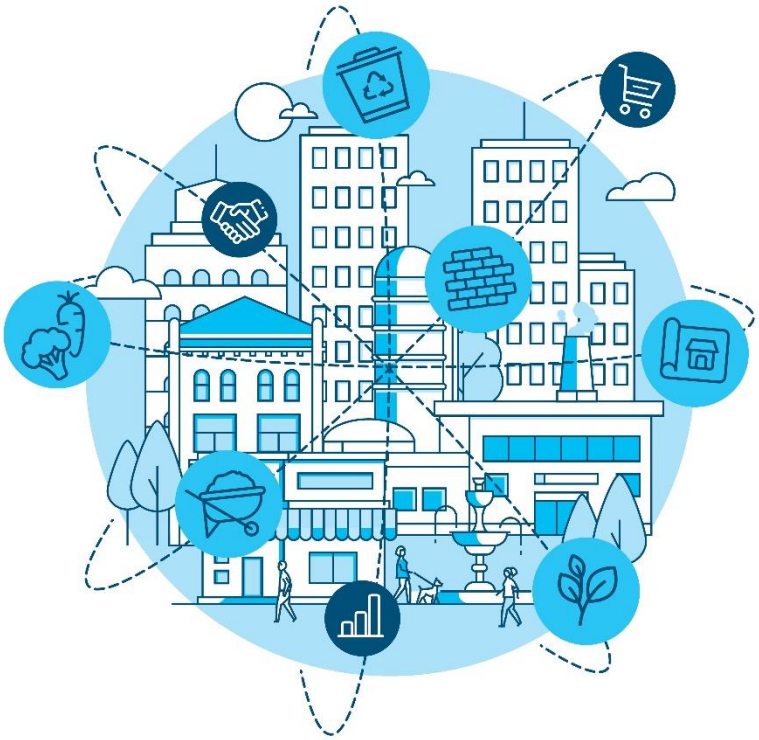
Circular procurement in Roskilde

Extract from the Demonstration Report

Roskilde, Denmark



Contents

This text describes Roskilde’s experience in circular procurement for the screening procedure and demolition of Hall 11/12 and the construction of the car park “Infaldet”. The sections come from Roskilde’s CityLoops demonstration report available here.

Introduction

The transition towards a circular build environment requires new approaches to construction, demolition and urban development. In the EU 2020 project CityLoops, the municipality of Roskilde, have developed procedures, methods, tools and generated knowledge to promote a circular transition, through a series of demonstration projects. These activities were based in the urban development area Musicon, a transformation of an old concrete factory and former waste deposit. The area contains a series of production halls, and the development of the area focuses on preserving the industrial aesthetic as well as the existing buildings, to be a hub for creativity, music and cultural activities.

The demonstration projects concern the 1) partial demolition and transformation of some secondary buildings, 2) construction of two Car Parks and 3) circular soil management in the area.

Tendering of screening procedure and demolition works for Hall 11/12

The same consultant that participated in the screening prepared the tender of the demolition and they were asked to procure a tender with the demand of taking all materials listed in the positive list out and preparing them for reuse. Therefore, the material passport list was part of the tendering material.

Gule felter: Kvalitetsikres af nedrivere forud for udbud
Grønne felter: Udfyldes af nedriver efter udtagning

Hal 12 - sidebygning (3)

Materiale	OPLYSNINGER TIL BRUG FOR UDTAGNING										OPLYSNINGER TIL BRUG FOR GENBRUG					
	Placering og omfang				Tilstand		Håndtering				Dokumentation efter udtagning *(udfyldes af nedriver)*					
	Bygning	Nærmere placering	Foto	Mængde/ antal/ dimensioner	Miljøforhold *(se ark om miljøforhold)*	Genbrugs-potentiale	Udfaldskrav/ ønsket kvalitet efter udtagning	Metode til adskillelse	Metode til pakning	Placering	Nummerering	Foto efter udtagning	Holdbarhed/ stand	Mængde/ antal	Dimensioner	Pakning
Trøpladen/krydsfiner.	H12, side	Nedre del af væg		Ca. 70 m²	Ingen, synes ubehandlet	Stabiliserende element i skurtag, interim eller skateramper	Hele plader	Skrues fra hinanden	Lægges på strøer	Indendørs lager, Hal 11, Pulsen 7						
Mursten, akustik-/hulsten, stående	H12, side	Indermure		Ca. 100 m²	Uden grafitti: Ingen, synes ubehandlet. Miljøforhold i maling (grafitti): A2 B2 C2 (PCB)	Facadeparti i skatehal-passage	Flest mulige hele rene sten	Mursten nedrives nænsomt så stående mursten kan adskilles fra bagvedliggende mursten.	Mursten med grafitti udsorteres til deponi, og rene mursten samles i bunke og overdækkes med pressening	Nærlager 1a ved Rabalderstræde 30						
Mursten, akustik-/hulsten, liggende	H12, side	Indermure		Ca. 200 m²	Ingen, synes ubehandlet	Skillevæg eller teknikkerne i skatehal	Kvadratiske skiver á ca. 142 x 142 cm. 	Udskæres i kvadratiske felter á ca. 142 x 142 cm. Min antal: 45 felter	Stilles lodret på paller. Tværstivere monteres på skrå (som ved nye vinduer) ved fastgørelse i palle og i felter/skiver. Overdækkes	Indendørs lager, Hal 11, Pulsen 7						
Armaturer, lysstofrør + LED	H12, side	Ophængt under loft		14 stk lysstofrør + 6 stk LED	Ingen, kan umiddelbart anvendes uden behandling	Lysarmaturer i skatehal eller facadebeklædning i affaldsskure	Hele armaturer i bedst mulig stand	Demonteres forsigtigt. Ledning klippes i størst mulige længde.	Lægges forsigtigt på paller og strøer og overdækkes.	Indendørs lager, Hal 11, Pulsen 7						

