Objectives of waste processing with the production of new materials)

- definition of the method of waste processing and production of new materials,
- provision of the necessary equipment,
- providing a suitable location with the necessary infrastructure,
- establishment of waste recovery through the production of new materials (machinery, the definition of work organization and responsibilities, training of workers),
- control and monitoring of processing and production processes,
- handover of products for verification and / or certification,
- monitoring and controlling the quality of production to ensure the technical suitability of processed products.

DONT'S

- the unprofessional placing of CDW mixture without the needed vibration,
- incorrect binder dosing (cement and superplasticizers).

CONTEXT

Nigrad d.o.o. has been an important partner of the Municipality of Maribor, acting especially intensely in the field of the use of secondary raw materials and in bringing new, innovative technologies and processes to the construction sector in the city. Through the implementation of different circular economy projects and involvement in different circular networks and programs, Nigrad is already well known in the sphere of circular urban construction. Nigrad is participating in the Horizon 2020 project CINDERELA. As part of the pilot demonstrations of the project, the pilot production plants in Maribor (Slovenia), Madrid (Spain), and Skopje (North Macedonia) are being established. With the pilot production plants, the project aims to demonstrate the technical, technological, and administrative possibilities of processing and using various non-hazardous construction waste as well as some other waste types to produce more sustainable construction products. Following the pilot production, the secondary raw material (SRM) based products will play an important role in construction demonstration where project partners plan to revitalize degraded areas and build small facilities with accompanying access roads. However, as the waste is not suitable for direct use in construction projects, it must be re-processed.

CINDERELA PILOT PRODUCTION PLANT IN MARIBOR

With the means of processing waste by crushing, sieving, and mixing as part of the pilot production, new construction materials will be obtained and used in three different demos, which will be carried out in the area in Dogoše, Maribor, Slovenia as part of the CINDERELA project. The pilot production plant is producing the following four groups of SRM-based products:

1. recycled aggregates,
2. geotechnical composites,
3. green concrete,
4. recycled soil.

A comprehensive system of recovery and monitoring of mass flows is envisaged for the processing of waste before treatment. Nigrad is monitoring the entire flow through the processes of takeover, input control, pre-treatment, all processing procedures, control and certification of output products, the definition of use, fitting, and evaluation of the results of the materials.



CHALLENGES

- The challenges encountered and overcome relate mainly to incomplete and in some areas still deficient legislation in the field of recovery and reuse of construction and certain types of other non-hazardous waste as new secondary raw materials.
- Another challenge was the unwillingness of local communities to innovate in this area due to past bad practices and experiences. Nigrad addressed these challenges through good and open communication with citizens and the local community.
- An additional challenge is the difficulty to ensure the standard quality of prepared secondary raw materials due to the use of different types of waste.
- In the recovery of waste (in the case of construction waste), the problem is also the generally negative public belief that products prepared from waste cannot be equivalent to products made from natural materials. This was addressed with different examples of demos in different projects and other good practices of their work.

Nigrad produced the first green blocks for separation units made of recycled aggregates in Dogoše on 13 November 2020. These will be later used for the construction of a demo small facility and the construction of concrete separation walls at the demo site to separate aggregates. The recipes to produce green concrete were prepared by the Slovenian National Building and Civil Engineering Institute (ZAG) - the CINDERELA coordinator, based on previous laboratory tests of delivered samples of various secondary raw materials. The green concrete was produced with the mobile concrete batching plant of the Danish manufacturer FIBO and installed in the prepared formwork elements for blocks of the Dutch supplier Betonblock.

SOLUTIONS ADDRESSED WITH THE PILOT PRODUCTION

The production of prefabricated blocks from recycled aggregates and part of other non-hazardous construction waste offers solutions on several levels:

- Blocks as a final product resulting from recycling of waste processed into secondary raw materials is a typical example of circular economy in construction, as it provides a sustainable sink of processed waste and at the same time reduces the consumption of natural resources.
- The blocks will be used to make separation walls to separate different composite mixtures. The advantage of these is that they can be used modularly, and the separation walls can be moved and adjusted according to the amounts of materials that needs to be stored at a given time. This is a big advantage for anyone who stores huge amounts of different materials, both in public and private sector.

