# R3GIS
managing spaces

# MANAGE YOUR SPACES EFFICIENTLY

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## Digital solutions for smart cities

www.r3gis.com

## Company profile

R3GIS has a wealth of experience in creating Web-GIS solutions for the management of geospatial data. Specifically, R3GIS develops multi-user platforms for the management of assets like urban green spaces, buildings, roads, etc. R3GIS innovates by connecting two components: facility management tools and geographic technology (GIS, remote sensing data). The result is a range of platforms with a geospatial approach to asset management.

The platforms provide shared access to all stakeholders, thereby greatly improving the efficiency, transparency, and traceability of management activities. R3GIS is constantly updating and improving its tools according to latest industry trends, enabling it to provide valuable added solutions and increased customer satisfaction. R3GIS invests approximately 30% of its time into innovation, mainly through EU funded projects and cooperation with various universities, research institutions, companies, and start-ups.



The R3GIS Team

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## Products & services

The business of R3GIS is to develop and sell platforms for asset management. R3GIS' product mix currently comprises three platforms: GreenSpaces, WorkSpaces and RoadSpaces. These provide complete solutions to our clients, thanks to:

- a Software as a Service (SaaS) **Software Platform** business model.
- **Services**, including data handling, training, development of custom features, integration with existing ERP and CRM applications, integration with digital twin platforms.
- **Hardware** to enhance the use of the software platforms, such as Tree and Playground tags for unique identification of objects and rugged mobile devices for use in the field.

## Product portfolio: the main products

R3GIS holds to a common vision across its entire product portfolio of improving efficiency and reducing costs in the management of assets. All R3GIS platforms are built on a single, common technological base and include similar functionalities, specifically adapted to the context in which the applications are used:

- Mobile and web technology based on Open-Source components.
- Geographical information integrated in all workflows: each object, work, inspection or issue has a position and an extent, which are used to improve the user experience, the traceability, and the quality of data acquisition.
- Multi-user capability with different roles based on competencies.
- A Software as a Service business model, with the option of installation on-premises.
- Multilingual UX (Italian, German, English, Polish, French, Finnish, Hungarian, Latvian, Lithuanian, Ukrainian) with the possibility to easily add new languages.

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# GREENSPACES

The GreenSpaces management platform developed by R3GIS is the flagship product of the company. It's tailored to the management of urban green areas and allows clients to more efficiently manage those, with heightened transparency and greatly improved coordination among stakeholders. The software is currently in use by more than 200 customers in Italy, Austria, Germany, Switzerland, Poland, Slovenia, Finland, and Hungary. GreenSpaces has already been translated into 8 languages and is being continuously improved with new features, developed within several R&D projects. Further detailed information will be provided in the following sections.

# WORKSPACES

Workspaces is a Web-GIS framework and Android app to manage all information, documentation and maintenance workflows related to assets: buildings, infrastructure, or technological networks. It is the perfect tool for the programming, planning, and tracking of maintenance activities performed on those assets. WorkSpaces' main advantage is its ease of adaptability to the characteristics and needs defined by the customer. This is provided through a configuration toolbox, without requiring any modification of the software code. Its high adaptability and GIS integration sets WorkSpaces apart among other established facility management systems.

# ROADSPACES

RoadSpaces allows clients to create and manage a digital cadastre of traffic signs, road markings and road infrastructure in general, along roads. RoadSpaces helps authorities in charge of roads and their suppliers to comply with the requirements of the Italian Highway Code. The multi-user platform allows for the management of all information related to road assets including the position and extension on the ground, regular inspections, issues, and maintenance activities in a highly configurable workflow and with a Web-GIS and a mobile interface. RoadSpaces is a custom configuration of WorkSpaces and shares the same code.

## GreenSpaces and additional modules

What is the exact extent of my city's green areas? What are the conditions of its urban parks and playgrounds? What is the health status of trees and when is the next assessment planned? How much do we spend on lawn mowing? How long does it normally take to repair a playground? Up-to-date information and correct documentation improve safety and reduce management costs of green areas, allowing for more precise planning and monitoring.

The GreenSpaces web platform provides all operators with access to a single, centralized application. The software is intuitive and allows users to record all assets of green areas and their attributes - trees, playgrounds, lawns, flower beds, hard assets, etc. The user can update all information from the office or directly in the field using a tablet, computer, or smartphone.

