Delivering a construction management app that saves more than 20% of documentation time for large projects

Customer: Docu Tools GmBH

Country: Austria

Industry: Real Estate

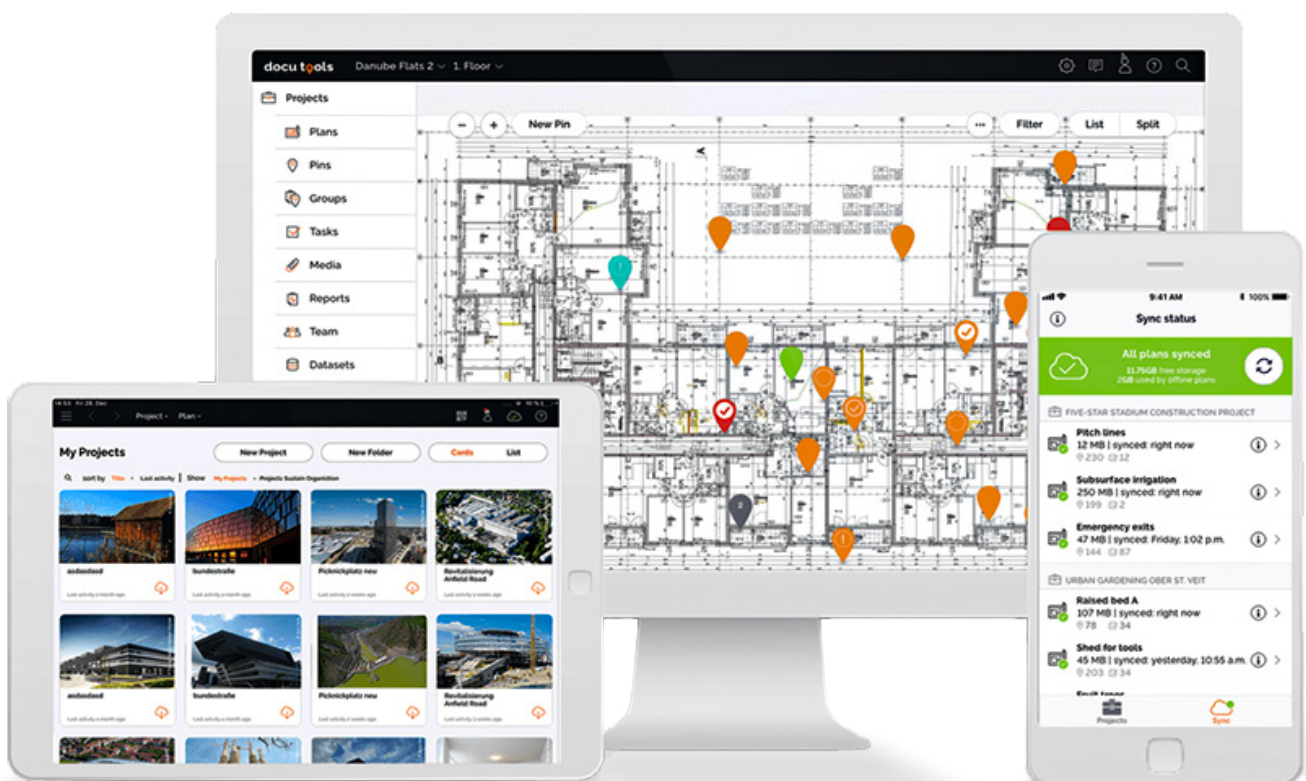| >20,000	>3 Million	68,000	240,000
Projects Handled	Photos Uploaded	Plans Created	Tasks Completed

The most important part in software projects is the human factor. Collaborating with developers that are able and willing to adopt to constantly changing framework are for our company a key topic. Luckily we could collaborate with profound developers from Daffodil that fulfilled our needs not only on the technical level, but also delivered a lot to a good team spirit.

Dr. Gerhard Schuster,
Managing Director, Docu Tools

Customer Profile

Docu Tools GmBH is an Austria based real estate tech company that provides solutions for documentation of sophisticated processes such as construction documentation, defect management, task coordination, and project communication.

Docu Tools wanted to develop a project management and construction supervision app that can keep all construction processes under control and stakeholders up to date, using their existing backend.

Docu Tools had a web-based legacy application to help construction professionals to document their project. As they began to confront customers with complex construction projects, their software showed up technical limitations to keep up with high-end documentation requirements. The company found it challenging to serve such customers with their existing software and planned to take a big leap by modernizing their application as well as extending their web application to mobile.

Docu Tools approached Daffodil to seek help in the development of a mobile app that could help construction engineers to coordinate on-site, keep stakeholders informed with pinpoint accuracy and create project documentation with just a few clicks.

The software needed to process large PDF/images of building construction design. Their legacy code, which was running on .Net platform, would take around 40-60 minutes for processing those images. During development, team Daffodil realized a few limitations in the application that were leading to delayed rendering of images and recommended an upgrade for their web application as well.