These blocks can also be used for the construction of retaining walls, the construction of terraced surfaces and fences to prevent access of vehicles to areas intended for pedestrians, markets. Such composite blocks made from secondary raw materials are used in Europe for various purposes as elements to reduce the negative effects of high tides, as bases for urban equipment, etc.

FUTURE PLANS WITHIN THE URGE PROJECT

Nigrad is planning to prepare a Small Scale Activity (SSA) during the URGE project, showing the use of SRM in the construction sector. The idea is to produce micro-urban fixtures out of recycled aggregates (such as the aforementioned prefabricated blocks) that can be used as part of fences, for benches, for bike-stops, etc.



CASE STUDY

The new **PERMANENT SHORT-CHAIN FOOD MARKET** in the new regenerated **“Macrolotto Creative District”**

KEY FACTS

- The so-called "Macrolotto 0" area, located just outside the city walls of Prato, was characterized by a multitude of textile companies and workshops in the 60s and 70s.
- With the relocation of textile activities to another area of the city, it lives there now one of the largest Chinese communities in Europe
- Regeneration of a former industrial building for new functions and services
- Promotion of local and healthy agri-food production

DO'S

- Interdisciplinary approach
- Creation of a multidisciplinary working group
- Conduction of preliminary analysis
- Identification of barriers

DONT'S

- To limit to just renovating the building
- Not get discouraged by the bureaucratic barriers

CONTEXT

In Prato, the green and circular transition is a priority among the municipal administration's policies. Since 2016, the Municipality of Prato is the Italian representative in the EU Urban Agenda Partnership on Circular Economy, coordinating the debates on the issues of the re-use of wastewater, the economic incentives for the circular economy and the sustainable re-use of buildings and urban spaces. In 2020, the Municipality launched the so-called strategy "Prato Circular City". Overall, the strengthening of circular economy practices in the textile district, together the aim to reduce land consumption by renovating, regenerating and reusing vacant buildings, are intended as main factors for the sustainable and harmonious development of the city. In this context, a process of urban regeneration of the area called "Macrolotto 0" is being carried out. Among the planned interventions, there is the reconversion of an old disused textile factory into a covered space for the short chain food market. The space also integrates interventions of urban forestation and the promotion of social inclusion activities.

A PERMANENT AND COVERED FOOD MARKET WITH AN URBAN DESIGN: RIGENERATION OF THE FORMER FORTI'S FACTORY BUILDING

Macrolotto 0, in the intentions of the municipal administration of Prato, will become the "Macrolotto Creative District" which aims to create an area with new functions, greener, more technological and more contemporary. The intervention was funded through two projects: "PIU", co-financed by the Tuscany Region, and "Prato Urban Jungle", within the framework of Urban Innovative Action. Located in the heart of Macrolotto 0, the former Forti's factory building has been transformed into a metropolitan market of short chain agri-food products and street food, in a permanent and covered space of 900 m². By means of plants in interior open spaces, the aim is to create the largest air factory in Italy, increasing the environmental and social value of the place. The building has been completely preserved. Thermal and acoustic insulation has been guaranteed through the use of panels made by local secondary raw materials. With its NZEB (high energy efficiency) qualification and by the use of certified environmentally friendly materials for the flooring, the building has been regenerated with the intention to have fully recyclable components at the end of its life. Renovations were completed in December 2020 and from May 2021 it will host the "Terra di Prato" short supply chain farmers' market.



LESSONS LEARNT ON COLLABORATION

- This kind of public interventions represent an element of urban and functional requalification that acts as a best practice to drive and push private interventions
- The fragmentation of ownership in a specific area (i.e. buildings of former factories) can make it difficult to implement larger-scale, integrated regeneration projects.
- To conduct the analysis and classification of the industrial heritage by identification of unused buildings and their property.
- To identify urban planning and building rules based on an effective implementation of interventions.

OPPORTUNITIES AND CHALLENGES

The intervention in the former Forti's factory represents a best practice of circular reuse of the industrial heritage, by the promotion of urban ecology, social interaction, cultural exchange, creativity, creation of value for the city.

The main challenge was to preserve a building of the industrial heritage by regeneration, giving it a new function according environmental, social and economic principles.

Good environmental practices have been adopted by the use of recovered and recycled materials. On the one hand, for the external walls, use of about 650 m² of insulating panels, made of secondary raw materials derived from the recovery of textile wasted material from the Prato district. On the other hand, for the 1,100 m² large roof were used various insulating elements not derived from the local textile chain but still with a high content of recycled materials.

