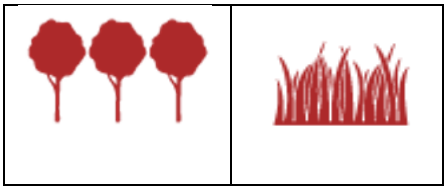
Combining vegetated ditches, new trees and vegetated paving to cool a playground and streets

Saint-Omer Montaigne Pre-school and surrounding streets



Summary
Existing hard, impervious, paving has been replaced with softer surfaces to enable water to infiltrate and vegetation to grow in the spaces. New trees were planted, three vegetated ditches were created, a new metal awning has been installed as well as container gardens. This has enabled a heat stress resilient renovation of the schoolyard at the Montaigne school, two adjacent streets (rue de Cassel and rue d'Hazebrouck) and a playground for children to improve the comfort of pupils and residents.

Before intervention *Montaigne schoolyard, Saint-Omer*	After intervention *Montaigne schoolyard, Saint-Omer*
	
Cassel street and playground, Saint-Omer	*Cassel street and playground, Saint-Omer*
	
Hazebrouck street, Saint-Omer	*Hazebrouck street, Saint-Omer*

Location
Saint-Omer is located in the heart of the Hauts de France region, in northern France, about 50 km from the coast. It extends over 16.4 km^2 and has a population of 14,726 people, 10,500 of whom live in the city centre. Although there are large areas of green space, for example “le Marais” and the public garden, these are on the edge of the city. The historic downtown area is heavily built up and so sensitive to thermal stress.

Site Description
The Montaigne preschool site is composed of a schoolyard, a playground and nearby Hazebrouck and Cassel streets. These spaces are very sensitive to heat stress, due to their high proportion of hard surfaces and are public spaces frequented by vulnerable children and elderly people.

The decision-making journey
Saint-Omer city council was the contracting authority with AUD assisting with project design, public consultation, and co-ordinating with technical partners). INGEO managed the implementation of the scheme and supervised work on the ground. ADOPTA, specializing in sustainable rainwater management were co-opted to integrate this technical aspect into the project.

Two meetings were held with the “Conseil de quartier” (neighborhood council) and two more with the school’s teaching staff. At the first AUD has presented the site, project goals and collected the ideas of the inhabitants and teachers. At the second they presented the design, based on the ideas collected, providing more green space shaded areas, wooden furniture, and including nature-based solutions for stormwater management. It will also significantly reduce car traffic.

Implementation
There was strong political support, and this project helps to achieve the target for St Omer of renovating all schoolyards in the next five years. No permits were required.

Constraints that had to be considered:
At the Montaigne pre-school, for children up to the age of 6 years, the works had to be carried out during the school holidays and, while this was going on, access for vehicles had to be maintained.

Lessons learnt from this pilot

- The short time scale did not allow engagement of a landscape architect or designer which affected the quality of the implementation. AUD assisted the city council but could not go too far into the detail as legally this is not within the remit of this organisation. Standard awnings were chosen instead of having these custom-made and some assembly details were not realized with great precision. Some trees didn’t survive their first summer so replanting will be required at the end of the year 2022.

- Some of the construction details could have been better executed for example kerb installation of kerbs and cutting paving stones. Saint-Omer is required to integrate the issue of carbon into developments, promote low-carbon or reused materials to comply with this existing paving originally used elsewhere could have been used instead of new concrete paving slabs.
- The challenge is now to accelerate the deployment of such developments, moving from a demonstration approach to one of generalising responses to the challenges of adapting the city to climate change and the energy transition. This requires implementation of a multi-year, multi-site programme allowing the mobilisation of all the partners and reducing the administrative procedures.
- Raising awareness of the effectiveness in reducing heat stress should be done by taking PET measurements in the presence of local residents at a public event to explain the measurements the significance for health and wellbeing.
- Provide feedback to all those involved, the city's services, the company that carried out the works and the future users, to explain how the project works and to ensure that it is used properly.

Indicative costs: please note that costs have been rounded and, while accurate at the time of implementation, can only be used as an indication of cost.