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All stakeholders access one single web application, but with different access profiles according to the user's role.
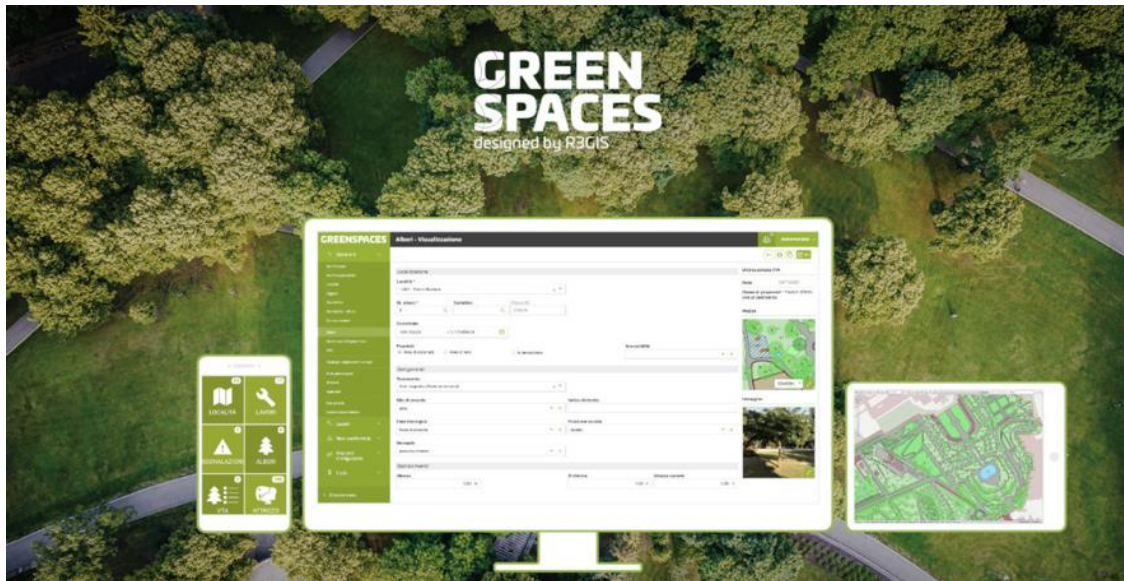


The software is currently offered as Software as a Service (SaaS), with four main versions: GreenSpaces Trees, which manages all information related to trees; GreenSpaces Play, which allows the users to manage all information related to playgrounds; GreenSpaces Standard, which integrates management of all assets of green areas, including urban forest, urban furniture, playgrounds and sports grounds, etc. Finally, GreenSpaces Enterprise provides multiple domains for different clients or cities.

GreenSpaces is the most complete and widespread green management platform on the market in Italy. It integrates the most modern web and mobile technologies and has also been used for 20 years by over 200 cities and company clients across Europe. Additional modules have been developed within the framework of EU funded projects to support municipalities in the important task of adapting cities to the effects of climate change. In this way, GreenSpaces plays a crucial role in helping citizens to experience a more liveable urban environment and expect a significant positive impact on their overall quality of life.

The implementation of European projects has contributed to five new innovative management tools on the GreenSpaces platform. These are aimed at:
- optimizing water consumption,
- reducing the carbon footprint of maintenance activities through more efficient job planning,
- quantifying ecosystem services provided by green areas,
- monitoring the health condition of trees,
- increasing citizen participation in urban green management.

*The mobile app allows maintenance operators to get job orders in the field and directly update the database, also offline.*

## ENVIRONMENT Modules

The ENVIRONMENT Modules help cities, companies and professionals to calculate the environmental benefits of green areas and consider them in their care and maintenance activities:

