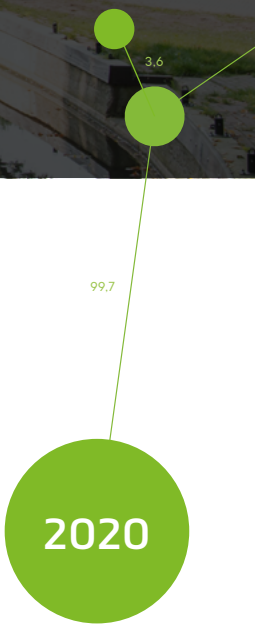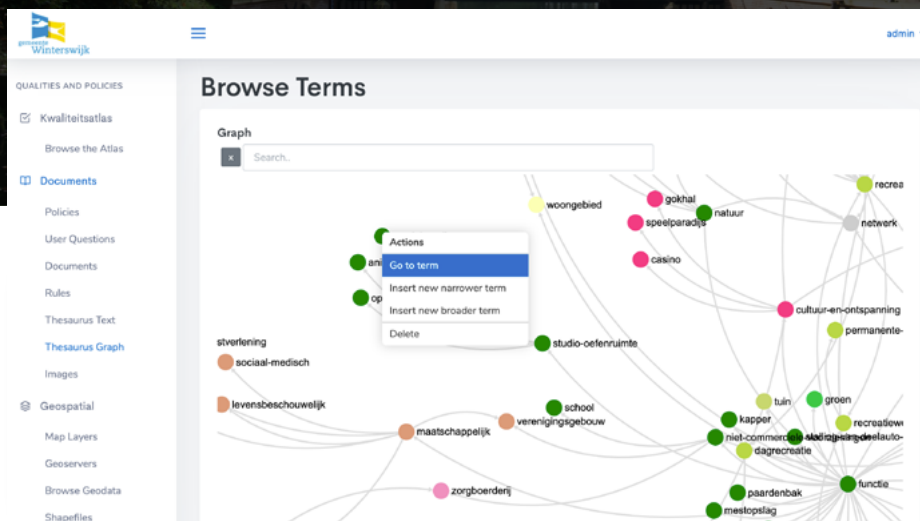structr

PRESERVING ENVIRONMENTAL QUALITY WITH STRUCTR

How Winterswijk benefits from graph technology

2020

Industry

Public Sector – Municipal Administration

Challenges

- Preserving the qualities of the rural area of Winterswijk

- Manifest clear, binding regulations for government decisions

- Making regulations accessible and transparent for all inhabitants

Solution

Quality Atlas that displays environmental quality data from open APIs on a map, combines it with user questions, guidelines and policy documents.

Benefits

- Simplified, one-click access to data

- Clear, transparent collection of rules

- Central decision-making and information tool for the government of Winterswijk

- Valuable information tool for farmers, entrepreneurs, consultants, politicians and tourists

CUSTOMER

Key Facts

Winterswijk covers an area of 135 km^2 (30,000 inhabitants) in the easternmost part of the Netherlands.

Its geology, landscape, ecology and cultural history have been described in detail for almost 150 years and are highly valued by citizens, businesses, NGOs, scientists and regional and national governments alike. In fact, it is the only Dutch municipality of which the entire area is designated as a national landscape.

The Winterswijk rural area is very important to local government as it contributes to social and economic vitality. In this respect, the challenge for the municipality has been to find an ever-evolving balance between nature conservation and space for further development, while at the same time comprehensively involving the citizens.

With the aim of building the necessary bridges between government and citizens, policies and qualities as well as abstract concepts and concrete wishes, local government has started to integrate a new type of IT. For the implementation they have chosen the Structr application platform.

- **Area of 135 km^2**
- **30,000 inhabitants**
- **Geology, landscape, ecology and cultural history**

WINTERSWIJK

CHALLENGE

People, policies and IT

To preserve the qualities of its rural area, the Winterswijk government makes policies that pose quite a few challenges:

- Equal cases should be treated equally by any government. So a rule should be clear to everybody and should apply to everybody in similar cases.

