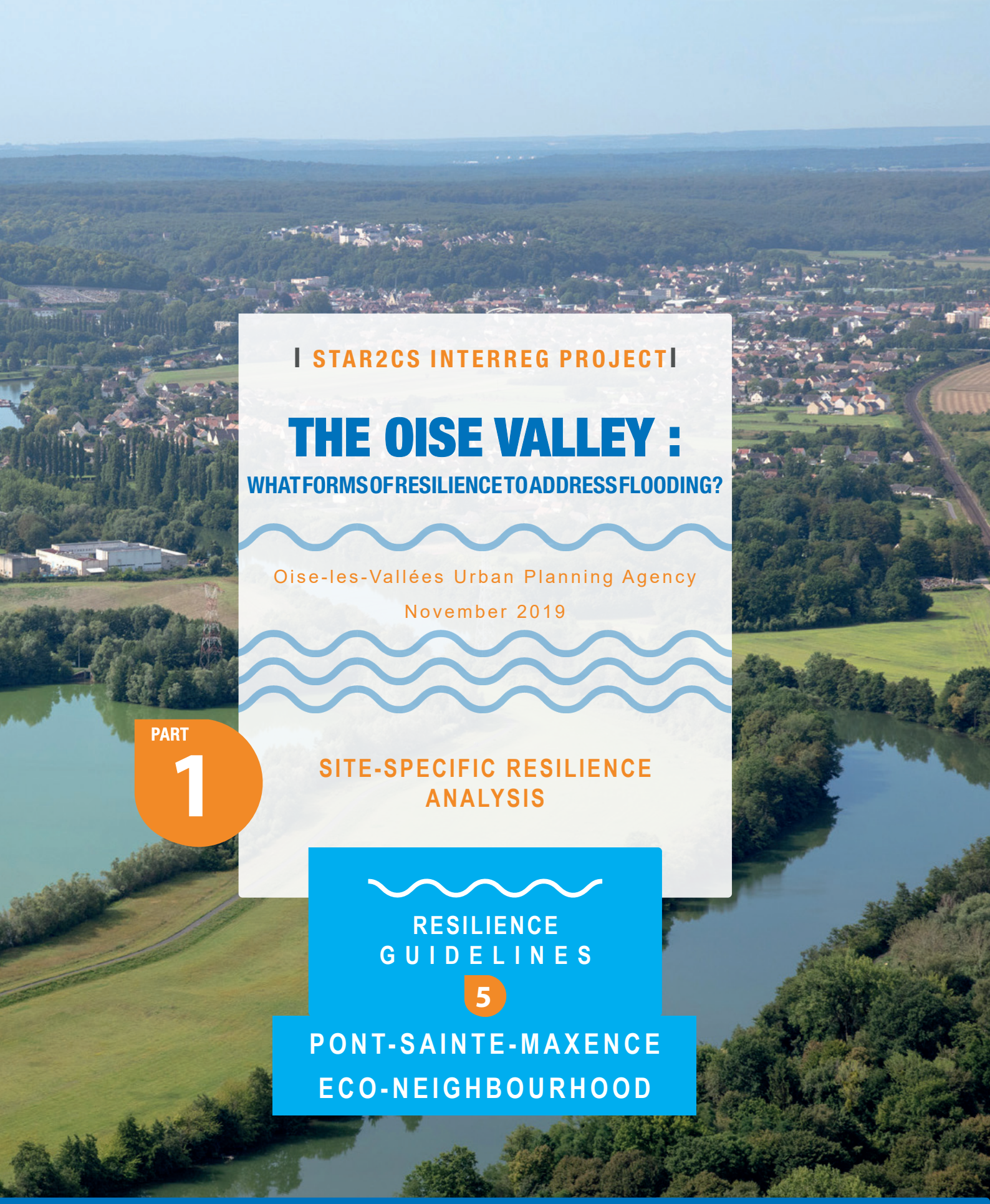


STAR2CS INTERREG PROJECT

THE OISE VALLEY :

WHAT FORMS OF RESILIENCE TO ADDRESS FLOODING?

