



Team 3

Green StormWater

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Description of Users and Environment



Environment: Mobile first system that aims to track, inform and educate users about Green Stormwater Infrastructures.

Primary Users

- High School Students
 - *Description:*
 - Teenagers with some experience with technology
 - *Main Activities:*
 - Upload information and photos of green areas
 - View other green areas on the map
 - Learn about GSI's
- High School Teachers
 - *Description:*
 - Teachers who use the app with their students
 - *Main Activities:*
 - Teach students how to use the app
 - Educate students about GSI's
 - Create accounts for students

Secondary Users

- Jessica Alger
 - *Description:*
 - Adult with moderate technology experience
 - *Main Activities:*
 - Add and remove content
 - Act as a moderator of GSI submissions
- General Public
 - *Description:*
 - Individuals of any age and technology experience
 - *Main Activities:*
 - View GSI's on map
 - Learn more about GSI's



Instructional content

- The Home page
 - Contains information about what green spaces are and why they are important
- About Page
 - Informs user about the project and user base, as well as frequently asked questions
- The Contact page
 - Contains instructions for contacting the scientist about this project
- The Add GSI page
 - Contains instructions on how to submit a new location
- The Map page
 - Contains information on how to use the map



Demo UI





Home



Green space in an urban area

What is Green Stormwater Infrastructure

Urban Green Stormwater Infrastructure (GSI) is an alternative to grey infrastructure (storm pipes, gutters, etc.) that incorporates engineered systems and the natural environment, with the goal of reducing stormwater runoff by increasing infiltration and evapotranspiration. GSI can be categorized as natural, enhanced, and engineered. Natural GSI includes wetlands, forests, grasslands, parks and gardens. Enhanced GSI includes rain gardens, bioswales, green roofs, and urban trees. Engineered GSI includes rain barrels, permeable pavement, cisterns and infiltration trenches. Natural and Enhanced GSI uses vegetation and soil to help manage stormwater runoff by allowing stormwater to infiltrate into the ground and be used and evapotranspired by vegetation. Engineered GSI can be used to collect and reuse stormwater or to help to infiltrate stormwater back into the ground..

Natural landscapes like forests, grasslands, and everything in between play an incredibly important part in shaping our landscapes. As our landscapes change over time with new expansion, natural factors need to be considered for infrastructure to function properly in varying conditions. As our landscapes change over with new expansion, natural factors need to be considered for infrastructures functioning properly in varying conditions.

Why are green spaces important?

Intense rainfall events are increasing in frequency and severity in many urbanized communities throughout the United States. According to future climate prediction models, extreme rainfall and flood events are expected to increase. Green spaces in urban environments greatly reduce the amount of flooding that takes place on the streets, highways, and sidewalks that we travel on. Vegetation and soil in urban

Green Space Types and Categories

Natural Assets Wetlands Forests Parks Meadows Lawns and Gardens Soil Enhanced Assets Rain Gardens Green roofs and walls Bioswales Urban Trees Naturalized stormwater ponds Engineered Assets Permeable pavement Rain Barrels Cisterns



Green space in an urban area

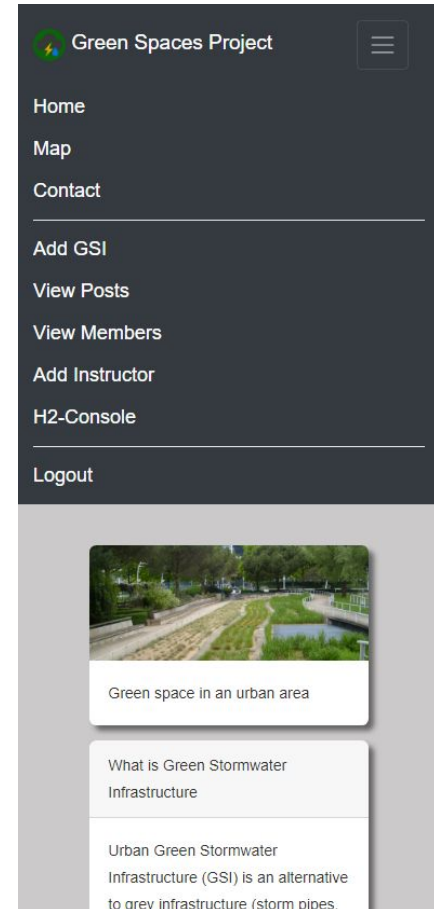
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Mobile Hamburger Menu