- Policies tend to stack up. An owner who wants to change a building or land use can easily be confronted with dozens of rules.

- Policies are written down in many documents, and those documents require reading from beginning to end before you can be sure that you read everything that is relevant.

- Political decision makers don't always foresee the consequences of their own decisions. Not only the consequences of stacking policies are not usually part of their evaluation. Policies are usually written in quite abstract words. While owners have very concrete wishes.

- The reasons for policies are often foggy. While accountability is a key issue for governments.

The Atlas page allows users to browse the policies and the linked geo-information.

These and more facts have raised many questions, like e.g.

- How to challenge owners when the key goal for your policies is: preserve and evolve qualities?

- How can you consider yourself a transparent government when your policies are spread over dozens of documents and 1000's of pages?

- How can we give answers to end user questions when the languages of citizens and policy makers obviously differ a lot?

Description of requirements

Winterswijk had a very clear idea of what the answer to the above challenges should be. Gerard Overkamp, the project manager, who was on the one hand familiar with physical planning policy and IT and who already knew Structr, brought together the pieces.

After evaluating the alternative providers of an IT solution, Structr was commissioned to create a tool called Atlas Environmental Qualities (short: Atlas).

The starting point for the creation of the Atlas was the description of the concept, the definition of the desired functionality and the requirements of the municipality, which should maintain and further develop the data independently of a provider. To ensure good usability for all involved, a simple, intuitive user interface and a flexible, elegant database design were crucial.
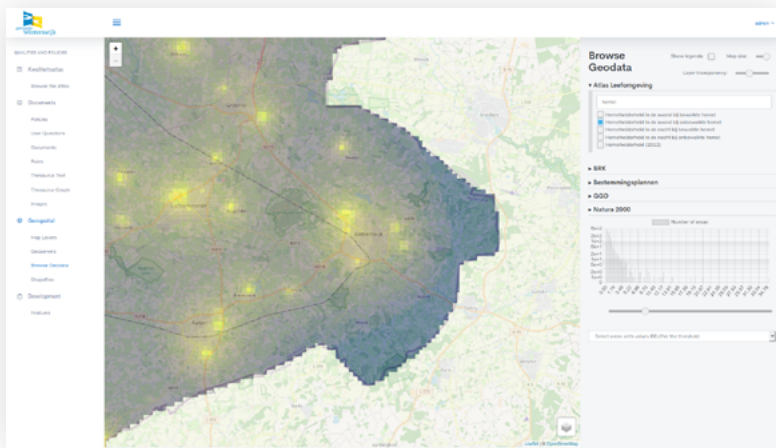
Implementation process

From definition to final review, the Atlas was created and implemented in only four months in cooperation between the project manager and the Structr team. It comprises exactly one user page and less than a dozen pages for all conceivable data maintenance.

Any number of guidelines, any number of qualities, the Atlas will not only present them on one easy-to-understand page, it also allows other decision makers to add their own data. The Atlas was developed in a very agile way, with short development cycles. Due to the immediate availability of new features in the test environment it was possible to implement and evaluate many different solutions, which led to a high customer satisfaction. On-site workshops were held at regular intervals, allowing future users to influence the development at a very early stage.

Data sources

What type of qualities are we talking about? Literally dozens. A few examples: the age of a landscape, the type of landscape based on its function and vegetation, the untouched state of a landscape, the presence of buildings, the historical value of buildings and of landscapes, the archeology of each location. And Winterswijk added two interesting new concepts to its policies: darkness and quietness.

Since Winterswijk is so well documented, the rules (laws) for the protection of the defined qualities were already available in the form of documents, which had previously served both as a guide for decisions in the town hall and as an orientation aid for landowners. The Atlas allows the administration of Winterswijk to upload said documents into the system, extract and annotate important sections and create a comprehensive summary of each policy enriched with images and hyperlinks.