Oise-les-Vallées Urban Planning Agency

November 2019

PART 1

SITE-SPECIFIC RESILIENCE ANALYSIS

RESILIENCE GUIDELINES 5

PONT-SAINTE-MAXENCE ECO-NEIGHBOURHOOD

Interreg 2 Seas Mers Zeeën STAR2Cs
European Regional Development Fund

MAX Adaptation to climate change

Bureau d'architecture Eric Daniel-Lacombe

AGENCE D'URBANISME Oise-les-Vallées

[PREAMBLE]

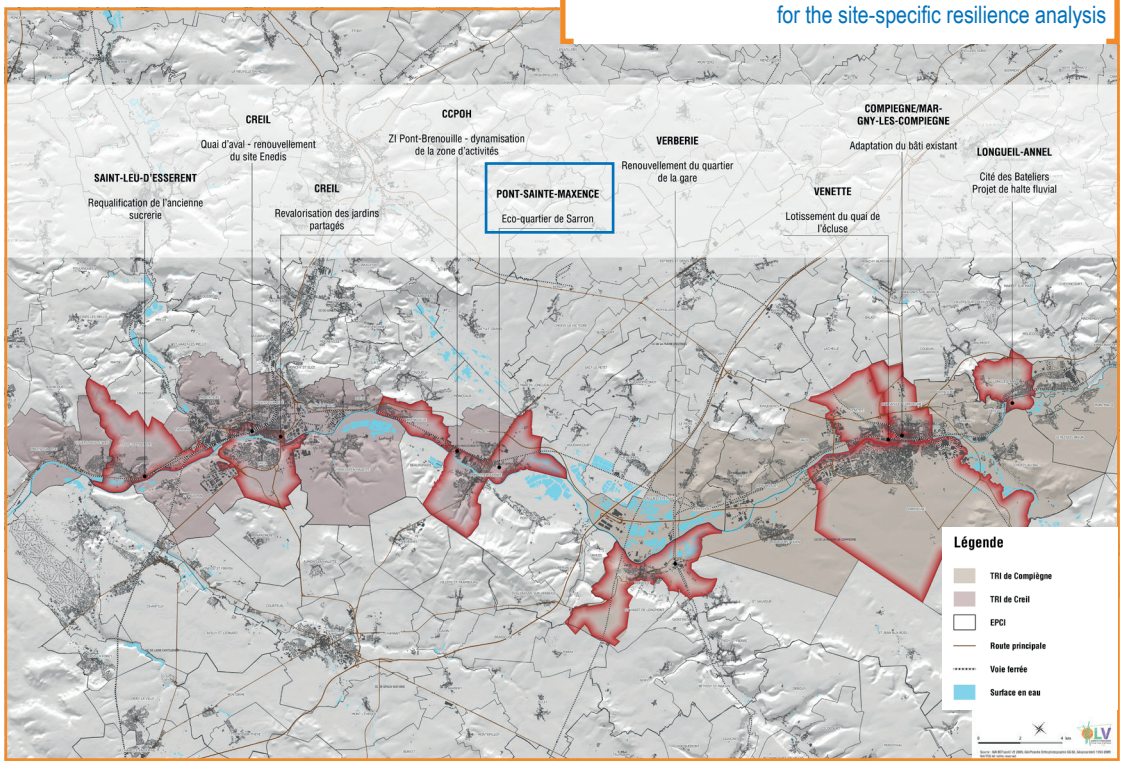
The Oise-les-Vallées Urban Planning Agency began assessing the valley's resilience to flood risk for the European Interreg STAR2Cs Project. The aim of the agency's involvement in this European project is to give further consideration to explore local development and spatial planning opportunities to address flood risk. To achieve this, three steps are currently being researched:

1. Town planning resilience: How can sites in flood-prone areas, subject to additional restrictions from differing stakeholder opinions, be planned and developed.
2. As individual flood resilience plans do not cover that of an entire region, step two focuses on a larger scale, especially the resilience of roads and utilities that keep the region up and running.
3. Finally, the agency wants to introduce a methodological decision-making tool designed for various planning stakeholders (councillors, technicians, developers, private individuals, etc.) to support the regional planning and development process.

With support from Architect, Éric Daniel-Lacombe, the urban planning agency produced nine case studies located along the Oise Valley during the first part of the project.

Using these nine case studies, the aim is to produce an overall development plan for the Oise Valleys area, based on geography, landscapes as well as land-use and economic activity, not forgetting mobility, which is the key topic in this particular area. The development plan is, and will be, adaptable and incremental. It will help foster a collective awareness of the regional resilience process with respect to flooding.

