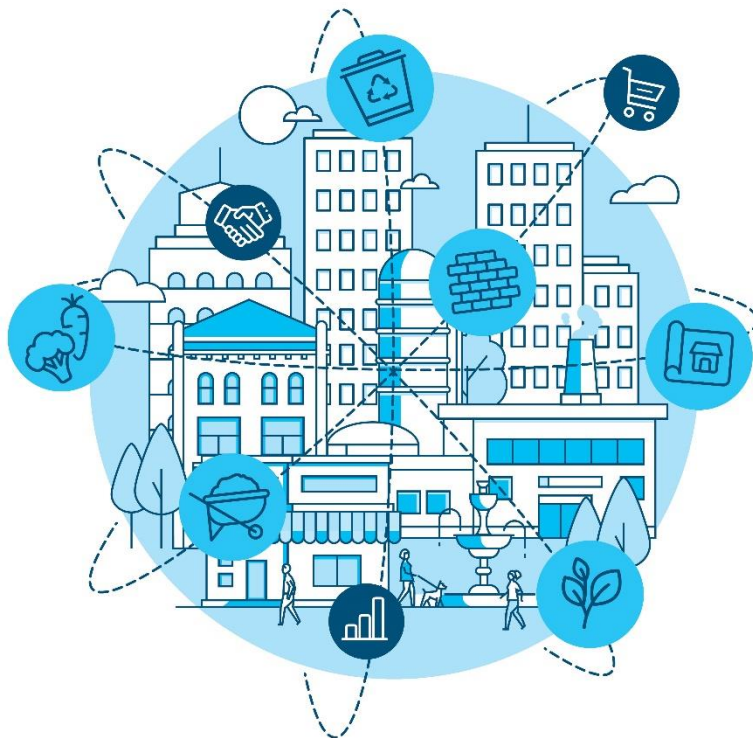




Circular procurement in Seville

Extract from the Demonstration Report

Seville, Spain



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This text describes Seville's experience in circular procurement for the renovation of water pipelines and the procurement of an awareness campaign on the abandonment of CDW. The sections come from Seville's CityLoops demonstration report available [here](#).

Introduction

The demonstration actions in Seville under the CityLoops project implementation have contributed environmental and procurement programs of the municipal companies providing comments and suggestions to the Environmental and procurement departments.

The CityLoops project implementation has strengthened the know-how in circular waste management issues within municipal companies. The results and suggestions from the Seville team have served as a catalyst to generalise the inclusion of circular clauses in the procurement of Emasesa and to reduce the illegal CDW dumping and increasing the awareness commitment of Lipasam increasing the visualisation and information of the clean points.

The experience from demonstration actions in Seville has shown that there is a need for development in Seville's tendering practices so that procurement can promote a circular economy approach. Currently, the benchmark for tendering is a balanced price/quality. Legislation approved by the public authorities enhances in the first place the minimization and reuse of CDW, in the second place the production of recycled aggregates through the use of authorized treatment plants, and in the third place the valorisation of those wastes that are not suitable for recycling, it must be always considered as a last option its elimination in an authorized landfill. However, in Spain, CDWs are being treated inappropriately. Project designers and construction managers do not consider in most cases the recycled aggregates of CDW as valid materials for new constructions, the main reason for this besides the lack of legal regulations, is the scarce knowledge of recycled aggregates and their use as granular layers in pavements and as recycled sand in pipelines.

CityLoops demonstration actions in Seville have promoted the generalized inclusion of the circular clause for the circular CDW management in the procurement of Emasesa maintenance works and in the development of a quality assessment tool for the use of CDW as recycled aggregates in water and sewage infrastructures.

As a main output of the CityLoops project, new best practices guidelines have been drawn up to promote the circular economy in CDW management. The best practices propose new qualitative requirements, standards and incentives to promote a circular economy approach.

Overall, nine workshops and seminars/webinars have been organized by the CityLoops Seville Team for the decision-makers, procurement personnel, and other stakeholders of the construction- and demolition sector in Seville. In those workshops, the participants developed ideas and solutions for better upcycling of circular CDW management.