- **METEO** Module: Maintenance activities in the field are highly dependent on weather conditions. This additional module for GreenSpaces allows clients to plan activities more efficiently, based on a weather dashboard that shows actual data and future forecasts on precipitation, temperature, humidity, wind, evapotranspiration and solar radiation.
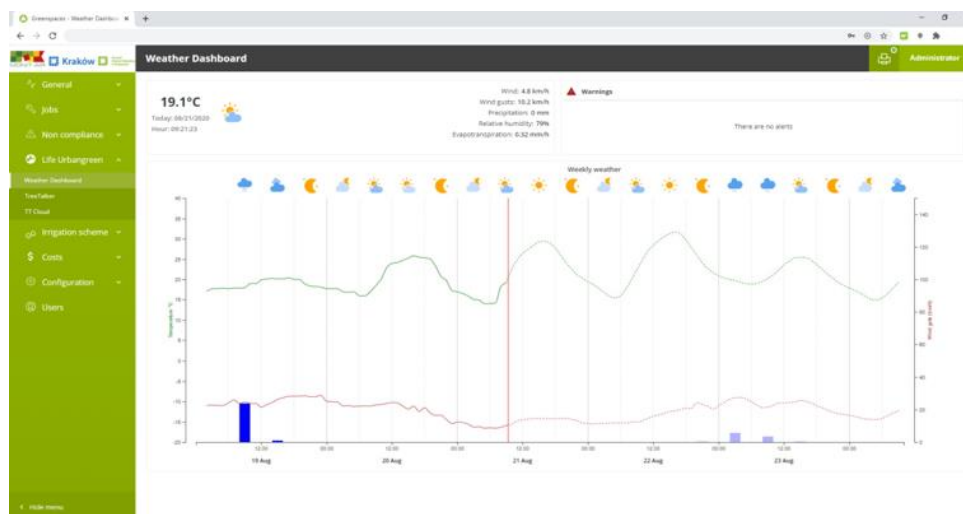


*The weather dashboard. The vertical line shows the current moment. Data to the right are forecasts.*

- **BENEFITS** Module: Daily values of ecosystem services are calculated for more than 150 different species and varieties of trees and shrubs: $CO_2$ adsorbed, sequestred and stocked, $PM_{2,5}$ and $PM_{10}$ deposited, water transpired as well as energy saved for air cooling.



*List of trees with ecosystem services calculated on a daily and yearly basis.*

- **WATER** Module: The water needs of trees are calculated and irrigation activities can be scheduled accordingly. The tool takes into consideration the parameters of the plant (species, age, growth site), the weather conditions (past, present and future forecasts) and any previous irrigation.
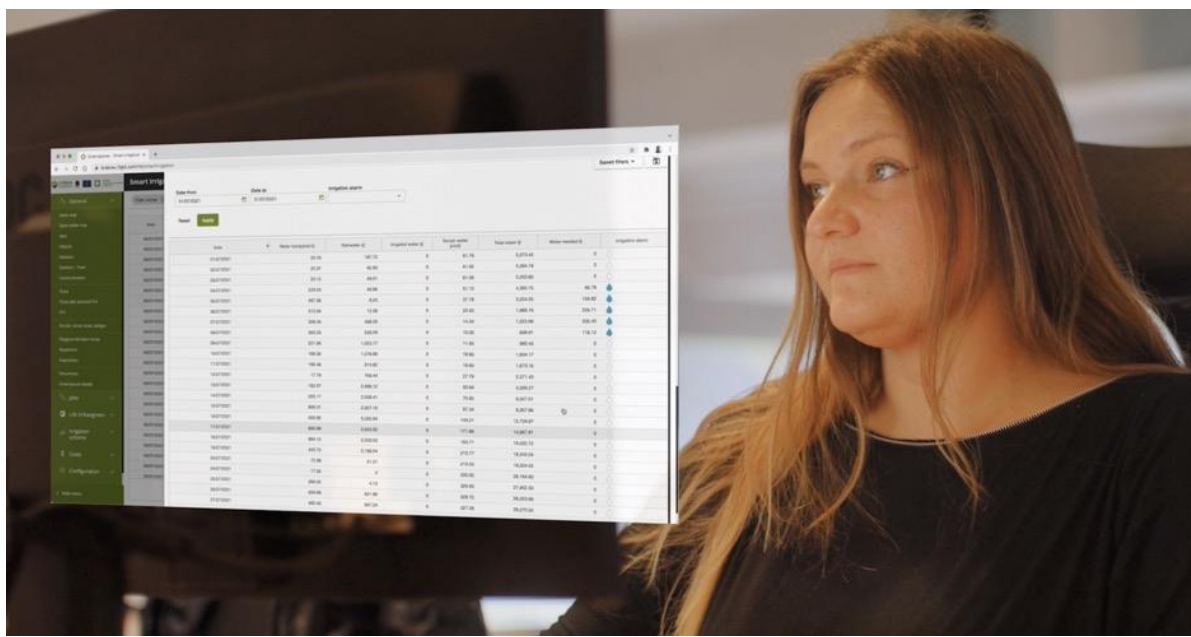