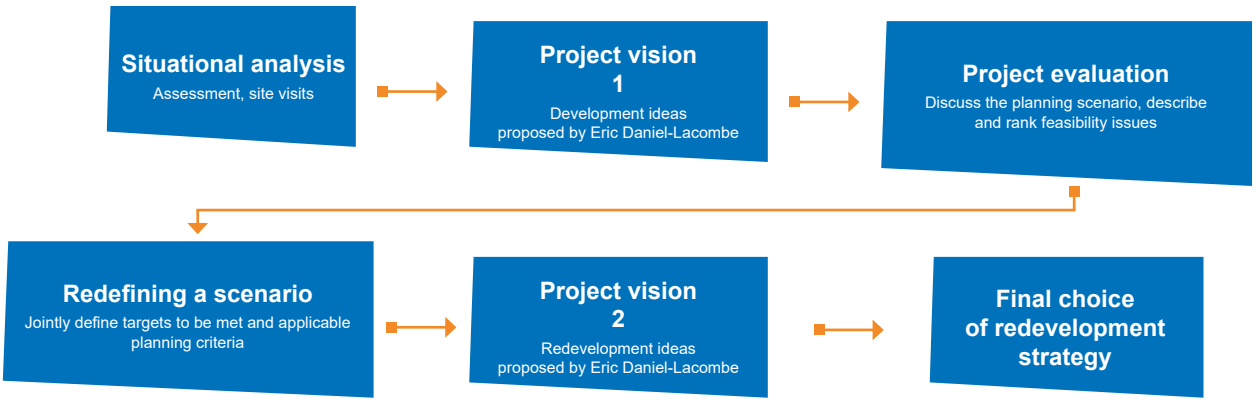
Study site locations
for the site-specific resilience analysis



Given the major waterway project to connect the Seine and Escaut rivers with the Seine-Nord Europe Canal and dredging/re-profiling the River Oise to meet European standards (MAGEO), the mid-Oise area has a chance to forge a unique identity for itself to the north of the Ile de France region, while adapting to climate change.

We have devised development scenarios for each of the nine case study situations that provide a fresh, new insight. A series of initial development scenarios for each site was presented to the relevant stakeholder then revised to provide a new version incorporating feedback and analysis (often contradictory). Each scenario is intended to become a potential vision to transform the site in question by seeking to make it less vulnerable to flood risks.

[Adopted approach]



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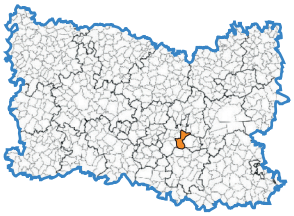
[CONTENTS]

1 SITE PRESENTATION & CHALLENGES

Presentation of local area



Over 12,000 people live in the town of Pont-Sainte-Maxence, which is part of the Pays d'Oise et d'Halatte intermunicipal association.
Local historic features, together with its setting make it an especially attractive town, on the banks of the River Oise, surrounded by one of France's biggest forests, the Forest of Halatte, which lies to the north of the Massif des Trois Forêts area.

Site issues

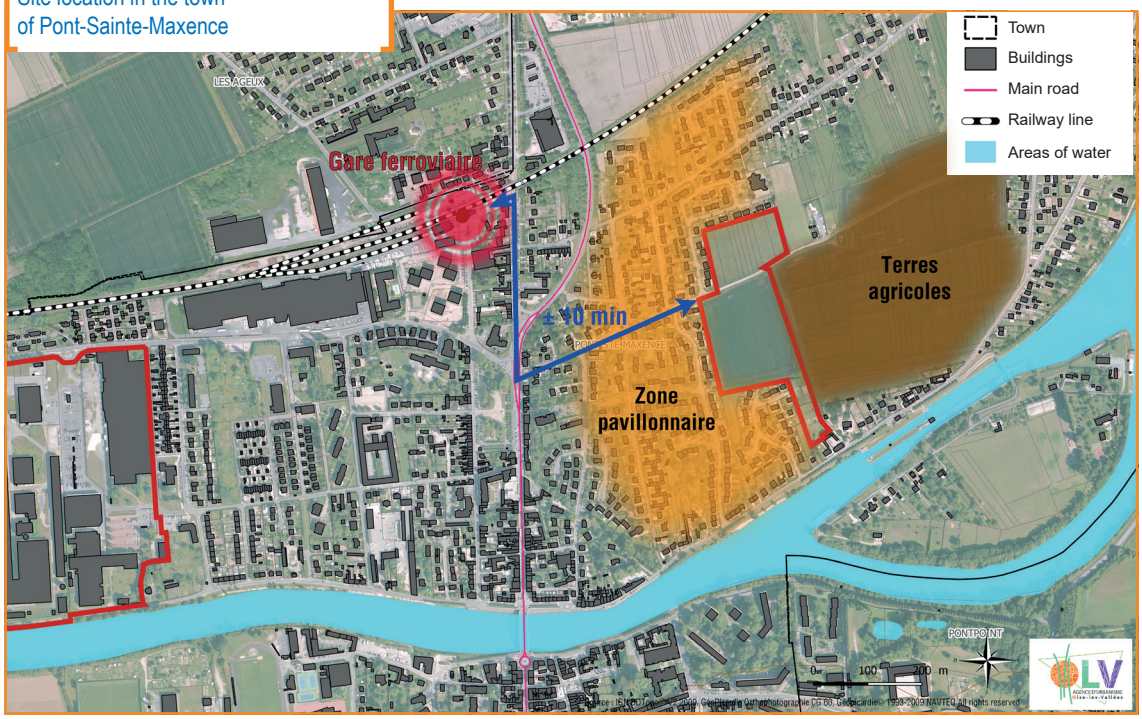
The study site is located in the town's Sarron neighbourhood, where almost 3,000 people live (mostly families).
A large expanse of farmland east of Sarron has been marked as a future development area (AU) in the Local Plan. Part of this has been earmarked for an extension to the town. Indeed, the town council has made clear its desire to build an eco-neighbourhood, with a first phase of around ten homes.
The plan has, however, been compromised by the PPRi which lists the site as a flood expansion zone.

