

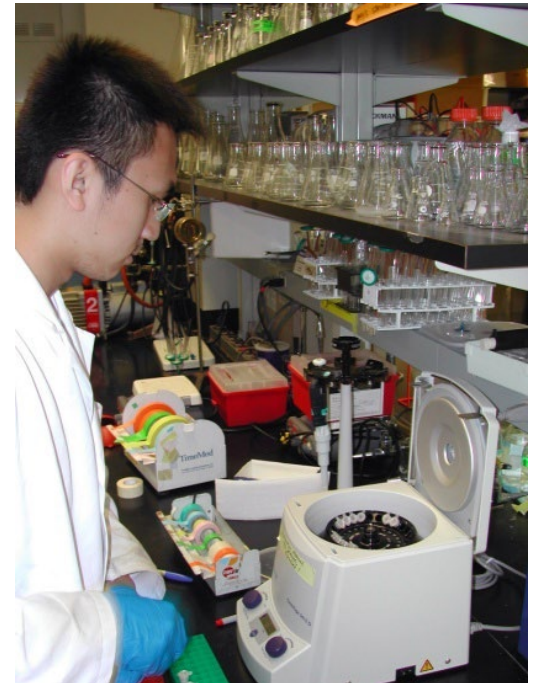
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www.water.rutgers.edu



Rutgers Cooperative Extension

Rutgers Cooperative Extension (RCE) helps the diverse population of New Jersey adapt to a rapidly changing society and improves their lives through an educational process that uses science-based knowledge.





Water Resources Program



Our mission is to identify and address water resources issues by engaging and empowering communities to employ practical science-based solutions to help create a more equitable and sustainable New Jersey.

Sustainable Landscaping ...

... focuses on creating and maintaining outdoor spaces in a way that minimizes environmental impact and maximizes efficiency. It prioritizes resource conservation, biodiversity, and long-term ecological health, often using principles like xeriscaping, native plant selection, and natural pest control.



Key Principles

- **Water Conservation**
- **Reduced Chemical Use**
- **Native Plant Selection**
- **Biodiversity**
- **Soil Health**
- **Waste Reduction**



Benefits of Sustainable Landscaping

- **Environmental Protection:** Reduces pollution, conserves water and energy, and supports biodiversity.
- **Cost Savings:** Lower water bills, reduced fertilizer and pesticide costs, and potentially reduced maintenance expenses.
- **Enhanced Aesthetics:** Sustainable landscapes can be visually appealing and offer unique, naturalistic designs.
- **Improved Property Values:** Many studies show that sustainable landscapes can increase property values.
- **Health Benefits:** Sustainable landscapes can provide a more natural and healthy outdoor environment, potentially reducing exposure to harmful chemicals and allergens.

Water Conservation

Water conservation is a critical component of sustainable landscaping, ensuring efficient use of water resources and reducing the environmental impact of landscaping practices. This involves implementing various strategies, including smart irrigation, proper soil management, and using water-wise plants, to create beautiful and sustainable landscapes without excessive water consumption.



Smart Irrigation Systems

Key Features and Benefits

- **Precision Watering:** Smart systems use sensors to monitor soil moisture, weather forecasts, and plant needs, allowing for precise watering schedules that deliver water only when and where it's needed.
- **Water Conservation:** By optimizing watering schedules, smart systems significantly reduce water waste, leading to lower water bills and a healthier environment.
- **Reduced Maintenance:** Automation and real-time data provide greater control and visibility into irrigation systems, reducing the need for manual intervention and potential maintenance issues.
- **Healthier Plants:** Delivering the right amount of water at the right time promotes healthy plant growth and reduces stress, leading to a more vibrant and beautiful landscape.
- **Adaptability to Environmental Changes:** Smart systems can adjust to changing weather conditions, such as unexpected rain, minimizing water waste and maximizing efficiency.
- **Economic and Environmental Benefits:** By reducing water waste and maintenance costs, smart irrigation systems offer both economic and environmental benefits for homeowners and businesses.