This was a very ambitious goal and therefore it was important to communicate this to the bidding demolishers. Early market dialogue was carried out in collaboration with the environmental consultant and involved three well respected demolishers, who agreed on participating in the tender.

The three demolishers were given parts of the tendering material in advance for commenting and it was adjusted according to their remarks. This is a very efficient way of communicating complex assignments in advance and it is allowed under the public procurement act, as long as the fundamental information regarding time, prize and award criteria are not revealed.

Demands and award criteria

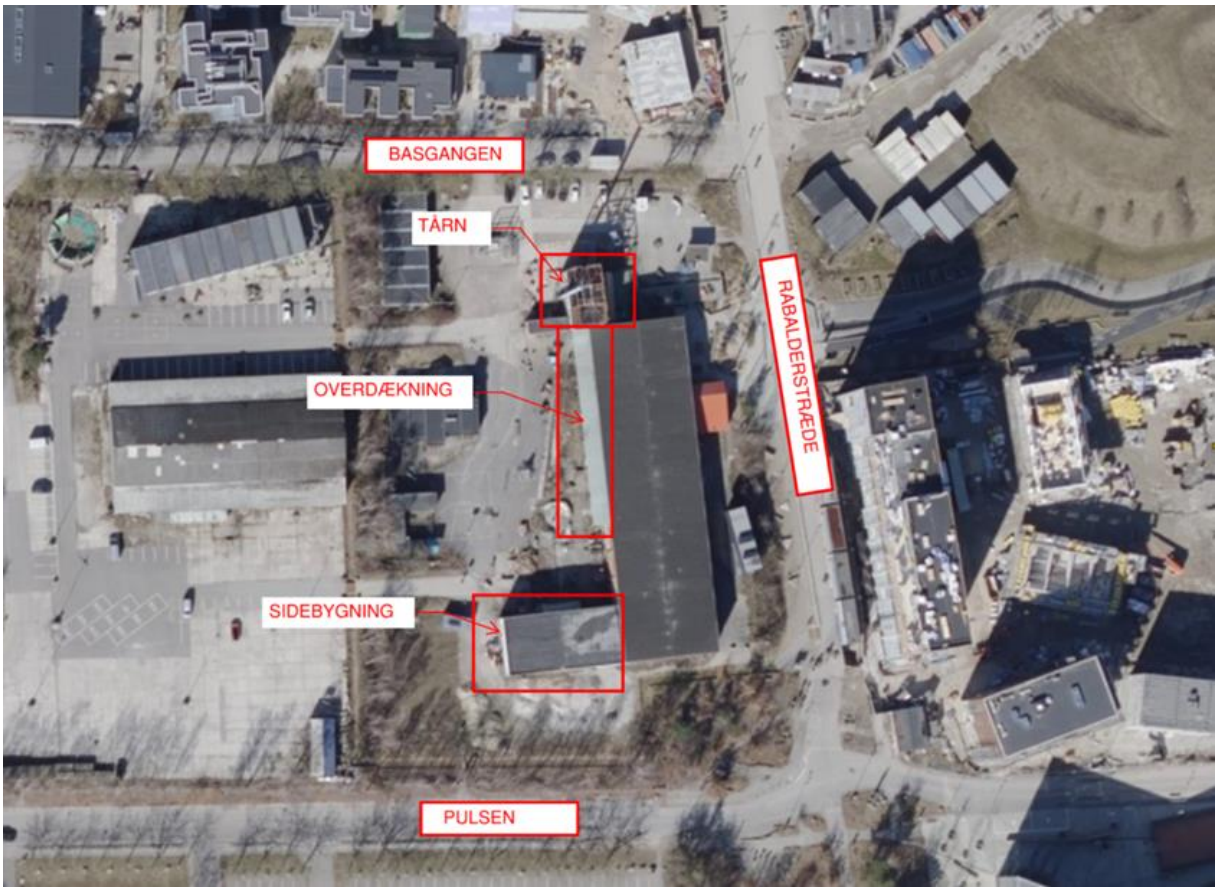
The balance between demands and award criteria is crucial when communicating your ambitions and prioritisation as a construction client. Demands are equal for all bidders and therefore perceived as a barrier more than an opportunity to excel.