Challenges and goals

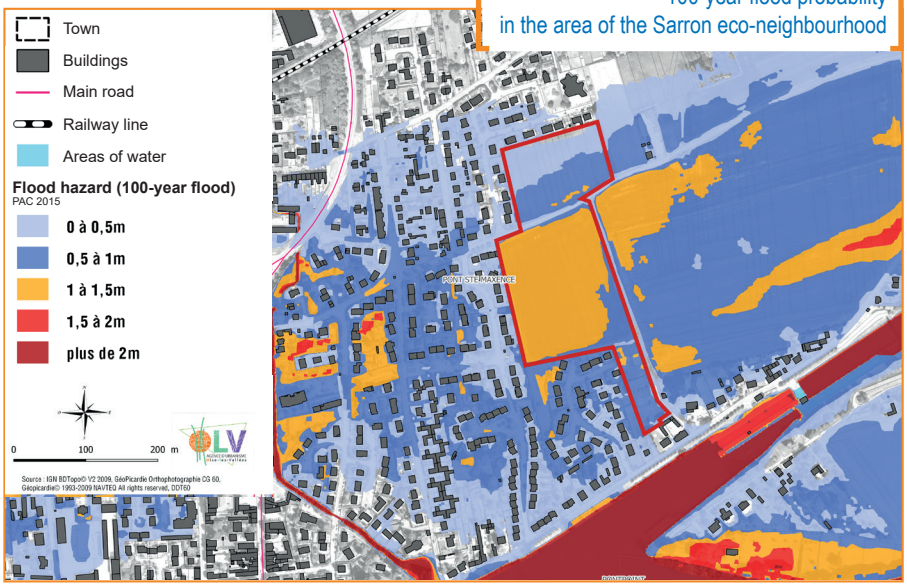
Build on the future development area (AU) and close the urban fringe by ensuring it is compatible with the Oise-Pays de France regional park Charter

Avoid building homes as much as possible in this area which has a high flood hazard level