Renovation of water pipelines with circular material management

EMASESA, as the public entity responsible for water and wastewater infrastructure and management in Seville, will undertake the circular renovation of old water and sewage pipelines by recycling concrete, road surface, filling, and soil. This demonstration action focuses on water network infrastructures and the materials are concrete pipes, road surfaces, soil, and filling material. The CDW quality and technical properties of the dug-up pipes in the demonstration sites will be analysed and compared to the required specifications, which must be met for the recovered material to be used again in construction. If it meets the quality standards, the CDW will be used to replace primary raw materials such as filling under the pavements in pipe replacement works, and/or to improve soil quality in nearby municipal sites. The piloted material management approach will be incorporated into green procurement criteria that can be used in other similar public works, to ensure as much CDW as possible can be reused or recycled instead of dumped. EMASESA will work to engage construction stakeholders to mainstream the use of circular considerations in public contracts and will also publish a practical guide for quality classification and handling of CDW according to the waste hierarchy.

After end the of this demonstration actions, the outcomes expected are:

- Strengthened alliances with relevant local and regional actors in the field of CDW circularity.
- The increased amount of material that is recovered/recycled, and therefore reduced amount of material that is deposited in landfills.
- 2-3 sites in which underground pipe replacement was carried out with recycling of unearthed CDW.
- By using material from public construction projects, local re-use of CDW and/or soil for combined climate-adaptation and recreational purposes by FERMOVERT.
- A circular procurement criterion will be standard in all EMASESA's projects, demanding for reuse and recycling of CDW.

Procurement of demolition and construction works contractors

EMASESA has a strong commitment to preserving, reusing, and recycling the materials generated during water and sanitation works, as a part of its program of good practices in environmental sustainability and corporate responsibility performance.

In 2009 EMASESA has approved a guide addressed to waterworks managers wherein it develops a strategy to reduce the environmental impact of its typical works, including some obligations related to waste generation. In this document, the company shows great concerns about recycling, re-using and re-manufacturing the largest possible percentage of materials.

The guide is incorporated into the processes of the company, and becomes a duty for waterworks contractors, with clauses of this kind:

- Perform demolitions according to deconstruction criteria.
- Make the most of used materials.
- Reuse work cuts whenever possible.
- Recycling stone materials and reusing them as subbases in urbanization works, such as draining material, etc.
- Effective improvements in waste management require a need to define a hierarchy of priorities. In order of importance, these are:
 - Minimize the use of necessary subjects and resources. In other words, reducing the consumption of raw materials as well as the use of materials that may make it difficult or impossible to recyclability or subsequent reuse.
 - Reuse materials. Take advantage of the materials disassembled during the demolition that can be used later.
 - Reuse ceramics, tiles, etc.
 - 3R strategy: reduce + reuse + recycle.

As a result, EMASESA demands to all its works contractors the implementation of a waste management plan, according to the requirements established in an environmental annex that is included in the tender documents.

The use of recycled aggregates in the base units and/or subbases of the projected pavements is rewarded with additional points. The new units shall in no case entail a budgetary change to the work. These recycled aggregates shall comply with the List of general technical specifications for road and bridge works- PG3.

CityLoops project has contributed to extend those practices to all pipe replacement and renovation works, so EMASESA is currently including this evaluation criterion in all the tender documents of this types of works

EMASESA adapts its contracting requirements to the applicable regulations, as well as to the context of the market in which it operates. In this sense, it offers the possibility of using any recycled aggregate allowed by the applicable legislation and that complies with the requirements established by the PG3 standard, such as recycled aggregates from the steel and metal industry.

In this sense, most of the contractors offer the use of steelmaking aggregates, because of the availability and price.

Another contribution of CityLoops project is that Emasesa has started monitoring the number of tenders including this clause as well as how many bids in each contract include CDW.

As a next step, Emasesa is currently considering new actions following the CityLoops project, such as defining, within the tender documents, the exact measures of recycled and reused work units, or the insertion of award criteria related to the implementation of circular economy

plans suggested by tenderers, as well as reaching to agreements with waste plants to ensure the re-utilization of work materials.

In another way, further efforts have to be made, in order to improve public procurement related to a circular economy approach. Examples of those aspects are:

- Extend the use of good practices in public companies, in order to train the people of the organization to improve the management of waste generated in production systems, about circularity opportunities.
- Specify aspects related to the circular economy in bidding for infrastructure works projects, and also supply contracts.
- Bidding for infrastructure works projects: Establish the obligation in the specifications to improve good circular practices, rewarding the technical criteria for the best memory and the greatest commitment to this separation and delivery to plants.
- Reward during the tender, as an award criterion, the highest volume of material delivered to the CDW recycling plants. It would be possible to measure the volume of demolition waste delivered separately for future reuse.