Award criteria on the other hand are answered differently by each contractor/bidder and therefore allows for more specific solutions. The specific solution chosen by the contractor comes with an ownership and responsibility

Overview of the tender

Roskilde Municipality aims to develop and explore possibilities for extracting construction materials from demolitions and remediation for future reuse and recycling. The current tender should be seen as part of that ambition.

The project includes environmental remediation and demolition of 2 buildings, the southern annex building and the northern tower, in the Musicon area, located in immediate proximity to Musicon Hall 12, 4000 Roskilde (Figure 1).



The buildings are to be demolished prior to the renovation of the skate hall in Hall 12, as well as the expansion of the new Hall 12 neighbourhood.

Furthermore, the demolition of the covering from the northern tower along Hall 12, as well as the demolition and filling of the existing pit, which is currently covered with metal trapezoid cladding panels.

Requirements for offers and award criteria

The following criteria, in the specified order and weighting, apply to the conclusion of the agreement:

- Price: Weighting 40%
- Quality: Weighting 60%

Quality criteria should include two elements:

1. **Resource utilisation and methods:**

A brief description (approximately 2 pages) is required of the Contractor's specific proposed solutions for how they will address the following critical tasks as part of the demolition:

Ensuring that documentation and labelling of materials extracted for reuse are done systematically, allowing for easy identification of the materials.

How the Contractor will address challenges related to dismantling the steel structure in the tower using a crane, specifically regarding detachment/cutting from underlying materials.

How the Contractor will safely remove metal trapezoid panels from roof surfaces and areas above the pit in the most secure manner.

Furthermore, a brief description is requested of the risks the contractor identifies regarding the tendered task, with a focus on ARB Appendix 5: Resource Mapping of Materials for the Client's Reuse. This should cover outcome requirements, extraction methods, and packaging methods, with particular emphasis on:

How brick sections from the annex building will be extracted in the described size without causing damage during dismantling, packaging, and transportation.

How concrete elements from the roof deck over the original part of the annex building can be removed/extracted in full length without damage.

Please note that the translation provided may need to be adapted to fit the specific requirements and terminology of the target document.

2. Communication and Key Personnel:

A brief description (approximately 1 page) is required of how the Contractor will ensure good communication and collaboration with the Client and other involved parties, including the users of Hall 12, throughout the different phases of the project.

Furthermore, a description is requested of the proposed organisation and key personnel who will be involved in the project, including their experience with similar tasks (approximately 1 page, including relevant CVs).

When evaluating this criterion, the Client will consider:

The Contractor's proposal on how to ensure that the demolition is carried out as a collaboration between the Contractor, the Client, their consultants, and the users of Hall 12, including:

Ongoing dialogue and collaboration to find gentle solutions to unforeseen problems.

Prompt communication regarding unforeseen risks and issues with the proposed solutions.

The relevant experience of the key personnel with similar demolition work.

Early Market Dialogue

Before the tender was sent out, an early market dialogue was conducted amongst three demolishers. They were asked to participate in onsite meetings and prior to the meeting they had access to a preliminary version of the tendering material. The material did not include timetable, award criteria, and price conditions which were translated to the fundamental elements of the tender.

The fundamental elements should be understood in relation to the fundamental principles of equal treatment and transparency. A change is considered a change in fundamental elements if it can impact the participation of potential applicants or tenderers in the specific procurement procedure or distort competition among applicants or tenderers.

In other words, any modification that affects the fundamental elements of a procurement procedure and has the potential to influence the participation of interested parties or create an unfair advantage for certain applicants or tenderers, would be classified as a change in fundamental elements. It is crucial to ensure that such changes are carefully managed to uphold the principles of equal treatment and transparency in the procurement process.

Early market dialogue is a very efficient way of getting feedback from the market before the tender is sent out. Often the balance between the contracting authorities' expectations and the economic operators' capacity does not meet each other, e.g., if the contracting authority doesn´t have sufficient knowledge about market conditions and/or the practical conditions of the job. Early market dialogue gives both parties a chance of eliminating the worst misunderstandings and reaching a balance between need and capacity.