Components of Smart Irrigation Systems

- **Soil Moisture Sensors:** Monitor soil moisture levels, providing data on when and how much water is needed.
- **Weather Stations:** Collect real-time weather data, including temperature, precipitation, and wind speed, to optimize watering schedules.
- **Smart Irrigation Controllers:** Process data from sensors and weather stations to automate the irrigation process and adjust watering schedules. These controllers use weather data and other environmental factors to adjust watering schedules, preventing overwatering and under-watering.
- **Irrigation Zones:** Divide the landscape into zones with different plant needs, allowing for customized watering schedules.
- **Drip Irrigation or Sprinkler Systems:** Deliver water to plants, with drip irrigation being a highly efficient and sustainable method. This method delivers water directly to the plant roots, minimizing water loss due to evaporation and runoff.



Rainwater Harvesting





Reduce Chemical Use



- Embracing **Native Plants** reduces the need for chemicals while enhancing ecosystem health.
- Utilizing **Compost** provides essential nutrients to plants in a natural, slow-release manner, reducing the need for synthetic fertilizers
- Utilizing **Mulch** helps retain moisture, suppress weeds, and regulate soil temperature, further reducing the need for chemicals.
- Implementing **Integrated Pest Management** (IPM) strategies focus on specific pests without harming beneficial insects or wildlife, minimizing the use of broad-spectrum pesticides. IPM incorporates natural pest control methods like introducing beneficial insects or using traps to manage pests.
- **Avoiding Chemical Pesticides** which can be harmful to human health and the environment, so avoiding them is crucial for sustainable landscaping. Many natural alternatives exist for pest control, including insecticidal soap, neem oil, and beneficial nematodes.

Native Plant Selection

- **Environmental Benefits:** Native plants help reduce water consumption, improve soil health, and provide habitat for beneficial insects, birds, and other wildlife.
- **Low Maintenance:** Once established, native plants require less fertilizer, pesticides, and mowing, saving time and resources.
- **Ecological Considerations:** When selecting native plants, consider their role in the ecosystem, such as providing food and shelter for pollinators and wildlife, and their ability to support healthy soil structure.
- **Aesthetic Value:** Native plants can add beauty and interest to a landscape with a variety of colors, textures, and bloom times.
- **Specific Examples:** Purple coneflowers, serviceberry trees, flowering dogwoods, and native oaks and willows are examples of native plants that support wildlife.
- **Design Tips:** Consider including a mix of plant types (trees, shrubs, perennials, grasses) to create a diverse and resilient landscape.

Soil Health

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Why Healthy Soil is Important

- **Foundation of Plant Life:** Healthy soil provides the essential nutrients and water that plants need to thrive.
- **Water Infiltration and Retention:** Healthy soil structure improves water infiltration, reducing runoff and promoting efficient water use.
- **Erosion Control:** Good soil health helps prevent erosion, protecting landscapes from damage.
- **Carbon Storage:** Healthy soils store large amounts of carbon, contributing to climate change mitigation.
- **Ecosystem Support:** Healthy soil supports a diverse range of microorganisms, insects, and other organisms that contribute to a healthy ecosystem.

Sustainable Landscaping Practices for Soil Health

- **Minimizing Soil Disturbance:** Avoid practices like excessive tilling that disrupt soil structure and damage beneficial microbes.
- **Maximizing Soil Cover:** Utilize cover crops, mulch, or other materials to protect soil from erosion and maintain moisture.
- **Diversifying Plantings:** Plant a variety of native and non-native species to create a resilient landscape that supports diverse soil organisms.
- **Adding Organic Matter:** Composting and using other organic materials can improve soil fertility, structure, and water retention.
- **Reducing Chemical Use:** Minimize the use of synthetic fertilizers and pesticides, which can negatively impact soil health.
- **Water Wisely:** Implement efficient irrigation techniques to avoid overwatering, which can lead to compacted soil and nutrient runoff.

What's Going On Here?...

A rain garden is being built!

Rutgers Cooperative Extension and the City of Rahway are helping Rahway homeowners protect the Robinson's Branch stream (part of the Rahway River watershed) by installing rain gardens. When it rains, roof runoff from the house will flow into the rain garden instead of going to the stormdrain. The rain garden helps reduce rain water runoff and pollution in our watershed. Rain gardens also provide habitat for birds and butterflies.