Site location in the town of Pont-Sainte-Maxence



100-year flood probability in the area of the Sarron eco-neighbourhood



KEY FIGURE

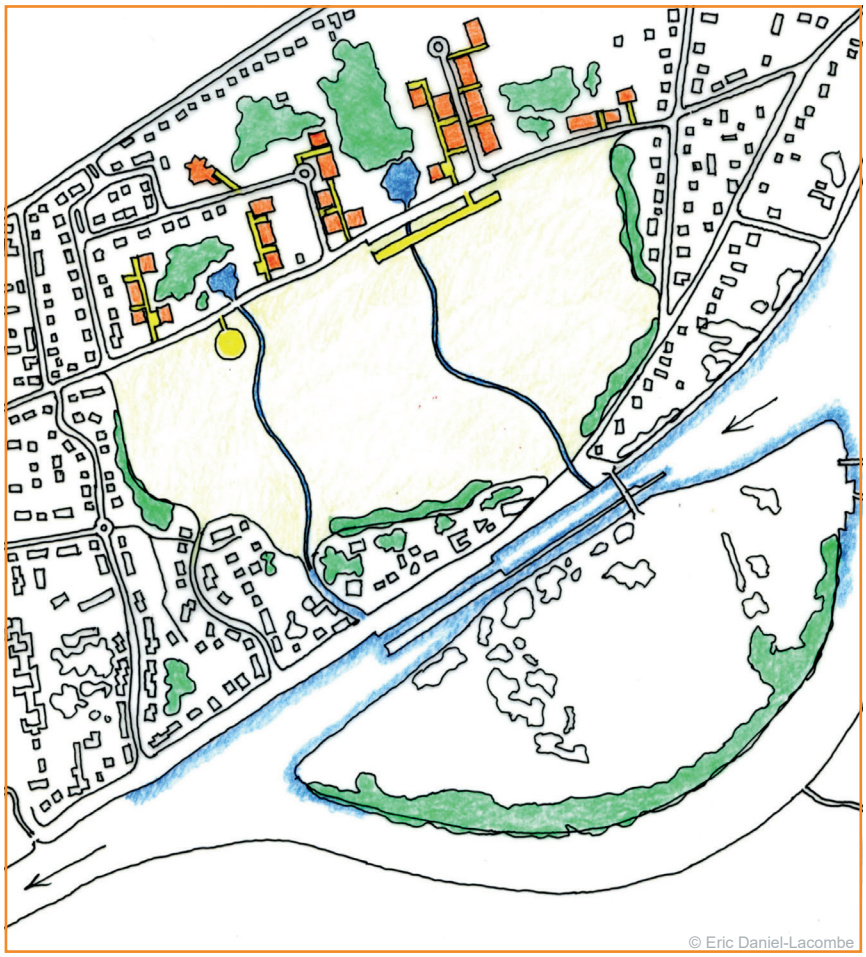
1.5 m

Maximum height that the water could reach in the event of a flood (hundred-year flood) in the local area

Summary of stakeholder positions

Stakeholder	Local authority	State
Main priority	Create an eco-neighbourhood	Minimise flood-related risks
Priority impact	Secure land to build on	Site listed as a flood expansion zone (ZEC)
Priority-related risk	Building homes in a flood-prone area	Struggles to deliver new housing developments
Risk effect	Increasing vulnerability	Loss of the town's property assets and appeal

2 DEVELOPMENT PROPOSALS



NB: All images featured on this page are taken from the presentation by Eric Daniel-Lacombe at a workshop on 2 April 2019, entitled *Inventive analysis for Oise-les-Vallées*

THE ARCHITECT'S OPINION

Eric Daniel-Lacombe

© Eric Daniel-Lacombe

The town wants to build an eco-neighbourhood on land that is currently used as a field. The site lies to the east of the main North-South axis, on the right bank of the river. Together with surrounding land, it forms an expanse of farmland as large as the island in the River Oise and protected by locks. The idea of a eco-neighbourhood almost certainly arose from the conjunction of the town and agriculture. On the flood hazard map, most of the land can experience floods two metres deep while the part above the dirt track only experiences flood waters one metre deep. During the consultation workshops, it became more sensible to develop the new neighbourhood on the less flood-prone land and keep the remaining high-risk part of the site, south of the dirt track, as farmland. As such, a large untouched area of land the size of the neighbouring island in the Oise would be treated as the realistic start of the eco-neighbourhood. This part of the town would be focused on a less flood-prone area and more connected to the current urban landscape. Clearly, it would have a different urban and landscaped architectural style.