Capital Cost	€	£ =1.15€
Ground work (new paving stones, new stabilized soil, coloured asphalt, etc.)	102,036	88,820
Soft landscaping (new trees, hedges, topsoil, mulch, drainage etc.)	202,435	176,214
Total	**304,471**	**265,025**

Concerns raised during the public consultation:	**Reactions after completion**
• *Too much traffic in Cassel Street (cars) and too much illegal parking* • *Not enough shade on the playground in summer* • *Not easy for pedestrians to move around* • *Area is not welcoming* • *The paving stones are old and damaged* • *Make the streets green* • *There are bollards and barriers everywhere, the whole area needs to be rethought* • *In summer it is very hot in the schoolyard and in the classrooms* • *Parents are afraid of the open ground => children come back from school dirty*	• *Boots and boot racks have been provided for the children so that they do not soil their indoor shoes in the mud.* • *Positive reaction from the teaching staff who are considering new uses for the playground.*

MEASURE OF SUCCESS	EVIDENCE
reduction of PET value (baseline vs result values, comparison with reference point)	Grass: 0.8°C Vegetated paving: 2.25 °C Existing row of horse chestnut trees:18.07 °C Existing Purple Maple = 15.33 °C

size of the area (m2) with improved heat resilience (the total area that benefits from the measures approximate this by using the same approach used for the initial estimation in the application form)	About 2,900 m^2
number of daily users benefitting from the intervention (if relevant/available: are there specific times of day or the year when there is heavy use?)	children (80) and teaching staff (5) in the schoolyard, inhabitants and users in the public spaces
co-benefits achieved (e.g. biodiversity, pollution reduction, economic benefits, influence on property value, long-term savings, aesthetic improvement, psychological impact etc.)	• Sustainable rainwater management, and therefore reduction rainwater runoff and surface water flood risk. • Biodiversity: more vegetation, local species. • Aesthetics: consistency of surface materials. • Psychological impact: visually more open streets, increasing desire to walk in a secure environment. • More spaces for pedestrians.
other results observed	-

The city of Saint-Omer carried out an evaluation questionnaire after this project was completed. The results are included below.

How did the European Cool Towns project meet the goals and policies of the town of Saint-Omer?

Saint-Omer is a heritage town that has made adaptation to climate change a major focus of its municipal policy. In this context, the European project has made it possible to:

- To develop a tool to understand heat islands,
- To support an urban project on a former railway freight site by integrating bioclimatism into the urban design, building and public spaces design for this future district of the city,
- Experiment with a new approach to public spaces design with all stakeholders (elected officials, technicians, school) by renovating a schoolyard.

What benefits do you think the project has brought, whether to teachers, pupils or the inhabitants of the streets of Hazebrouck and Cassel? Did you get any feedback from them?

The project allowed for a dialogue with all the actors concerned to make the greening and dewatering of a schoolyard compatible with the uses of the site. It serves as a demonstrator for the renewal public space design. The first feedback from the inhabitants is positive about the integration of these developments within the neighbourhood.

Has the Cool Towns project made city departments more aware of the issue of combating heat islands ?

The Cool Towns project has made it possible to develop a new frame of reference for taking into account heat islands in urban planning and the operational responses that can be provided, including in heritage sites. It contributes to rethinking the responses for adapting the city to climate change.

How will the city of Saint-Omer take up this project? How will the city integrate the fight against heat stress into its future policies in the coming years?

As part of its "schools plan", the town of Saint-Omer aims to redevelop one schoolyard per year, with the objective of giving more space to nature and dewatering areas. The Montaigne schoolyard offers a demonstration of possible developments.

In addition, a study for the dewatering of 4 pilot public spaces has been carried out. Its multi-year implementation will integrate the objectives of fighting against heat islands. The ambition is to allow the development of a cool island accessible at short distance for each inhabitant.

These achievements and the conclusions of the studies carried out within the framework of the Cool Towns project also serve as a reference for the dialogue with private developers, landlords or other local authorities in the setting up of operations that do not fall under municipal jurisdiction.

What is the added value of the EU funds for the courtyard and street renovation project?

The European fund has a real leverage effect for the realisation of innovative operations and the renewal of planning practices.