Moreover, the insulations have been assembled with a "dry" laying system which can be easily disassembled, with the possibility of recovering most of the materials used.

The main difficulties encountered was adapting the building to current regulations (i.e. structural, seismic and sanitary). The topic of the reuse of buildings is debated: preserving and regenerating a historical and/or industrial building is important because it allows us to maintain the memory of a previous productive structure and the tradition of a place, of a city. However, it is essential a strong commitment and vision by the local public administrators. Replicating this type of initiative without the intervention of Municipality could be problematic in terms of cost/benefit and technical aspects.

WHAT'S NEXT?

The intervention to create a permanent and covered food market in Prato wants to be a driver to attract and boost initiatives, including private and rethink specific parts of the city. Together with the market, the "Macrolotto Creative District" also includes the creation of a medialibrary and coworking space and the requalification of an open area into playground, equipped for outdoor sports. With experiences like this, the City of Prato strengthens its commitment to the transition to the circular economy, based on three pillars: innovation, cohesion, regeneration.



CASE STUDY

Urban Garden of the Future

KEY FACTS

- Climate adaptation project in a 3.1000 m² Courtyard
- Before the courtyard consisted of 1670 m² green spaces, this is now 1900 m² of green spaces
- First fossil and emission free construction site in the Municipality of Copenhagen.
- Reuse of soil, concrete, windows, and wood.

DO'S

- Reserve enough time for engagement of citizens and other stakeholders.
- Use atmospheric pictures and bring artifacts/ materials to spark creativity. As an example, the ideation workshops for the “Urban garden of the future” made use of Legos, straws, small sticks etc. to make it easier for especially kids to express their wishes for activities in the garden layout, both in the green and the blue infrastructure of the climate adaptation system.

CONTEXT

Denmark salvages large quantities of materials and have one of Europe's largest material footprints. In fact, 4.2 earths would be needed to suffice if all people on earth lived as Danes. Around 40% of these materials are used in the building sector and most of these are mineral materials (sand, rock, gravel) which is applied to make e.g., concrete, road fill, noise abatement and- coastal protection walls, etc. However, these minerals are becoming increasingly scarce and difficult to retrieve, since it is both expensive and difficult to locate potential gravel pits and the ocean is also suboptimal, since it can have negative consequences for the seabed. Moreover, it is also a matter of salvaging the right qualities of sand and gravel, especially when it is applied as concrete aggregate. In terms of the local situation in Copenhagen, these non-metallic minerals are especially scarce, as the nearest gravel pits are expected to be emptied within the next ten years. For this reason, it is important to minimise the use of all materials, and especially to identify solutions to minimise the use of materials with the most significant climate impact; namely, concrete (sand, gravel), glass and metals.

PILOT DESCRIPTION

The project, “Urban Garden of The Future” plays into sustainability on various levels, as it concerns both climate adaptation and mitigation. The offset in this project is foremost to create vibrant and beautiful urban spaces for the residents and to create Sustainable Urban Drainage Systems (SUDS) to handle heavy rain and cloudbursts. Furthermore, trying out different and more circular ways to create these systems and all the interior of the garden has also been a desire from the beginning. As a result, many materials, and components either from the site or from other municipal projects has been repurposed in the project. Old windows have been used to make a common patio for the residents, old concrete aggregates have been repurposed to make concrete-elements in the Drainage System (SUDS), same as edges around basement entries and tiles around the garden. Furthermore, when the rainwater is handled in the SUDS, tunnels and a pool get filled and the water rise angle high and is clean enough to use for recreational purposes.



DONT'S

- Do not present ideas to the project stakeholders from the beginning, namely the residents. Instead, create an inviting space for ideation and creativity.

LESSONS LEARNT ON COLLABORATION

- All stakeholders learn from engagement processes, sometimes it may be insights very specific to the concrete project. Yet, it can also breed new ideas and be an offset to structural changes in the general approach to cooperation and engagement in future projects.
- It is a great satisfaction to be a part of creating something. It creates a sense of ownership and this is important in terms of caring about, i.e., an urban garden. When people care about something, they wish to keep it, and therefore it has a better change of lasting longer. Making something proper and beautiful is de facto more sustainable.