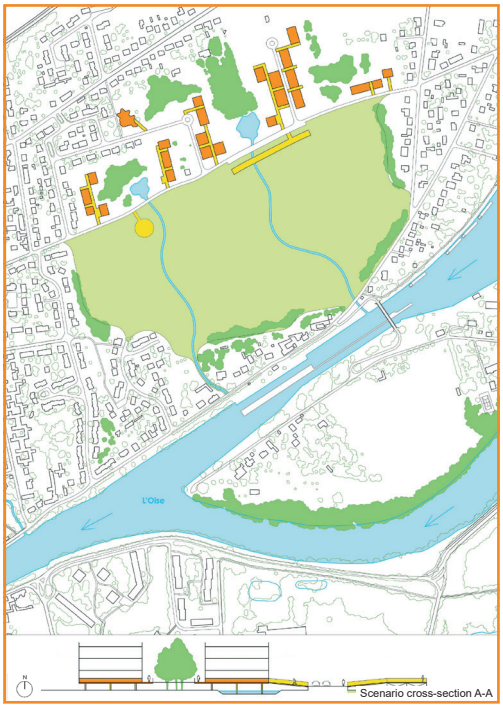
The architecture of the human settlement can be seen as an estate, or domain, formed, in particular, by dialectical ties between relationship dynamics (i.e. between the system of built forms in a settlement and the types of natural hazards in a context of climate change) and the process to create a shelter fit to live in at a time of rising demands for protection. This could be the foundation of an eco-neighbourhood. The juxtaposition between withdrawal and opening up, between protective isolation and engagement with nature, is consequently central to this vision. It therefore calls out for a revival of architectural poiesis. As with other topics, communication between both systems, with their dialectical ties, relies on symbolism. As such, I was asked to come up with concepts, architectural antimonies, faults between the journey, the mystery, the intertwining and seeking out the ties and disconnections between neighbourhoods. This resembles a myriad of ways to fire up the residents' imagination, guide it towards the presence of their homes in nature and facilitate a discussion resulting in how they interpret the place they live in. Each of these architectural scenarios encourages the local residents, without compulsion, to gain greater awareness about nature. The scenarios are mainly based on the idea of fostering an open-minded attitude among residents to nature based on how they view the attention to detail that architecture and planning provides for their surroundings.

The eco-neighbourhood will therefore have three components, a one metre-high road marking the northern boundary of the potential development and a natural area to the south that cannot be built on. There will be roughly 200 homes built to the north resembling the branches of a tree connected to the road by raised, one metre-high walkways. Then there will be a large nature reserve, which will be a place for contemplation and controlled to ban any further detached houses from being built on the edge of the reserve. An additional aspect of the landscaping plans includes the digging of two drainage ditches perpendicular to the river, to channel surface runoff gently to the river as a extension of the lines that form a key feature in the town of Pont-Sainte-Maxence.

The flood hazard map would be simple. White and pale blue for a moderate risk for the eco-neighbourhood and orange or red for wetter land in the natural areas, more closely linked to agriculture when the presence of water during hot dry periods would be welcome.

VERSION 1

In this first draft, Eric Daniel-Lacombe subsequently revised the site boundary to spare the most flood-prone areas. His idea was to develop the low-risk area north of the Chemin des Cornillards and safeguard all the southern area for a flood expansion zone.
The Architect presented his idea to the town's local councillors and technical support staff at a bilateral meeting where the concept was approved.



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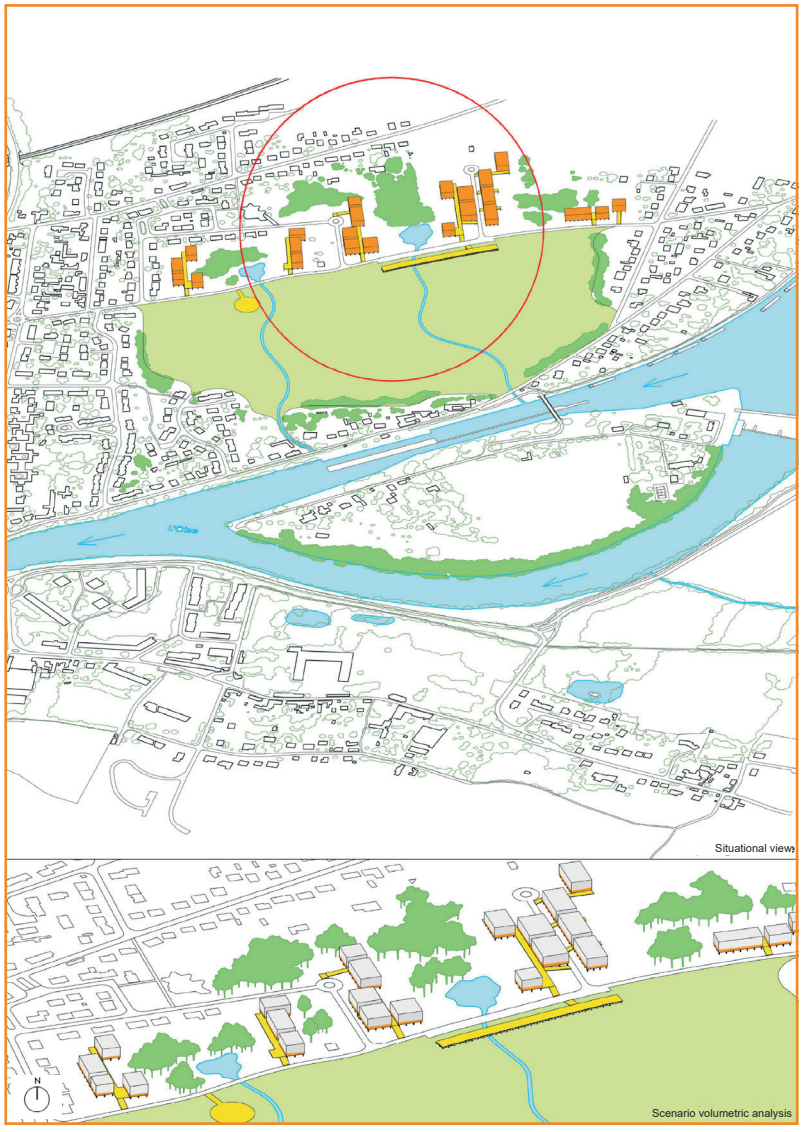

