

Green Roof Systems

Technical Architect Program

Official Practice Scenario



Project Overview

Green Roof Systems (GRS) is a global company that designs and plans green roofs for customers in large metropolitan areas. GRS customers are either individuals who own a single building or large companies who own many buildings that represent multiple sites. GRS has completed over 200,000 green roof projects across Europe for 150,000 customers and expect their business to double with a planned expansion into Canada and the United States next year.

The primary marketing channels for GRS are industry conferences and trade shows. At these events, marketers present whitepapers on green roof technology and gather details about prospective customers and potential projects. The GRS sales team sells design and consulting services for the green roof projects. GRS design consultants then meet with customers to plan, design, and apply for installation permits for the green roof. Installers purchase the plants and complete the installation of the green roof. GRS customers can submit issues related to their green roof after installation.

GRS works with a network of 5,000 installation companies who are responsible for purchasing and installing plants for the green roofs.

GRS has 10 regional offices across Europe, each representing a different country.

Each regional office has its own basic CRM solution with customized business processes and localized content. GRS would like to replace all these CRM solutions with Salesforce.

There are four types of GRS employees who will be using the system:

1. **Marketers** who attend conferences and trade shows to present whitepapers on green roof technology. A marketer may be assigned to more than one region. Marketers meet with prospective customers and gather information about potential green roof projects.
2. **Sales Representatives** who sell green roof design projects. Sales representatives are assigned to a single country-specific region. GRS also has a **Strategic Sales Team** that includes sales representatives who work across regions for larger strategic customers.
3. **Design Consultants** who collaborate with customers to plan and design green roofs. They also submit applications for installation permits from government organizations.
 - 3.1. As part of this project, GRS would like to create a recognition program for design consultants based on their project experience (number of successful projects), training courses completed, and expertise (permaculture, succulents, fruit, vegetables).
4. **GRS Managers** who oversee teams of sales representatives and design consultants. Each region may have up to five managers.

GRS also works with the following users at external companies:

1. **Installers** who purchase plants and install green roofs. The installers work across regions.
2. **Installation Managers** who manage multiple installers at an installation company.

GRS would like their new application to integrate with the following systems:

1. **Billing System:** GRS uses an existing Oracle database-backed application to manage customer invoices and billing data and is highly dependent on internal accounting and fulfillment processes.

This system:

- 1.1. Is used by installers to create customer invoices
 - 1.2. Tracks paid and unpaid customer invoices
 - 1.3. Receives invoice payments from customers
 - 1.4. Is currently the system of record for all customer demographic data.
GRS will consider changing this if the design warrants it.
 - 1.5. Has an http-based API available
2. **Learning Management System:** Design consultants and installers use this system to access educational materials and training courses.
 - 2.1. GRS would like to track and report on users who complete training courses in real time.
3. **Specialty Plants Application:** This in-house application is used by design consultants and allows them to search several 3rd party databases for availability and inventory of specialty plants. This application supports SAML, and GRS would like to make sure that all users accessing the application are active users of Salesforce.
4. GRS would like to implement **single sign-on (SSO)** for all employees and installers for all systems and applications. The single sign-on solution should:
 - 4.1. Leverage the **LDAP-based identity provider** that GRS currently uses.
 - 4.2. Allow GRS employees who are logged into the corporate network to click a link from the company intranet page to directly access the billing system.
 - 4.3. Provide installers access to the new application and other systems.

Business Process Requirements

GRS would like to include the following processes and capabilities:

Project Discovery and Sales Process

Project discovery begins when marketers attend trade shows and conferences and is followed by the sales process where sales representatives sell design and consulting services.

1. GRS marketers attend conferences and tradeshow to present whitepapers and meet with prospective customers about potential green roof projects. They gather details such as site location(s), installation budget, square footage, and project start date.
2. Marketers review potential green roof projects to confirm that the site location(s) are suitable, and that the installation budget is sufficient, mark the project as verified, and pass the project to the sales team.
 - 2.1. Potential projects with a start date within 3 months or with a budget larger should be notified
 - 2.2. Potential projects with a budget larger than €500k should be flagged as STRATEGIC priority and the Strategic Sales Team should be notified.
 - 2.3. If sales representatives do not follow up with customers for HIGH or STRATEGIC priority projects within 5 business days, their manager should be notified.
 - 2.4. Current customers who are interested in starting a new green roof project should be assigned to the same sales representative who worked with them previously.
 - 2.4.1. The sales rep should be notified to contact the customer.
3. Sales representatives begin the sales process by selecting from a list of verified potential projects in their region.
4. Sales representatives call the customer to confirm project details and schedule an onsite visit.
 - 4.1. When sales representatives arrive at the customer site, they should check-in to the site using their mobile device.
 - 4.2. During the site visit, sales representatives use their mobile device to gather additional project details, save the site GPS coordinates, take photos and video, and upload them to the new application.