However, it is crucial to have a good understanding of the rules described in Public Procurement Act No. 1564 of 15 December 2015. Most important is to focus on equal treatment and transparency at all times. The law says:

§ 2

A contracting authority shall comply with the principles of equal treatment, transparency, and proportionality in public procurement in accordance with Sections II-IV.

Paragraph 2. A public tender must not be designed with the purpose of excluding it from the scope of this law or artificially restricting competition. Competition is considered artificially restricted if the tender is designed with the intention of unjustifiably favouring a single or certain economic operator or placing them at a disadvantage.

§ 39

Prior to initiating a procurement procedure, a contracting authority may conduct market surveys in order to shape the tender and inform economic operators about the contracting authority's procurement plans and requirements. In this context, the contracting authority may engage in dialogue and receive advice from economic operators. The advice can be used in

the planning and implementation of the procurement, provided that it does not violate the principles outlined in § 2.

Paragraph 2. If an economic operator or a company associated with an economic operator has provided advice to a contracting authority in connection with a market survey or has otherwise advised or been involved in the preparation of the procurement procedure, the contracting authority must take appropriate measures to prevent distortion of competition due to the involvement of that particular economic operator in the tender. At a minimum, the contracting authority must:

Ensure, to the extent possible, that relevant information exchanged during the economic operator's involvement in the procurement procedure is included in the tender documentation, and

Set the deadlines for the submission of applications and bids in a way that offsets any time advantage that an economic operator may have gained through involvement in the preparation of the tender, including through dialogue and advice received from economic operators.

Paragraph 3. If the contracting authority cannot ensure compliance with the principle of equal treatment through less intrusive measures, the contracting authority must exclude the respective applicant or tenderer in accordance with § 136, no. 2.

In the early market dialogue contractors were asked to participate in an onsite meeting, where they had the chance to express concerns regarding the bidding material, processes or time. Consultants in charge of the tendering process, were asked to compile the comments. The following is a condensed version of this.

Focus points for preliminary dialogue regarding demolition, remediation, and resource utilization of the Side Building and Tower at Hall 12 - Musicon:

During the preliminary dialogue with three contractors, the following focus points were discussed. Below is an overview of the different focus points and the input from the contractors:

Contractor's design for the removal of decking elements above the Side Building:

- It is initially not problematic for the contractors to design the removal of concrete elements in the roof decking.
    - Access routes will be established via scaffolding towers for the removal of roofing membrane and for the positioning of elements for the crane. Additionally, the work area will be secured (with handrails or fall protection).
    - There is disagreement regarding whether the elements span the entire width of the building (12 m) or only half the width (6 m).
    - There are no guarantees, but it is assessed that the majority of elements can be removed without breaking.

- The elements will be removed by an excavator "loosening" the elements, which will then be lifted down to the ground by a crane.

Cutting of brick squares in the Side Building:

- Horizontal bricks can be cut and placed on pallets, with two pieces per pallet.
- Vertical bricks (acoustic wall on the southern side of the central wall) cannot be cut into squares without significant waste. The stones can possibly be carefully removed and cleaned to separate individual bricks (they are fragile because they stand on their edges in a single layer, allowing the mortar to be removed).

Removal of steel structures and wooden framework in the walls of the Side Building:

- Cutting the steel and wood into the longest possible lengths is not a problem.
- If the steel is removed with an excavator, there is a risk that it may resemble a "crumpled summer hat" when it reaches the ground.

The contractor's design for the dismantling of the steel tower structure and the covering over the pit and chimney:

- It is initially not problematic for the contractors to design the dismantling of the tower structure in two parts, as well as the covering over the pit and chimney.
    - A 100-ton mobile crane is planned for the dismantling of all the parts.
- The description of backfilling the pit with stabilising gravel and concrete rubble should be improved.

Interim closures of the southeast and north facades (streetskate) using recycled materials from the Side Building:

- It is possible to primarily use recycled materials for interim closures, but there may be certain parts that need to be purchased new.

Cutting of brick squares on the ground floor in the Tower:

- There is significant waste associated with cutting brick squares on the ground floor of the Tower due to:
    - Limited space for cutting.
    - Risk involved in hoisting the squares out of the building before moving the steel structure.
    - High risk of PCB contamination in the bricks in the transformer room, which would damage the stones during cleaning (it is also unclear how deeply the PCB has penetrated the stones).
    - Plaster and moisture on the stones in the boiler room adjacent to the transformer room.

Bill of quantities:

- It would be appropriate to include unit prices in the bill of quantities for:
    - Demolition work - hourly rate.
    - 30-ton excavator including operator - daily rate including mobilisation and removal.
    - 100-ton crane including operator - daily rate including mobilisation and removal.
- Additionally, there should be an item in the bill of quantities for the removal of vegetation, old ramps, fences, etc., in the corner between the Side Building and Hall 12, as well as along the covering.