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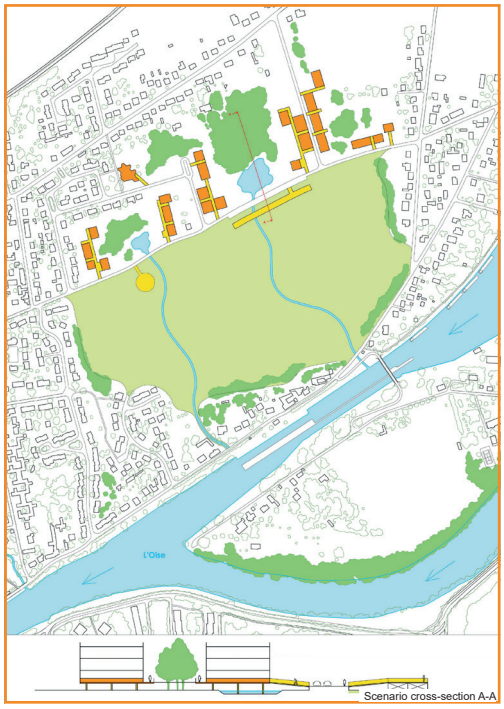
PRINCIPLES

VERSION 1

- Maintain a flood expansion zone
- Create a resilient eco-neighbourhood

VERSION 2

After subsequent discussions between the town's councillors and technical staff, the initial proposals was refined, with a particular focus on connecting links to avoid the neighbourhood being isolated. These connections are necessary for crisis management, to evacuate people when the river floods.



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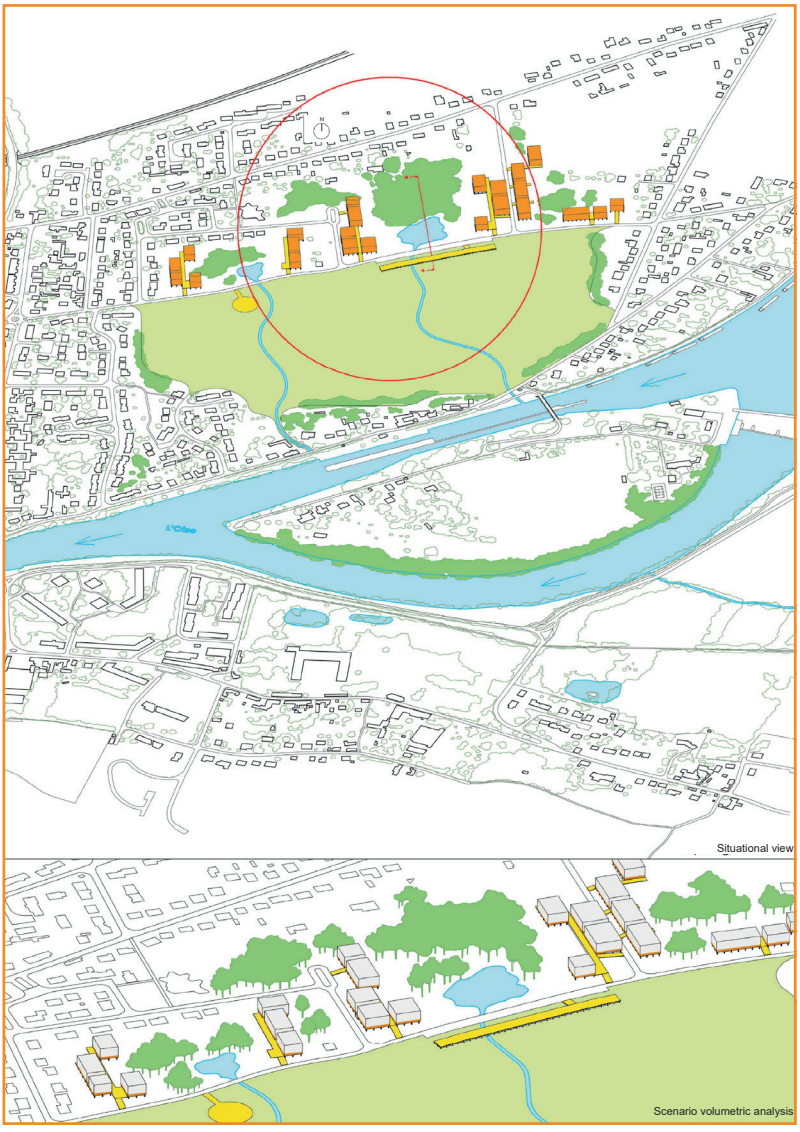
LIMITATIONS