OPPORTUNITIES AND CHALLENGES

The “*Future of Urban Gardens*” has been very fruitful and exemplifies how the circular agenda can add to the quality of a project. In this case it has been a part of creating a garden space with unique details that would not have been the same with “of the shelf” building components. Above all else, engagement and cooperation has been the key focus and the path to success. However, the process has also been long, five years in total, of which the first six months was assigned to citizens engagement and design ideation. The length of the project is not a challenge per say but inevitably adds costs the project. It is important to leave enough time, especially, for the non-professional stakeholders to be properly engaged. Residents’ opinions need to be at the centre of decision making. In this project, the ideas of the residents were the foundation of the professionals’ design process. Yet, this could be done in many other ways and variations. such as drawing up different project-designs and solutions from the beginning. Yet, before the non-professionals stakeholders decide on anything, they are educated and enlighten by impartial experts, which then prepare them to choose solutions and designs based on a sound foundation. Lastly, it should be noted that the residents who took part in the project is from three different housing associations, one of them a cooperative association. Oftentimes, it can be difficult to create cohesion, especially when more than one association with numerous residents are to find common ground for such decisions, namely in project of this scale. However, the “future of urban gardens” project stands as an example of a project in which both team-efforts and holistic sustainable solutions co-existed. These consisting of; improved biodiversity, a Sustainable Urban Drainage System (SUDS) and less use of virgin raw materials.

WHAT'S NEXT?

The experiences and insights from the project are valuable and even though it may not be completely transferable to the work in building renewal projects, the approach is something that can be transferred to many situations where public agents, external professionals and citizens create in building projects together. One extra dimension is the matter of financing these projects. In this pilot, the expenses were paid by the municipality and a utility company. However, alternative ways of financing are worth to explore for more green investments. More information: [project webpage](#).



CASE STUDY

The new circular district at the Bayernkaserne, Munich

KEY FACTS

- The vision: Public construction in Munich will become circular, giving fresh impetus to the entire building sector's green transition.
- The success of the "Bayernkaserne" pilot project provides the basis for this.
- A new, sustainably built urban district will be created on the 50-hectare model area by 2030.
- 1.2 million tonnes of rubble will arise. 50% is due to be recycled on site. This means 90,000 fewer truck journeys – equivalent to 80 trips around the world.

DO'S

- Secure political backing.
- Set up strong expert groups which represent both the construction industry and decision makers.
- Show results early on, as with the Munich model pavilion.
- Involve all economic sectors at an early stage.

CONTEXT

The Bavarian capital Munich is one of Germany's and Europe's strongest economic locations. The city has 1.5 million inhabitants and continues to grow at a fast pace, making construction and housing key urban policy areas. At the same time, the city is firmly committed to climate protection. The city government aims to be climate neutral by 2030, the city as a whole by 2035. Munich wants to incorporate circular economy principles in all areas. In terms of public construction, the city wants to establish circular building and the recycling of building materials and introduce binding regulations. Munich's Municipal Services Department is kicking things off with the pilot project to develop the former "Bayernkaserne" barracks and, supported by the Department of Labor and Economic Development, with the EU project URGE.

PILOT DESCRIPTION

The roughly 50-hectare site of the former military barracks, Bayernkaserne, is located in the north of Munich. By around 2030, some 5,500 new rent-controlled apartments for around 15,000 people are due to be built, along with schools, sports facilities, a park and everything else that makes a modern, densely built urban district an appealing place to live. As part of the plan, the Munich City Council approved an innovative recycling concept in 2019 with a focus on "grey energy". The Municipal Services Department has arranged for rubble arising from the demolition of the old military buildings to be sorted and reprocessed on site, so that a large proportion can be used as recycled concrete in the new buildings. Any soil generated will also be tested and used for horticulture or agriculture. Recycling building materials also helps to prevent high removal costs. The city government can thus show that the circular economy has both ecological and economic benefits.

The URBACT Local Group (ULG), which Munich created with experts and stakeholders as part of the URGE project, combines the perspectives of the city authorities and the construction industry. Munich, the Munich University of Applied Sciences, and partners are currently working on a model pavilion made from 100-percent recycled concrete to illustrate the processes and materials gained. It also provides an environment to investigate pollutants arising from secondary materials.