Analysis of the results on procurement approach and development of best practice guidance on CDW classification.

Within CityLoops, EMASESA has started to monitor the impact of the measures taken to promote circular procurement.

The following table shows the evolution of the tender processes that includes environmental clauses since the beginning of the project. The figures clearly demonstrate the effectiveness of the internal promotion actions taken in EMASESA. This table has been done considering the year of the tender documents elaboration (year of the file), because one or several years can pass from the time the specifications are drawn up until the tender is put out.

Tender process evolution with environmental clauses considering the year of file				
	2022	2021	2020	2019
Nº Included	2	6	11	4
Nº Not included	0	1	7	13
% included	100%	85,71%	61%	23,53%

The following table shows the evolution of the percentage of bidders that offer the use of CDW, considering the date of publishing the tender process.

Percentage of bidders that offers the use of CDW , considering the date of publishing the tender process				
	2023	2022	2021	2020
Nº Included	20	104	187	57
Nº Not included	20	104	183	56
% included	100%	100%	97,86%	98,25%

This data does not show significant differences in the evolution of bidders that offer the use of CDW. EMASESA has developed an Environmental Control Manual in Works. The main objective of this Manual is to publicize good practices and work habits, which once carried out, lead to an increase in environmental quality during the execution of work. In this way, it will be possible the environmental impacts, and reach an economic, social, and environmental balance. The scope of the Manual goes beyond the territorial scope since it intends to be a document of reference and application in the works of the hydraulic sector.

The Manual is structured in 6 blocks according to the main environmental aspects and includes a set of good practices for every environmental aspect.



GOOD ENVIRONMENTAL PRACTICE SHEET GENERATION OF NON-HAZARDOUS WASTE

Planification	<ul style="list-style-type: none"> • Apply measures to minimize waste generation. • Promote training for the handling and maintenance of machinery transport of soil and debris. • Collect in the Waste Management Study the possibility of on-site recycling whenever the conditions allow it.
Clasificación/s egregation at work	<ul style="list-style-type: none"> • Separate the tipology of non-hazardous waste from 1 m3 in inert or stony, and the rest of non-hazardous waste. • When due to lack of physical space, in the work, it is not technically feasible to carry out such a separation operation, the waste owner may entrust the separation of waste to an authorized manager, in an external treatment to the work, obtaining the documentation that demonstrate this operation.
Clasificación/s egregation at work	<ul style="list-style-type: none"> • If segregation of waste is foreseen on site, these will be stored in suitable containers, duly protected and marked. • Verify that no other waste is dumped outside the work. • The rules established in the Municipal Regulations must be complied with. • The collection of residues on the root zone should be avoided. It causes compaction that decreases soil porosity, and therefore the access of roots to resources of water and nutrients, as well as a mechanical impediment to their growth. • The storage time will be less than 2 years when they are for valorization and 1 year when they are disposed of for disposal. • The collection of soil should be located in suitable areas where they do not represents a hazard to existing constructions, by direct pressure or by overload on the ground. It should be in regular form. • Don't accumulate soil on the edge of trenches.
Cleaning	<ul style="list-style-type: none"> • Maintain order and cleanliness in the work both in the materials supplied as in the waste generated. • Avoid dragging of waste or materials into the excavation area or to the drainage works.
Reuse of materials on site	<ul style="list-style-type: none"> • The generation of waste will be minimized with the reuse of all that material from the work to which the same use may be made, for example, the paving stones of the pavement.
Recycling of materials on site	<ul style="list-style-type: none"> • On-site recycling of inert or stone materials by mobile machinery in the work itself. To be done through an Authorized Manager with a Plan.
Valorization soil from excavation	<ul style="list-style-type: none"> • Promote the valorization of clean excavation soil for their reuse in works as raw material.
CDW Transport	<ul style="list-style-type: none"> • Signpost access area and route within the work to avoid unnecessary travel. • The container should always be covered with a tarpaulin to avoid dust propagation. • Debris will not exceed the side closures of the container

Preparation and procurement of awareness campaign

The abandonment of CDW in vacant lots and ditches, mainly in peripheral areas, is a problem from an environmental, landscape and cost point of view for its removal and cleaning for cities. In Seville, for this pilot action, 15 of the publicly owned plots that present a more serious situation of abandonment of CDW have been selected. The scope of the pilot is limited to publicly owned parcels due to the difficulty of contacting private owners.