Timeline:

- Two months for the task is somewhat tight to ensure a smooth process. This includes the removal of recycled materials, optimal cutting of bricks in the Side Building, and minimising disruption to the users of the hall. Three months would be more appropriate.
- However, it would be advantageous to commence the project before the summer vacation (July) to ensure it is underway before people go on holiday.

Procurement strategy for the Car Park "Indfaldet"

Both the presence of underground gas and concrete obstacles would lead to a high risk for the contractor, since they would be locked to a fixed timetable in their contract with the municipality. This risk they would need to cash in in their offer to the municipality. The conclusion was straight forward. If the municipality could apply and receive a §8 approval in advance of the tender, a big risk would be lifted from the tender to the builder and thereby ensure a better price. This practice has later led to a new procurement strategy in the building department where three elements are always contemplated in advance of deciding where a risk shall be placed in a building process, namely risk, responsibility and consequences. This procurement strategy will be folded out under "Circular procurement strategy".

It was decided to carry out the tender as a turnkey contract. According to The Public Procurement Act No. 1564 of 15 December 2015, the contracting authority can set the price or costs to ensure that competition is carried out based on qualitative criteria only. When deciding to carry out a competition based on qualitative criteria only, it gives the contracting authority an advantage in communicating the wishes for the building more effectively, compared to competition, where price is the main focus. This is due to the fact that when carrying out a competition you have to balance demands and incentives in the tender. Demands typically come in the form of very specific descriptions for function or materials. But demands will often be interpreted by the market as minimum requirements and the overall quality of the building can be lowered. Incentives on the other hand come in the form of award

criteria, where the award criteria will be interpreted as the main interest of the building authority, and thereby will receive more attention by the bidders.

The balance between demands and award criteria is crucial when communicating your ambitions and prioritisation as building authority. Demands are equal for all bidders, whereas award criteria are answered differently by each contractor/bidder and the specific solution chosen by the contractor subsequently comes with ownership and responsibility.

Underlining the wish to focus on quality and not price, it was decided to carry out the tender as a competitive procedure with negotiation according to The Public Procurement Act Section 61-66. A competitive procedure with negotiation means that the contractors will be participating in bilateral negotiations with the building authority after handing in a preliminary offer.

Tender for construction

An advisor was hired for the continued planning and surveying in relation to obtaining a §8 permission in advance of the tender. The advisor laid out a timetable for the tender in close collaboration with the building authority.

The process started in October 2019 where all applications for attending the bidding, should be handed in.

In late November an information meeting was held with all interested contractors. In the meeting the overall scheme for the bidding process was presented.

In early January 2020, there was a deadline for presenting questions before the negotiations started.

By mid-January 2020 preliminary offers should be handed in and in late January the negotiation meetings would start.

By the end of February, the final offer should be handed in and mid-March the contractors who handed in offers would be informed of the result. By law a stand still period follows the communication of the winner, this stand-still period would end in late March 2020.

By early April it would be expected to have a contract with the winning contractor. Immediately after signing the contract the contractors' planning could start.

After creating the tender time schedule, work on the remaining part of the bidding materials was started. A number of very central documents was created, amongst those was the technical programme, where all demands for function and materials are listed. An architectural programme where all the aesthetic demands were listed along with the description of the wanted place, atmosphere and relation to the future users. A sustainable strategy, listing all objectives for sustainability.

Overall, the construction must provide the best conditions for Car Park Indfaldet to fulfil its purpose and at the same time contribute to sustainable development locally. This is expressed in the following focus areas:

- We wanted a building where conscious, sustainable choices have been made within all aspects. Life cycle calculations must be thought into the project both in relation to maintenance and operating economic solutions as well as in aesthetic considerations. The building must be robust and durable with the focus that good architecture creates satisfied users and lasts further. This is documented i.e., through an account of the total economy, which submitted in connection with offers, total economic assessments during in connection with change projects, and preparation of a total economic calculation in connection with the delivery.
- A building with a low environmental impact was desired. Therefore, life cycle assessments had to be considered in the project both in relation to the choice of materials and the design of solutions as well as in aesthetic considerations. This should be documented i.e., through an account of life cycle assessments with a focus on CO2, which is submitted in connection with offers and preparation of life cycle calculation in connection with main project.
- With its local roots and voluntary efforts, the house is a socially sustainable project with accessibility for everyone and space for the community. The interior design of the house must support this function with the possibility of variation in use. The layout is crucial for a building's functionality and flexibility different uses. These factors play a decisive role in the building's performance spatial and architectural quality and will also be reflected in the building's value stability. Functionality and flexibility also affect user satisfaction with the building.
- A flexible building that can be changed over time is desired. The addition of P-hus mod south must be able to change its use to the greatest extent possible and be used for several purposes. As well as being too prepared for 100% conversion to electric cars.
- In order to best promote the recycling of valuable materials in the waste shell it is taken into account that the building parts can be easily separated and sorted. It is done best if the actual separation and sorting is thought of already in the design phase, and materials and components are mounted independently of each other as far as possible. In the same way, removed components and materials must be treated with a view to ensure recycling of the highest possible quality, i.e., with the least possible environmental impact and best use of resources in the recycling process.
- Recycled concrete must be used in connection with in-situ casting of new concrete constructions with low environmental class.