RUTGERS
New Jersey Agricultural
Experimental Station



For more information call Rutgers Cooperative Extension of Union County at (732) 398-5274, or email bakacs@njaes.rutgers.edu. This project has been funded in part by the New Jersey Agricultural Experimental Station and by a grant from the New Jersey Department of Environmental Protection.



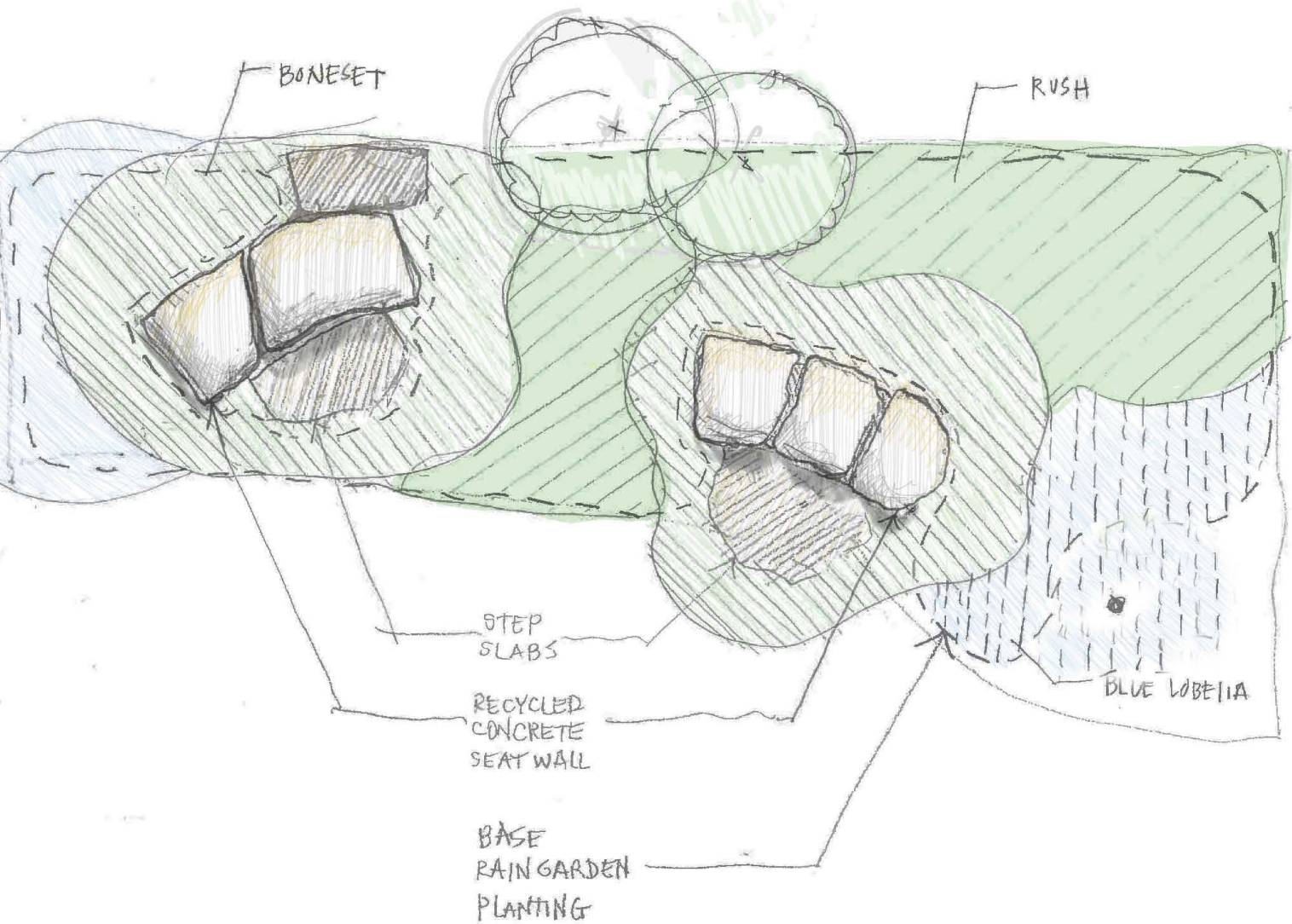
Scan code or visit
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for more information







Rutgers Rahway Rain Gardens Project: Final Design: The Provda Home



SCALE: 1" = 2'