Considering the complexity of the project and need to upgrade the backend services in accordance with application architecture and functionalities, a senior developer from Daffodil led the project from client-side in Austria.
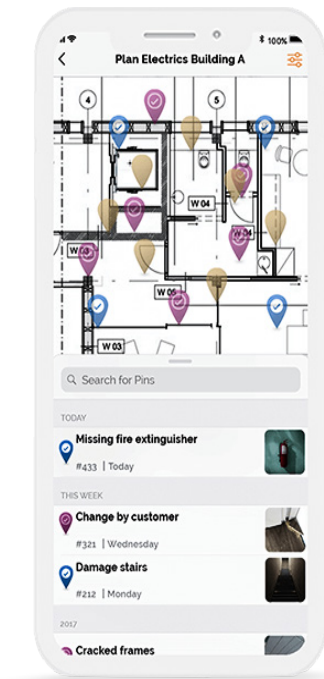
Solution

Docu Tools is a compliance and inspection management app that aims to keep complex construction projects managed and supervised. The app was developed using SOA architecture with micro services without going for single monolithic app implementation. Also, the application running cost got reduced as Java is an open source technology with minimal license cost required for AWS.

Rendering large PDF documents and 3D plans on screen was the biggest challenge in development of the application. For reducing image processing time, Daffodil used Libvips (an image processing library) and Amazon S3 for large file management, increased agility, and reduced cost

The images are scaled and rendered the same way Google maps get rendered, where users can put pin corresponding to a Lat-Long location to add tasks, status to a pin. These pins can be assigned to anyone as a part of the construction management for next actions.
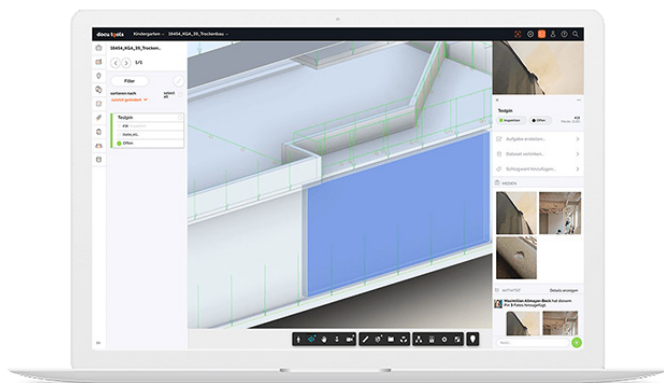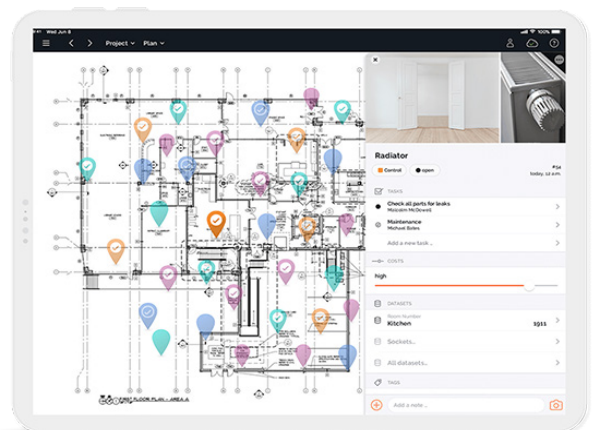
Key Highlights

Better Coordination Onsite

To have on-site coordination and control amongst engineers, Docu Tools facilitate the assignment and control of tasks, comment on posts and cooperate across teams. This ensures that any deviations in the construction plan are identified, documented, and fixed, as per predefined TAT.

Intuitive Workflow

Features like split views for simultaneous view of multiple screens, automated notification to stakeholders, task summary in notification center help engineers to keep an overview of data.

Integrated Maps & Plans

The core of DocuTools is smart integration of plans-making them fast upload to and easy to find. New plans can be integrated to map by searching for them or adding pin to specific location.

Docu Tools is available in 21 languages, covering all countries of Europe and America. The compliance management app is further updated with General Data Protection Regulation (GDPR) to ensure security of personally identifiable information (PII).

Business Impact

As a result of the extension of their web solution to a mobile app, Docu Tools has been used to manage a number of building projects in more than 25 countries in Europe, ranging from large construction sites such as airports or train stations to residential complexes. A few projects that were implemented using Docu Tools include **Vienna University of Economics, Allianz Stadium, Skylink at Vienna Airport (Terminal 3), Flextronics International Ltd.'s plant in Austin and Charité Berlin - one of the largest university hospitals in Europe.**

Technology Stack

- Java
- Spring Rest
- JPA
- Hibernate
- Sprint Oauth2
- Postgres
- AWS S3
- AWS Lambda
- Docker
- GOCD
- Maven
- Gradle
- ReactJs

About Daffodil

Daffodil Software is a software engineering partner to 100+ organizations across the globe and has been helping them in making their software products more robust, teams more productive and processes more efficient. Our ability to look beyond technologies to deliver innovative solutions with scale and speed has been lauded by our clients as well as the tech community worldwide.

Since our inception, we have invested in organic growth; building on our engineering capabilities, organizational processes, and culture required to deliver a truly collaborative ecosystem for solving technology challenges. At the core of Daffodil lies a culture rooted in innovation, learning and a result-oriented mindset.

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mongoDB MongoDB Innovation Award	IT Europa Finalist	**GoodFirms** TOP SOFTWARE DEVELOPMENT COMPANY goodfirms.co	
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