As part of the tender two rounds of negotiations were held. In the negotiations the topic of the concrete in the ground was taken up and the contractors had to describe how they would overcome the possible obstacles they would meet in the ground. Normal procedure for the contractor would be to stop the work and wait until an agreement of removing the obstacles

was achieved. This normally is a risk that falls upon the building authority, since the contractor does not have any possibility to evaluate the costs before the actual amount is known. Each of the bidders were asked to describe what they would do in advance and how they would handle the situation in the building process.

The winning contractor described that they would reinforce the tips of the pile foundation and that they would dig trenches 1 metre deep in order to guide the piles better. Secondly, they described that, if obstacles were met, they would contact the building authority and the problems would be observed and solved in partnership.

A criterion in the tender for the new car park was that the developer implemented design for disassembly, including scenarios for future recycling. Consequently, a report was delivered by the contractor (MT Højgaard). They created the multi-storey car park with a steel skeleton, premade components assembled by bolts and a minimal use of concrete.

One of the main objectives in the procurement of the multi-story car park was to maintain as much soil as possible on site. Through our participation in City Loops we have established that the CO2 associated with moving soil is considerable, and therefore the savings potential when keeping soil on site is also considerable.

For this reason, we had a large incentive to address the issue in the procurement strategy. We knew in advance from the technical investigation of the site that there was a high risk of concrete waste in the ground on site. The contractor was therefore in the tender obligated to work with an optimal soil balance. The procurement process was therefore the single most enabling factor in maintaining the incentive to keep working for a soil balance and circular solutions.

In the early dialogue with the contractor, the risks were discussed and a reasonable process for what the contractor should do was agreed upon, the moment he encountered any

obstructions in the digging process. The contractor was to immediately stop and together with the municipality project manager regard the obstruction. Then he was to present an excavation price for whatever amount they had found. (The unit price was agreed upon in advance, in the tender list.) By having this very close dialogue with the contractor, it was possible to keep the price of the excavation to a minimum.

A normal procedure would have been that the contractor excavated the concrete waste, got it transported away and deposited, and brought new virgin soil and gravel to fill up the remaining pocket. This would also result in time delay, CO2 expenses on the increased transport and not least, an increased price for the builder.

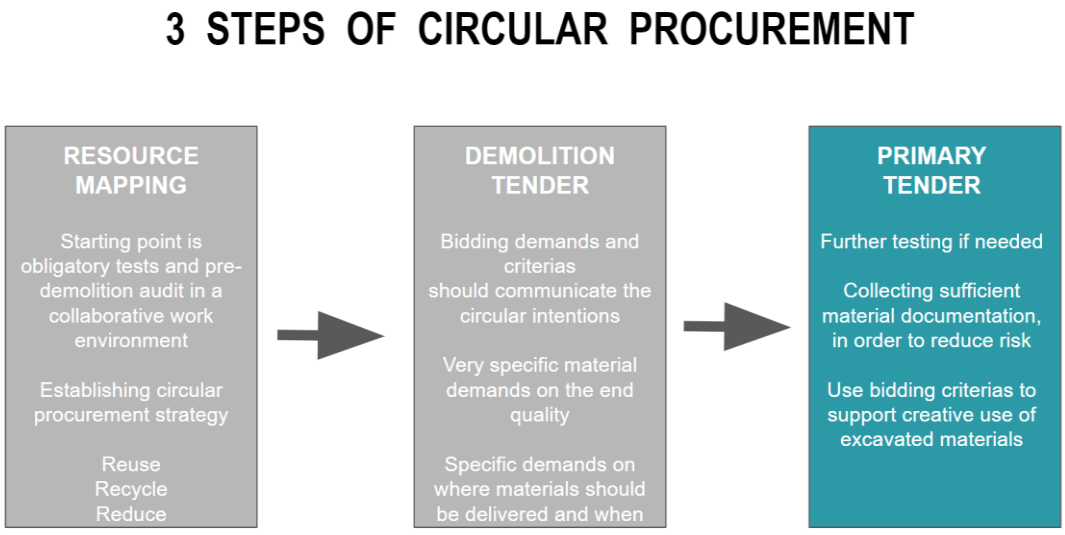
In this case, instead of the above-described normal procedure, the contractor was to contact the builder, agree on excavation, and place the excavated concrete waste just outside the plot. The contractor would then continue with his normal tasks, while the project manager of the builder ordered a crushing contractor to crush and sort the dug-out materials into three fractions. Fine, coarse and mixed aggregates.