Photo Copyright: Franz Westner

DONT'S

- Don't be afraid of the unknown.
- Don't be afraid of change.
- Don't be put off by bureaucratic hurdles.

LESSONS LEARNT ON COLLABORATION

- Involve all participants at any early stage in any changes planned → this makes it possible to take various interests into account
- Early planning and careful consideration of all pros and cons is absolutely essential.
- Keep the public informed about plans and progress → win public support
- The younger generation of construction industry workers – for example students – have a strong awareness of and interest in environmental issues like circular building.

OPPORTUNITIES AND CHALLENGES

Long-term building project (10 years):

- Important: Develop suitable concept, define milestones, and continuously involve relevant stakeholders in the implementation process.
- The major project has scope for development. Munich can determine the obligatory amount of R-concrete that building contractors must use and increase it over the project term.
- The model pavilion made from R-concrete already illustrates the results of the approach and is a good test object. It has also attracted public interest.
- Ensure lasting political support! The Munich City Council is involved on various levels in the Bayernkaserne pilot project and its impact on construction in Munich.

Aspects specific to Munich/city government:

- Large city government with many departments → overcome silo mentality! It is beneficial to involve city departments in the ULG.
- There are already diverse Munich strategies and programmes concerning climate neutrality. The ULG is a good forum for comparing and aligning.
- Changing construction tenders takes time and effort – the backing of the entire City Council is key.

Framework conditions in Germany:

There are stricter regulations for recycled building materials than for primary raw materials, meaning that to date only a small amount of secondary raw materials could be used.

→ A successful pilot project could encourage policy-makers to engage with the topic, adjust old regulations and create new ones as well as binding standards/funding programmes.

Challenges in the (German) construction industry as a whole:

Little knowledge and awareness of circular building, and to date also little interest; lack of incentives or obligations; lack of technical standards and certification for secondary raw materials.

- The ULG is working on a concept for the general processing site, training, and optimisation strategies for refilling land.
- Munich can show that the circular economy is economically viable!

WHATS NEXT?

A City Council resolution to embed circular economy principles in the building sector is being prepared. Munich's municipal housing company GWG will start construction at the "Bayernkaserne" in autumn 2021. 1,000 m² of R-concrete will be installed.



CASE STUDY

Torres Vedras Ecocentre

KEY FACTS

- 3500 m² – Ecocentre area
- There are in total 10 areas:
Sorting of paper and cardboard, Plastic packaging and metal, Rigid plastic, Iron, Construction and Demolition Waste, WEEE, Glass, Wood, “Bulky” Waste.
- No. of operatives: 2
- Quantity of material received per month: 200 tons

DO'S

- Spreading the importance of waste recovery
- Putting into practice the sorting of materials
- Forwarding the waste for valorisation.
- Creation of incentives to deposit waste to be sorted in the Ecocentre.
- Increase the number of waste streams available.

DONT'S

- Avoid contaminated Waste

CONTEXT

OESTE Cim is committed to the promotion of sustainable development and the maximization of resources. The "Oeste Circular" Project has developed actions related to the dissemination of the Circularity concepts in the Oeste Region, namely through the promotion of public procurement with circularity criteria. There are, however, other vectors of great importance. The municipality of Torres Vedras has an Ecocentre available to the population, an infrastructure that enables and enhances the proper treatment of waste and that the Oeste CIM believes to be an example as a principle of good practice to promote and implement in other parts of the territory.

It is also developing, with an internal team, a centre for the selective disposal of waste from works carried out under direct administration by the Municipal Services for Water, Sanitation and Waste, namely in the supply and sanitation networks

TORRES VEDRAS ECOCENTRE

We believe that to promote Circular Economy it is necessary to create infrastructures and provide staff with the necessary qualifications so that the transition from "waste" to "product" can be operated. The main objective of the Ecocentres is to selectively deposit used materials that have reached their end so that they can be forwarded to other infrastructures where they can be valorised in the future. The Torres Vedras Ecocentre is managed by the Municipal Services, where each citizen can make a free daily delivery of waste such as glass, paper or cardboard, electrical and electronic equipment and Construction and Demolition Waste.