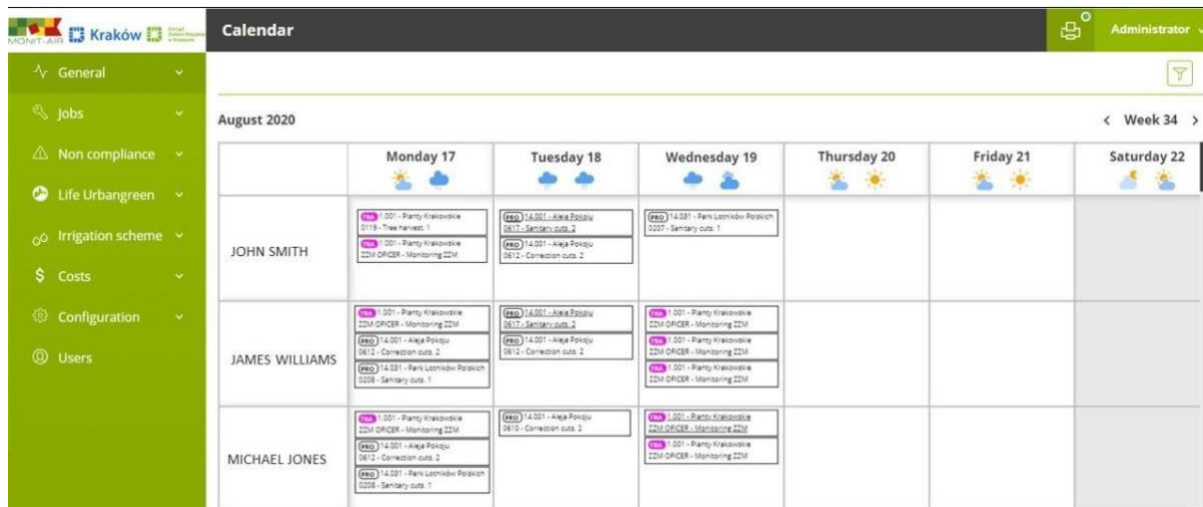*The WATER module shows which trees need watering*

## WORKS Module

This module provides the possibility of scheduling jobs for a specific date and time and assigning them to specific users or teams.

The WORKS Module allows:

- Easy scheduling of maintenance and care activities;
- Smart work scheduling (considering distance between jobs and weather conditions);
- Team management and monitoring;
- Flexibility in managing contractors;
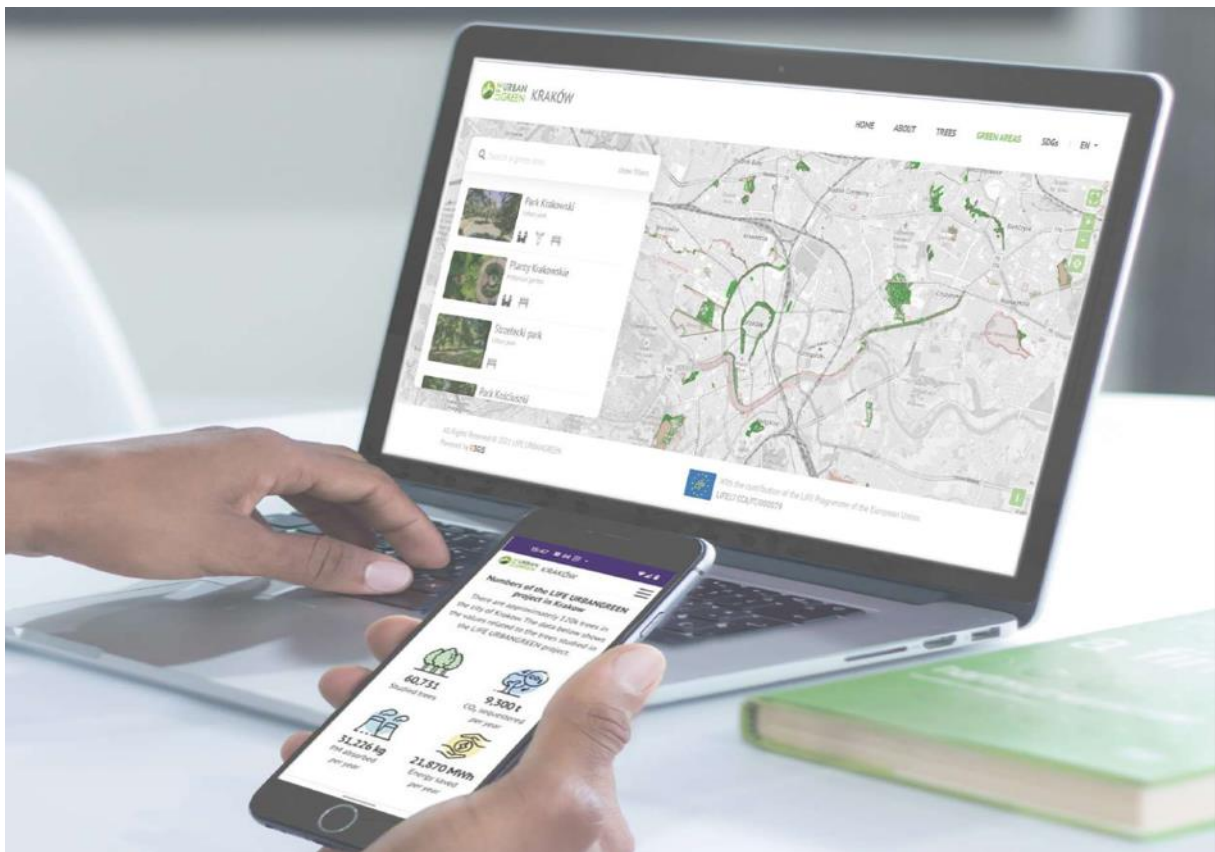- Recording of resources used for each job and cost control.