1244 Briarcliff







Rutgers Rahway Rain Gardens Project:
Final Design: The Provda Home

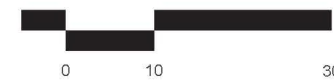


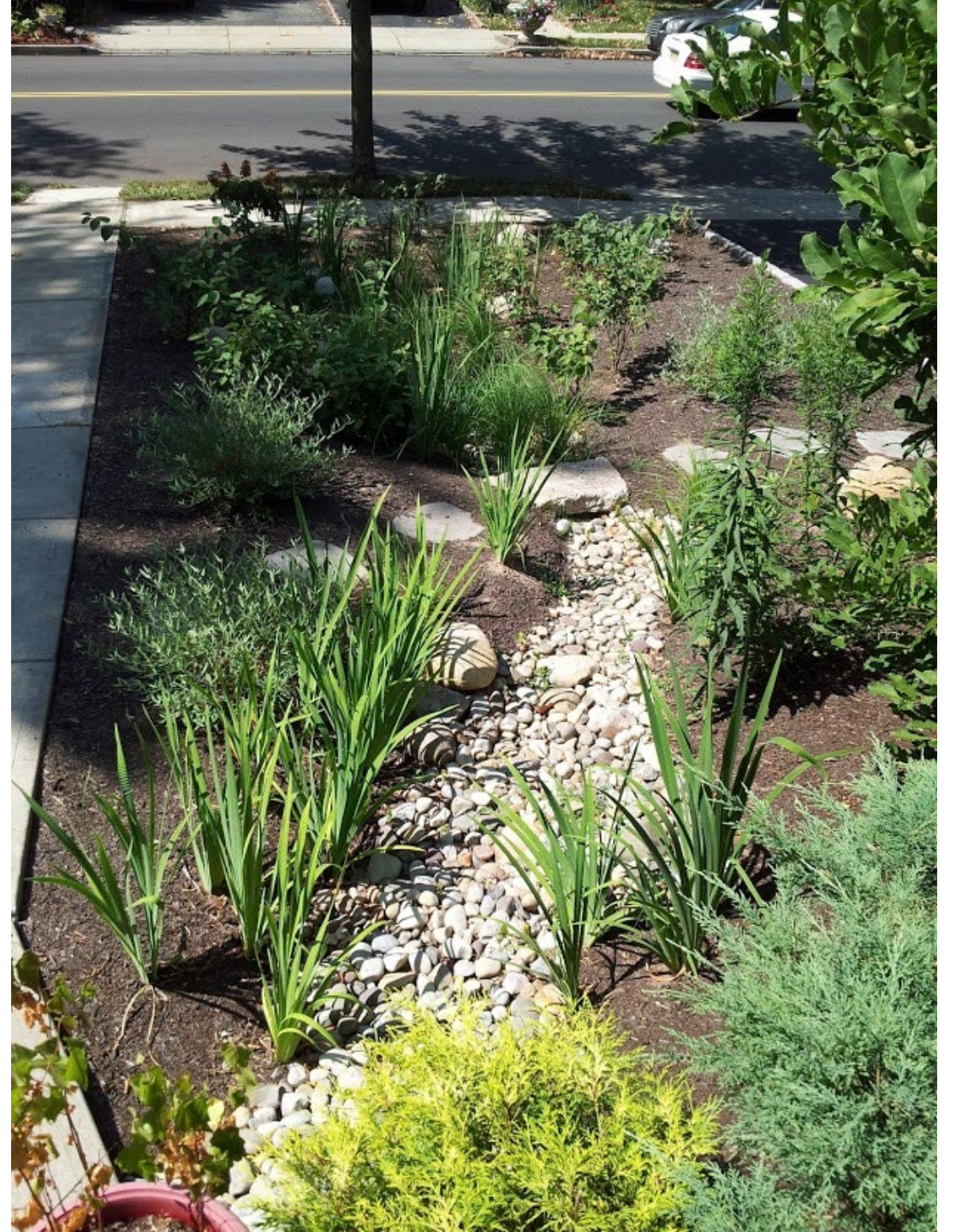
1244 Briarcliff





1244 Briarcliff













Encourage the homeowner to “own the design” by interacting with it over time with modifications, additions and subtractions



Sustainable Landscaping

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