OPORTUNITIES AND CHALLENGES

The existence of places like the Ecocentres allows solving one of the problems about the reuse of materials. It's a place open to the public, where construction and demolition waste can be left for treatment. One of the main "environmental costs" of bad practices, when the subject is waste treatment, is the contamination of the places where the waste is deposited. We believe that the creation of this type of infrastructure should be promoted in a logic of proximity to the population and also with private companies to achieve maximum efficiency in the use of materials. The premise is simple: A delimited and supervised location where materials can be delivered properly separated.



LESSONS LEARNT ON COLLABORATION

- It's important to spread knowledge about how the Waste can be treated
- Private companies should be involved, they are the main waste producers
- Reach out to operators that can treat the waste and give it a second life
- It's important to spread knowledge about the new circular products that serve as substitutes for the traditional products.
- Having a quota of waste that the citizens can deliver on the Ecocentre for free is a way of promoting the proper waste management.

The good practices are already being showcased by the public entities (Like SMAS Torres Vedras), they are promoting and implementing circular practices on the waste that is produced in their own construction works.

Another challenge is to provide more areas of the municipality with proximity recycling centres, managed by the Local Councils and available to a fringe of the population that does not have the availability to go to the municipal recycling centre.

This is the direction SMAS is working in, with some locations serving as pilots for these infrastructures.

The awareness and training of the main producers of Construction and Demolition Waste are fundamental, mainly to highlight the importance of the most effective separation of waste, in order to promote the reuse of materials, their incorporation in the works, or recycling.

WHAT'S NEXT?

The creation of this type of infrastructure should be encouraged and it is recommended that municipalities start studying and identifying the places where this type of infrastructure can be created. The next step in the waste life cycle is also extremely important: ensuring that there is a recovery of the materials and that they can integrate the production chain, promoting their usage.

Involving construction companies in the dynamic of delivering CDW separated by type and promoting the use of the largest amount of materials possible on site.

The URGE project aims to serve as a catalyst for the implementation of circular practices, we believe that the existence of this type of infrastructure is a key part of the life cycle of waste so that it can continue to serve its purpose as materials.



CASE STUDY

Steppingstones for integrated Green Procurement, Kavala

KEY FACTS

- Successful green tendering procedure
- New guidelines for a construction tender

DO'S

- Engage stakeholders throughout the processes
- Put what you know into practice
- Trust the staff knowledge

DONT'S

- Don't wait for a path to follow
- Assume that markets players will be unwilling

CONTEXT

The process of procurement has increasingly been seen in Kavala as a means of addressing the social challenges facing the city and in diversifying the economy. The function of procurement for goods and services sits within the Economic (Finance) Department of the municipality, alongside revenue collection, accounting and accounts payable. This means that the process is largely transactional and focused upon cost. The procurement of works and construction activities sits elsewhere in the Municipality.

The Municipality of Kavala spends around 4 million Euros each year buying goods and services, with a much larger spend on works and construction, at around 15 million Euros. The core types of goods and services purchased relate to environmental services, agricultural services, technical services and operational services.

PILOT DESCRIPTION

The Municipality of Kavala decided that it wanted to test the market and introduce some environmental criteria into one of its cleaning materials supplies procurement.

Through a series of internal discussions with Municipal bodies and external deliberations with the market a list of preferred criteria was identified. Internally, the discussions focused upon the types of criteria and the barriers that their inclusion of such criteria might bring. Externally, the Municipality met with the market to discuss the tender conditions to make sure that the market could meet them

Following this feedback, the Municipality reviewed the final tender and opened a successful call on 19th November 2020. The criteria included in the Tender included:

- 0% of plastics in the material supplied. Recyclable material preferred
- 1% of the value of the procurement to be contributed to social initiatives / activities

Moreover, only electronic offers were considered.



LESSONS LEARNT ON COLLABORATION

- Working closely with the market and national stakeholders can help lifting barriers
- Adopting and adapting good practices from partners saves effort, time, and can be a powerful argument to overcome lack of action

This tender has been the start and the inspiration for the Municipality. Capitalizing on the knowledge acquired and the experience gained from the URGE network the Municipality broadens its scope.

The Municipality, with the Small Scale Action, develops a pilot tendering document for construction projects. It does so again in collaboration with the Municipality departments, the market stakeholders, engaging, moreover, this time the relevant Ministries.

OPPORTUNITIES AND CHALLENGES

In the nascent national field of Green Procurement the Municipality has been a pioneer. With its initiatives helps the development of functional and impactful framework for other local authorities to follow.