*Calendar view of scheduled jobs with weather forecasts*

## GREEN CITY Module

The GREEN CITY is an additional module of GreenSpaces designed to improve citizen participation.

Urban strategies for adapting to the increasing number of heat waves, droughts, heavy rainfall and high wind cannot succeed without citizen participation. A public portal highlights the main benefits of urban trees, for example: the amount of particulate matter that trees in a park remove, yearly, from the atmosphere. This and other information can also be displayed for individual trees. Descriptions of the most common tree species and their environmental benefits complete the picture. Citizens are informed through a public portal about the green areas of the city, including detailed information about trees, assets and playgrounds. It is also possible to display the tree inventory of an urban green area on an interactive map.

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*Public portal of Krakow with green area benefits.*

## Research & Development

R3GIS has a long tradition of research and innovation. An average of 30% of its activities are invested in the development of innovative features and technologies, often within the framework of EU-funded projects. Over the last four years R3GIS has been the lead partner in several projects.

The research priorities are:
- Improve the calculation of ecosystem services of urban greenery
- Integrate in GreenSpaces 3D digital twins of urban trees
- Integrate in GreenSpaces the use of sensors
- Improve the architecture of GreenSpaces (scalability, performance)
- Introduce AI tools
- Improve data sharing and citizen engagement (citizen science)

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*The NOI TechPark in Bolzano, where the HQ of R3GIS are located*

# Partners

The Company office is located in the NOI TechPark, the innovation hub of South Tirol (https://noi.bz.it/en). In this facility, R3GIS connects with more than 1,100 entrepreneurs, researchers, start-ups and students, and is in close cooperation with several of them. Additionally, the Company collaborates with commercial partners, research institutions and universities both in Italy and abroad, to foster research activities for the development of its products.

## Company Links
Website: https://www.r3gis.com/
Success stories: https://www.r3gis.com/greenspaces#section_greenspaces_success_story
Linkedin: https://www.linkedin.com/company/r3gis/
Facebook: https://www.facebook.com/r3gis
Website: https://www.r3gis.com

## Innovation Projects Links
LIFE URBANGREEN: www.lifeurbangreen.eu
Verdevale: www.verdevale.eu
IDEE https://ideenergy.eu/
GEOBIMM https://www.linkedin.com/showcase/geobimm/

## GreenSpaces Public Portals
Krakow (PL): https://krakow.lifeurbangreen.eu/
Rimini (IT): https://rimini.lifeurbangreen.eu/
Bolzano (IT): https://bolzano.verdevale.eu/
Lugano (CH): https://lugano.verdevale.eu/
Mantova (IT): https://mantovacittaverde.it/

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