When this was complete, the contractor immediately rebuilt these aggregates into the site project. The fine and coarse aggregate was incorporated into new concrete in the ground level floors, and the mixed aggregate was used as bottom protection gravel. The contractor was obligated to do this, as the tender stipulated that he was responsible for keeping soil balance. The complexities and costs associated with the excavated concrete were turned into a benefit for all involved parties. The original period of the project was not altered, as all crushing and rebuilding was kept within this timeframe. The obstacles were found and rebuilt into the site within approximately two months.

Lessons learned about circular tenders

Working with recycling and reuse can be associated with several practical challenges. This is because the recycled and/or reused building materials will not always be thoroughly tested, and because several of the construction processes that are linked to building with these products and materials, are still relatively new.

The early collaboration is particularly important in construction projects that begin with an environmental and resource mapping of a building ready for demolition, because this gives the parties the opportunity to identify together the places where reuse and/or recycling of materials is possible. The contractor's knowledge is an important contribution to the advisor's work in the very early phases and in screening the environmental and resource mapping. The detailing process around material use, construction technical conditions and technical assessments of a material's qualitative nature and thus future use can have an impact on how the material is used in relation to planning, detailing architectural and technical aspects. Based on interdisciplinary discussions in the project, a common knowledge base and a common process are created regarding the development of prototypes of the selected reuse and/or recycled materials. When knowledge about the use of materials is brought to the table, the demolisher can prioritise selective removal of a building and its building parts, which must be brought to reuse or recycling. Parallel to the subsequent planning in accordance with YBL 18, it will be advantageous to initiate a further one product qualification and development in collaboration with relevant manufacturers and contractors.



It is recommended that, prior to the circular tender, the client sets objectives for which circular principles the client wants to work with in the current construction. The objectives for circular principles can be drawn up in collaboration with the Sustainability Management.

As an example, the client can set concrete targets for CO2 savings, targets for use of circular principles such as design for separation or the degree of use of reuse or recycled materials in the building when it is finished. The National Strategy for Sustainable Construction can advantageously be used as a baseline when targets for CO2 impact are to be set. The objectives for circular principles must be transparent for all parties in the construction, including builder, contractors, consultants and ultimately the end users. The objectives can be linked to incentive schemes to motivate the advisers and the contractor.

In connection with the client having to set targets for, for example, recycled materials or recycling of materials, a calculation of any CO2 savings (LCA calculations) could support the decision-making process. In order to identify all aspects of such a saving, and because in the industry does not yet have LCA calculations for many reuse or recycled materials, will it be necessary to bring more expertise across the value chain into play in order to enlighten everyone prerequisites for the recycling of the material. The circular principles and requirements should be laid down already at the conclusion of the contract.

In the circular turnkey contract, the objectives for circular principles in construction are set by the client in collaboration with the Sustainability Management prior to holding the turnkey contract tender.

The key to innovation in a building with circular principles assumes that the client can have an open and trusting dialogue with the contractor and advisers. The dialogue is the prerequisite for that the circular principles in construction are as much as possible assessed from both an environmental point of view and architectural value, costs, quality, etc. The framework for innovation and the challenges involved should therefore already be discussed at the negotiation meetings, where the parties should articulate the special conditions that require dialogue and openness.