Nevertheless, in an unknown territory there are always risks and challenges to overcome. With participatory design and broad stakeholder engagement as well as by deliberating with local businesses and national strategy setters the Municipality has been successful so far.

The Municipality's aspiration is to complete a successful tendering procedure for a road construction project within 2022.

WHAT'S NEXT?

A central goal for the Municipality of Kavala is to mainstream Green Procurement processes in all its tendering procedures. It aspires to reach it, by building steadily and strengthening in each step the environmental and social aspects of the Green Procurement process.



CASE STUDY

Piloting construction material exchange point in Riga

KEY FACTS

- A four-month pilot site
- Exchange assortment did not include bulky building materials such as bricks and plasterboard.
- Telephone consultations on the product range of the exchange point and on possibilities to dispose of construction waste in Riga were provided
- Possibility to bring or take small repair materials (wallpaper, paints, etc.) was provided also at the partner's FREE SHOP facilities in two other locations in Riga
- Publicly available guidelines have been developed that summarizes both the experience of setting up an exchange point and visitors' comments from the survey
- Partners continue to work on the development of the exchange point after the pilot

DO'S

- Start with specific product range guidelines, to prevent from waste accumulating at the exchange point

CONTEXT

It is estimated that about 10-15% of all building materials after refurbishments or construction works are leftovers. These are good-quality materials that could be used elsewhere. People keep them in storage for several years and then dispose of them with household waste. That complicates waste management, lavishes resources and increases the overall amount of waste. People are aware of these effects of their behaviour and they would love to share their materials. Material sharing is complicated because there is no particular space or system to facilitate this. Online, there are fragmented options via groups of interest (e.g., some specific groups on Facebook) or advertising platforms.

Another problem is that 92% of all residents of the city of Riga live in multi-apartment buildings. That means most of our citizens don't have premises for repair works of their furniture or to prepare large size construction elements for refurbishments, e.g., do the door painting or skirting board varnishing.

PILOT DESCRIPTION

The implementation of a construction material exchange point was launched at the end of 2020, with a survey of citizens to find out their views and expectations regarding the exchange of building materials. It was concluded that an exchange point was not only theoretically useful but even highly anticipated among citizens.

At the beginning of 2021, specialists gathered to analyse and plan implementation scenarios. As a result, it was decided that the exchange point should comprise several services, not just the opportunity to bring or take construction materials. Additional services should be:

- Work desks for individual works
- Tool rental
- Repair services
- Workshops and masterclasses
- An online platform with information on the product range to avoid extra trips and provide information on waste management and green living issues

The material exchange point was open for citizens for 4 months from June to September 2021.

To ease and promote the opening of other similar spaces, visual identity was developed and lessons learnt were gathered in a form of guidelines available for anyone interested.



- Provide a qualified workforce, with an understanding of construction materials and motivation to promote the principles of circular economy
- Provide communication and feedback to visitors, be ready to advise on construction waste disposal points
- Ensure active public communication in parallel with the operation of the exchange point
- Be open and respond to the needs, ideas and activities of the visitor community
- Involve diverse partners to expand your opportunities

DONT'S

- Do not start without a budget for publicity and waste disposal
- Don't take whichever premises – evaluate the needs carefully

LESSONS LEARNT ON COLLABORATION

- In circular economy, we have more in common than in a linear one 😊

OPPORTUNITIES AND CHALLENGES

The material exchange point possesses several important strengths:

- Infrastructure to support behavioural change and promote circular habits
- Strengthening communities
- Support for vulnerable citizens
- Circular business development
- Beneficial for waste management
- Decreased use of raw materials
- Awareness-raising and environmental education

For the first time in Latvia, this type of initiative has been launched. The exchange point forms a base of practical experience available to the public and provides insight the development of such a service anywhere in Latvia. This experience can bring together different parties and communities to gain a better understanding of the importance of the circular economy. It is also an opportunity to find common solutions and new ways of working together for partners who otherwise wouldn't meet each other – NGOs and waste managers as well as various social and creative initiatives.