The geodata browser allows administrators of the Atlas to browse different geodata sources, identify areas of interest and export map layers that can be linked to documents.

The term browser is a visual representation of the thesaurus of words that is used to answer questions about policies in the Atlas.

Solution

Structr, with its flexibility, versatility and power, proved to be the perfect tool to create the Atlas taking APIs, user questions, guidelines and quality into account.

The database design, which has been created after only two days of intensive collaboration, was optimized several times, revealing another special feature of the application platform: while IT projects usually lead to increasingly complicated solutions over time, Structr convinces with solutions that are increasingly simple and at the same time extremely user-friendly, including in data maintenance.

The Atlas brings together several very innovative solutions to various problems that arise in the decision-making process of public administrations. One of them is the combination of existing geoinformation with measured data on environmental quality from various sources in order to derive regulations.

In addition to that, the Atlas allows citizens to explore and recognize qualities of the surrounding environment to better understand the motivation behind policies and decisions of the administration.

Result and outlook

With the Atlas we have created a tool that serves everyone: the citizens of the Winterswijk community, the farmers, entrepreneurs, consultants, politicians, tourists, ... That this has already been recognized is shown by the fact that policy makers are showing an increasing interest in checking the Atlas before giving answers. It is becoming apparent that the Atlas will be a key central decision-making and information tool in the future.

Winterswijk's experience shows that the Atlas could even become a general political presentation tool for many other governments. By now the concept is so well defined that any government could produce its own Atlas within a few weeks.

"One definition document and four months of development time. That says a lot about Structr: the tool, the methodology, the company and the people. We made the right choice".

—— Gerard Overkamp
Project Manager of the rural area of Winterswijk

__ABOUT STRUCTR

The graph experts at Structr GmbH offer an integrated low-code development and runtime environment for web-based enterprise applications, in which the entire definition of an application, from data model to business logic to user interface, is mapped in a graph database.

This unique approach enables unprecedented speed and flexibility in application development and maintenance, resulting in enormous time and cost savings. Structr stands for sustainable information management that creates good working environments.

The Structr team supports customers worldwide in projects and creates integrated, holistic solutions that can be easily expanded and adapted to individual circumstances at any time.

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MUNICIPALITY
More about Winterswijk

Geography, geology, biology

Winterswijk's geography consists of one central village (22.000 inhabitants) and a rural area with mostly dispersed farms or former farms. In the rural area there are nine clusters of dwellings that we call hamlets.

Geologically Winterswijk is unique because it is located on a plateau that is pushed upwards because of movements in the ground. Those movements have been going on for a long, long time. In a quarry that is operational still, everyone can see 50 layers of geological history, comprising some 240 million years. That place was awarded the most beautiful spot in The Netherlands several years ago.

Biology

In the past 150 years the land that used to be mainly moorland has largely been cultivated. The scale of the landscape is so small though that large industrial livestock farming has never set foot in Winterswijk. Even though there is pressure on its biodiversity, the landscape is far from boring. Many protected species can be found. Walking and biking are favorite pastimes for inhabitants and tourists alike, because of the many quiet places, dirt roads, and the huge diversity in the landscapes and the vegetation.

Physical planning and ownership

The Netherlands have over a century of experience with physical planning. Land is considered a good that is so scarce that it is widely accepted that governments set rules for land use and the buildings that are needed for that land use. So owners do not have complete freedom in what to build on their properties. And likewise their freedom of using the land is limited.

On the other hand the Dutch planning system can not enforce its rules on any other moments than when an owner wants to change the buildings and / or land use. That is a delicate equilibrium, and in Winterswijk that has worked very well for decades already. It was not only local government, but farmers and entrepreneurs too, who maintained the landscape while at the same time letting it evolve to meet the requirements of new times and preserving the key value: unique diversity based on small scale plots.