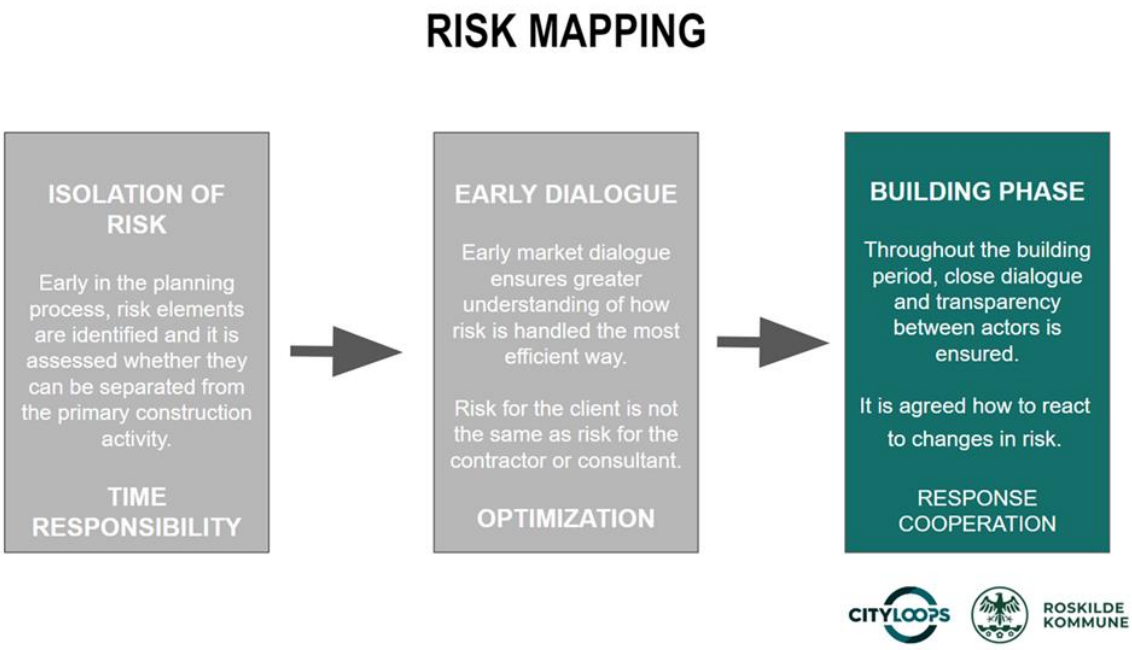
The negotiation topics below are an expression of the issues where law is particularly affected by the circular principles. Dialogue about the themes creates transparency about what can be created in particular insecurity on the part of both the client, contractor and advisers.

Negotiation meetings can be structured in many different ways depending on the purpose of the negotiations and which resources are used. Since the negotiations are part of the evaluation of the offers, the client can advantageously divide the negotiation meetings so that they follow the award criteria in the tender conditions. This makes it easier for the client to give constructive feedback during the dialogue, just as it is easier for the tenderer to adjust his offer based on the negotiations and the client's feedback.

Risk management

Risk management is a fundamental element within the planning process of circular projects. As a starting point, any potential risk factors should be identified as early as possible, followed by a risk assessment where responsibilities, risks, and consequences are described. Based

on the risk assessment, an evaluation is made to determine if there are opportunities to mitigate the risks and ensure that responsibility for risk management is appropriately assigned. Frequently, rigidly assigned responsibilities can impede proactive problem solving and risk mitigation. Therefore, it is crucial to maintain an open-minded approach towards each risk, accepting alternative responsibility placements if they prove advantageous in resolving the issue.



Incorporating proactive, transparent, and mutually agreed-upon rules for identifying, managing, and allocating responsibilities and risks among project stakeholders adds value to the project. Often, open dialogues about risks can help minimise the potential consequences resulting from triggered risks.

The nature of each risk determines the approach to its elimination or reduction. Certain types of risks can be neutralised through increased knowledge acquisition, such as conducting sampling. This is particularly relevant for risks related to insufficient information regarding scope and consequences. Identifying a risk associated with the presence of environmentally harmful substances early on provides an opportunity to investigate and address it directly, instead of delegating the risk to a consultant or contractor who may include it in their bid.

As part of the risk assessment process, early market dialogues are conducted with key stakeholders. Circular construction projects encompass a broader value chain compared to traditional construction, and individual stakeholders often have differing perspectives on risk. Therefore, assigning responsibility for a particular risk to the actor who has the best means to neutralise it presents a significant potential advantage. This approach can be effectively integrated into the tendering phase, encouraging bidders to identify risk elements impacting

their responsibilities that may be beyond their immediate influence. This allows for the proactive management of risks to be addressed during contract negotiations.

During the construction process, new risk factors may emerge, or known risk factors may change, necessitating alternative management approaches. Hence, the tender should include a process description detailing how newly identified or altered risks will be managed throughout the construction process.

CITYLOOPS

CityLoops is an EU-funded project focusing on construction and demolition waste (CDW), including soil, and bio-waste, where seven European cities are piloting solutions to be more circular.

Høje-Taastrup and Roskilde (Denmark), Mikkeli (Finland), Apeldoorn (the Netherlands), Bodø (Norway), Porto (Portugal) and Seville (Spain) are the seven cities implementing a series of demonstration actions on CDW and soil, and bio-waste, and developing and testing over 30 new tools and processes.

Alongside these, a sector-wide circularity assessment and an urban circularity assessment are to be carried out in each of the cities. The former, to optimise the demonstration activities, whereas the latter to enable cities to effectively integrate circularity into planning and decision making. Another two key aspects of CityLoops are stakeholder engagement and circular procurement.

CityLoops started in October 2019 and will run until September 2023.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 821033.