- Road system not connected to town centre
- Neighbourhood too isolated

→ VERSION 2



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3 PROJECT EVALUATION & FEASIBILITY

Both versions proposed by Éric Daniel-Lacombe seek to avoid a certain number of detrimental effects in the event of a flood.
Each of them lessens or eliminates potential damage and is likely to generate benefits for the local area, or even the entire town.
In most cases, however, these risk reduction measures are not cheap, in financial, technical or human resource terms.

SWOT analysis

WITHIN THE PROJECT	OUTSIDE THE PROJECT
STRENGTHS Positive aspects justifying project benefits	**OPPORTUNITIES** Aspects to capitalise on the project environment
• Site is subject to a low-flood risk: the most flood-prone part remains the flood expansion zone • Creation of two streams crossing the field to channel water to the river in the event of a flood	• The area and its agricultural use is enhanced by the added biodiversity and flood observation platforms
WEAKNESSES Negative aspects to be improved	**THREATS** Obstacles that may impede project development
• Distance to the town centre	• Potential loss of farming in the event of flooding

The SWOT analysis combines the project's strengths and weaknesses with surrounding opportunities and threats to help define a development strategy.

Advantages / Disadvantages by stakeholder

	Advantages	Disadvantages
Local authority	Development of an eco-neighbourhood	-
State	Most flood-prone undeveloped zone Development in an area at low flood-risk	Additional human and material challenges in the flood zone
Users/Residents	Housing provision close to town amenities	-

Methodological details

Resilience indicators

Several aspects must be specified in terms of resilience indicators.
Firstly, it should be noted that the 5 criteria defined to study project resilience were proposed by Oise les Vallées and are the result of its methodological choice alone. We have identified:

1. An environmental benefit: The project offers an environmental advantage by respecting nature and preserving biodiversity, etc.
2. A social benefit: The project offers a social and human advantage insomuch as it provides a service to its users and improves the quality of life for the local community
3. An operational benefit: The project offers an operational advantage, making buildings technically capable of resisting floods and able to cope with flood hazards, etc.
4. An economic benefit: The project offers an economic advantage in its ability to generate income, to attract business and retail while fostering tourism, etc.
5. Scenic benefits: The project can slip seamlessly into the local area by considering the specific features of each area and delivering aesthetic benefits, etc.

Explanation of the choice of scoring system

The scenarios were scored on a scale of 1 to 10, with 0 being the lowest score and 10 the highest.
The choice of scoring method is clearly subjective and is in no way definitive. The aim is partly to trigger discussion and reactions.

Score	Category
1-2	Very poor
3-4	Poor
5-6	Fair
7-8	Good
9-10	Very good

The purpose of the scoring system is to compare the three chosen development scenarios:

- The first corresponds to the current position. This refers to the state of the land as it is now, prior to any development taking place.
- The second corresponds to a hypothetical planning scenario where flood risk has not been considered. As such, this refers to development plans that comply with current urban development guidelines but which do not prioritise resilience.
- The third scenario is proposed by Eric Daniel-Lacombe and featured above.

Aspects to consider for resilience

Level of satisfaction

Benefits	environmental	social	operational	economic	scenic	Total	Private individual	State	Local authority
Scenario 1 "Current situation"	6	2	7	2	7	24	2	7	24
Scenario 2 "Ignoring the risk"	3	4	6	7	3	23	7	3	23
Scenario 3 "Eric Daniel-Lacombe"	7	7	8	7	8	37	7	8	37