5. Based on the information gathered during the site visit, sales representatives generate an estimate for the green roof design and send a copy to the customer. When the customer approves the estimate, the sale is considered closed, and the design process can begin.
 - 5.1. At this stage, GRS would like to automatically create a green roof project record and assign it to a design consultant in the region with the appropriate skills and availability.
 - 5.2. The customer should receive an email confirming assignment of their design consultant.

Project Design Process

During the project design process, the design consultant works with the customer to design the green roof and apply for installation permits.

1. Design consultants collaborate with customers on plant choices and design ideas. They also share updated versions of the installation plans and design schematics with the customer until the final design is approved.
 - 1.1. The installation plans and design schematic files range in size from 30-60 MB and are shared with both customers and installers.
2. Design consultants use the specialty plant application to search for specific types of specialty plants and reserve them for the green roof projects.
 - 2.1. Plants that are reserved for other projects should not appear in the search results.
 - 2.2. Each project may reserve up to 50 different types of specialty plants. Each plant reservation includes the plant location, quantity, and recommended spacing.
 - 2.3. If the project is cancelled, then the reserved plants should appear as available in the specialty plants application.
3. When the project is ready for approval, the design consultant sends the installation schedule, final installation budget, installation plans, and design schematics to the customer.
 - 3.1. The customer approves or rejects the project and includes comments.

4. When the design is approved, design consultants submit the installation permit application to the government agency in the country where the green roof is being installed. GRS would like to leverage the web services that each government agency provides.
 - 4.1. Government agencies typically respond to the permit application within a week.
 - 4.2. Customers should receive an email with the response to the permit application along with the tracking number issued by the government agency.
5. If the installation permit is not granted, then the project should be set to a status of ON HOLD.
 - 5.1. Design consultants meet with customers to decide next steps and may update the green roof design and reapply for the installation permit, making sure to include the tracking number issued by the government agency.
6. When the installation permit is granted, the design consultant searches for installers who have completed training courses that match the project requirements and selects an installer for the project.

Project Installation Process

The installation process begins when an installer is assigned to the project and ends when the customer completes the final inspection.

1. The assigned installer visits the site with the customer and reviews the installation plans and design schematics on a tablet device that may not always be connected to the Internet.
2. The installer purchases standard and specialty plants prior to installation and records the species of plant, cost per plant, and quantity of plants against the project.
 - 2.1. All plants are guaranteed for 60 days and must be tracked against the project in the new system. During a typical month, installers complete 400 green roof installations, and each installation can include up to 5,000 species.

3. When all plants are installed, the customer completes final inspection and signs off on the project.
 - 3.1. At this stage, an invoice should be sent to the customer.
 - 3.2. GRS would like to provide customers with access to an online portal to pay invoices online and view history of paid invoices.
 - 3.3. Customers should also enter issues with their green roof installation using the portal.

Data Model and Migration Requirements

1. GRS would like to migrate all data from the 10 homegrown CRM systems to the new application. 2. GRS would like a recommendation for system of record for customer demographic data.
2. For projects that include multiple sites, there may be different installers assigned to different sites, so one project should be created per site.

Accessibility/Visibility Requirements

1. Sales representatives and design consultants should only see prospective green roof projects and customer records for their region.
2. The Strategic Sales Team should see all prospective green roof projects and customer records for their region as well as all potential projects marked as STRATEGIC priority.
3. Only design consultants can see the results of the installation permit application and only on projects they are assigned to.
4. GRS Managers should have access to all customers and green roof projects in their region.
5. Installers should only see customer and project details and design documents for projects that they are assigned to.
6. Installation Managers should see all customer and project details and design documents for projects that are assigned to installers that they manage.

7. All users should be able to select their language and access translated data and email communication.
8. Customers require access to an online portal during and following the green roof installation project.
 - 8.1. Customers can only view their own project details and associated documents.
 - 8.2. Customers should be able to use their Facebook credentials to log in to the portal.

Reporting Requirements

1. Design consultants would like to see an ad-hoc report that shows the installers in their region who have completed certain training courses.
2. GRS Managers would like to see a monthly roll-up of revenue for their region and status of associated green roof projects.
3. Installers would like to run a report that includes the specialty plants that have been reserved for the installation they are assigned to.