Besides the opportunities, we also faced several challenges:

- Sufficient budget for publicity and advertisements. No matter how great an idea is, it needs to be promoted accordingly. Luckily, we had an organisation with a wide audience on board.
- Suitability of the premises. Specific requirements for premises for various activities need to be taken into account early. We missed that and therefore we were not able to test all activities.
- The rapid change of the product range, many indefinable items did not allow to create an online up-to-date database with available items.
- When accepting small items, micro-management and potential waste must be taken into account.

WHAT'S NEXT?

The partners of the exchange point continue to develop the idea, planning to create a larger exchange point.



CASE STUDY

Social circularity at the Santa Adela quarter in Granada

KEY FACTS

- Area: 70,6 Ha (1,473 flats) divided into 7 sectors.
- 2 reform sectors: 532 flats.
- 5 replacement sectors: 1.166 new flats, 4.688m² of new community facilities and 8.625m² of new public space.
 - Sectors 1+2+3: 2004-2019 (74,938,544 €)
 - Sectors 4+5: 2022-2027

DO'S

- Social Intervention
- Energy efficiency
- Public space renewal

DONT'S

- To implement a regeneration project without a social perspective

CONTEXT

The Santa Adela quarter is located in south of Granada. The intervention consists of the total urban renewal of an area comprising 1,473 flats, built at the end of the 1950s for the 1956-earthquake-victims. With emphasis on social circular criteria, the project aims to improve the quality of life and health of the inhabitants and to keep existing population, fostering its social integration and seeking economic revitalisation of the whole neighbourhood.

Financed by local and regional government, an integral public intervention is being carried out from 2004, covering 7 sectors: 2 devoted to reform existing buildings, and 5 to demolition and new construction, obtaining new public spaces and community facilities. All of this is firmly accompanied by a socio-educational process with necessary participation of the resident population.

PILOT DESCRIPTION

Existing buildings are 4 or 5 stories linear and H-shaped blocks. Most of them have rising damp problems (up to 2 m high), mainly due to deficient isolation against the underneath fertile meadows of river Genil, on which all buildings lie. Poor construction materials along with lack of maintenance worsens the problem, as well.

There are also energy poverty situations because of deficient thermal enclosures and inoperative installations, which implies a waste of energy and a lack of inner comfort. This is compounded by the scarce economic resources of a mostly vulnerable and elder population.

According to the construction pathologies of original buildings, most of them were intended to be demolished and rebuilt. New blocks are designed according to current town planning regulations: 8 floors closed typology with inner courtyard. Central "patios" are designed as communal relation spaces bathed with natural light.

The social programmes include social awareness-raising; strengthening of support networks, monitoring of social cases or intercultural mediation; improving economic and employment development, assisted housing for the elderly... The whole project is a great example of long lasting interdisciplinary work of architects, town planners, social workers, engineers, attorneys and economists.



Pictures credits: Granada Council and Ibáñez Berbel & Kayser Arquitectos

LESSONS LEARNT ON COLLABORATION

- The need of creation a Technical Office.
- The importance of implement all social criteria from the first sketches of design.

The creation from the beginning of the process of Santa Adela Technical Information and Counselling Office, located in the neighbourhood itself, allows residents to solve their problems, and municipal technicians to know on site any particular issue. The aim is to ensure permanent participation of the affected population, through technical and social accompaniment all along the intervention.

From the technical point of view, all new buildings are designed according to current standards of Spain Construction Codes, and with an special focus on energy efficiency improvements and optimal communal heating installations, so that further maintenance costs can be reduced for all residents. Due to their architectural quality, some of the new buildings have been already awarded: Progreso Awards 2009 and AVS Awards 2008 and 2010.

Refurbishment of existing buildings, on the other hand, involved structure and enclosures improvements and reparations, and installations updating on every home.

Future building processes of remaining sectors are to be implemented with circular economy criteria, as a complement to the social circular focus on which the whole intervention stands from its beginning.

OPPORTUNITIES AND CHALLENGES

- To introduce circular criteria for the new buildings on sectors 4+5
- To combine socio-economic and environmental approach for an urban regeneration project.
- To involve the neighbours in the maintenance of the buildings.
- To solve the problems of management of the buildings between by larger communities of neighbours.
- To implement this kind of public intervention in other neighbourhoods of the city with similar needs and problems.

WHAT'S NEXT?

- To develop sectors 4 and 5.
- To introduce circular criteria in the design of new buildings.
- To learn the lessons from previous phases on community managing.