In the design of the campaign, an attempt has been made to opt for a mixed model of physical and online actions, through billboards at points of abandonment, where the prohibition of this practice is emphasized, in addition to stressing that it is a crime that contravenes the ordinances premises and with an economic penalty. Likewise, it was considered appropriate to specify on said signage the possibility of using the Clean Points system managed by LIPASAM, under the conditions established by the Local Waste Management Ordinance.

For the digital part, the making of a video was devised, accompanied by a segmented marketing action to the population near the plots where posters were going to be placed. The message to be conveyed in the video is the same as that of the billboards, in addition to reinforcing the support of LIPASAM (the city's cleaning and waste management company) that it carries out in the area within its powers.

From a technical point of view, the recruitment required the campaign to comply with the following concepts:

- Complete creativity of the campaign.
- Design and production of 15 billboards with a support of total measurements of 500mm to the ground and 3000mm of free pole, of which 1500 wide x 1000 high will be used, leaving 2000mm free from the edge of the sign to the ground. Being composed of 2 tubes of 3500 40/40 x 1.5 mm galvanised, and 3 full-width reinforcement tubes of 30x20 mm galvanised, with assembly included in 15 locations. The material of the poster had to be dibon on the front, 1500 x 1000 mm in full colour, painted and laminated with turned ends and hidden screws, leaving the front smooth.
- Creation and dissemination of an online campaign in the areas of interest. In addition to informing about the prohibition to abandon CDW, the campaign would be used to inform about one of the tools to be developed in the CityLoops project, consisting of a web tool that will allow the citizen various functionalities, such as:
 - Know what type of construction and demolition waste can be deposited in the Collection Points.
 - Quantities admitted.
 - Find out which Clean Point is the nearest, etc.
 - Realisation of a Video-spot.
- The budget for the campaign was 9,000 €.

Lessons learned

The main challenge on procurement was that the CityLoops managers from Lipasam and Emasesa are not decision-makers in the Seville municipality nor other municipal companies' procurement processes. Those managers have collaborated with their internal procurement departments and have provided advice to the procurement units of the municipality, but final decisions are out of their scope. The planned actions for the CityLoops project were focused on these two municipal companies in order to scale up the circular criterion on Emasesa's tendering and reduce the illegal CDW dumping managed by Lipasam. The discussion on the technical changes in the procurement practices with the other municipal companies and stakeholders was just started with CityLoops project implementation, so the implementation into their procurement process, even after receiving good feedback, is up to their own. The main lesson learned has been that an organizational change has to be designed at the strategic level. Policy decision-makers have the position to set clearly defined circularity criteria and monitor their implementation. The work started with CityLoops will contribute to enhancing collaborative connexions and support circular approach in all the municipal companies.

The CityLoops team from Seville suggests several practice changes:

- Planification: Apply measures to minimize waste generation; promote training for the handling and maintenance of machinery transport of soil and debris; and collect in the Waste Management Study the possibility of on-site recycling whenever the conditions allow it.
- Classification/segregation at work: Separate the typology of non-hazardous waste from 1m³ in inert or stony, and the rest of non-hazardous waste; when this is not possible due to limited space, such a separation has to be made by an authorized manager which delivers the documentation that demonstrates the separation; If the separation is made on site, these will be stored in suitable containers, duly protected marked; verify that no other waste is dumpy outside the work; comply municipal regulations; the collection of waste from the root zone should be avoided; the storage time should be less than 2 years; the storage and collection of soil should be located in suitable areas avoiding risks like direct pressure or overload; and don't accumulate soil in the edge of trenches.
- Cleaning: Maintain order and cleanliness in the work for both supplied material and waste and avoid dragging waste or materials into the excavation area or to the drained works.
- Reuse of materials on site: try to reuse all possible materials e.g., paving stones the pavements.
- Recycling of materials on site: Recycle inert or stone material by mobile machinery by Authorized Manager.
- Valorisation of soil from excavation: Promote the valorisation of clean excavation soil for reuse in works as raw material.

- CDW transport: Signpost access area and route within the work to avoid unnecessary travels; that container should always be covered with a tarpaulin to avoid dust propagation; and debris will not exceed the side closures of the containers.

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.



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