Entries vary depending on the Logged in
User's Role (Currently Admin)





Map*

Green Spaces Project

Login Home Map Add GSI Contact View Posts Add Instructor Add Student View Members

This screenshot shows a desktop web browser view of the 'Green Spaces Project' map. The map features a large blue circle centered on a specific location, with a white callout box containing the text 'You are within 1342 meters from this point'. The map includes various geographical features like roads (US 41, M 203, M 26), water bodies (Portage Canal, Lake Erie), and green spaces. A navigation bar at the top contains links for 'Login', 'Home', 'Map', 'Add GSI', 'Contact', 'View Posts', 'Add Instructor', 'Add Student', and 'View Members'. The bottom of the page has a copyright notice: 'Copyright © 2024 My Gralls App. All rights reserved.'

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Green Spaces Project

This screenshot shows a mobile application view of the 'Green Spaces Project' map. It is a zoomed-in view of the same location shown in the desktop version. A blue circle highlights the area, and a callout box indicates 'You are within 1342 meters from this point'. The map shows street names like Royce Road, Ripley, and East Sharon Avenue. A navigation bar at the top includes a hamburger menu icon. The bottom of the page has a copyright notice: 'Copyright © 2024 My Gralls App. All rights reserved.'

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Add GSI

Green Spaces Project

Login Home Map Add GSI Contact View Posts Add Instructor Add Student View Members

Add New Green Space

Create a new Green Space
Help tool tip here.

Latitude

Longitude

Size

[Tool for estimating the area on a map](#)

Description

Image File No file selected.

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Green Spaces Project

Add New Green Space

Create a new Green Space
Help tool tip here.

Latitude

Longitude

Size

[Tool for estimating the area on a map](#)

Description

Image File No file selected.



View Posts*

Green Spaces Project							
Home Map Contact Add GSI View Posts View Members Add Instructor H2-Console Logout							
UID	Image File	Latitude	Longitude	Description	Size	Creation Date	Updated Date
1	/path	5	10	Description	2	11/11/1111	22/22/2222
2	/path	51	101	Description 2	22	11/11/1111	22/22/2222



Add Instructor*

Green Spaces Project

Home Map Contact Add GSI View Posts View Members Add Instructor H2-Console Logout

Add an Instructor Account

Username (email):

School:

Submit




Add Student*

Green Spaces Project

[Home](#) [Map](#) [Contact](#) [Add GSI](#) [View Posts](#) [View Members](#) [Add Instructor](#) [H2-Console](#) [Logout](#)

Add an Student Account

Username (email):



Submit



View Members*

Green Spaces Project

Home Map Contact Add GSI View Posts View Members Add Instructor H2-Console Logout

Users

Jessica Alger	jlalger@mtu.edu	Moderator	
Kevin Bak	kabak@mischools.org	Teacher	Michigan School Remove
Tom Lake	tlake@mischools.org	Student	Michigan School Remove
Jerry Lake	jlake@mischools.org	Student	Michigan School Remove
Terry Lake	tlake2@mischools.org	Student	Michigan School Remove
Patrick Lake	plake@mischools.org	Student	Michigan School Remove



Contact

Green Spaces Project

Home Map Contact Login

Contact Us!

If you have questions or suggestions, or need to point out a bug or an error, please send us a message!

Jessica Alger

Email: jalger@mtu.edu

Green Spaces Project

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Login*

[Users](#) [Roles](#) [Registration Code](#) [Security Info](#)

Spring Security Management Console

[Log in](#)

Member sign in

Username:

Password:

Remember me | [Forgot password?](#)

[Register as new User](#)

[Log in](#)



Usability Concerns

- Some pages might not display well on certain mobile devices
- Other pages may not display as well on larger screens
- Spring Security Login on Mobile



Completed Components

- Home Page
- Contact Pages
- Login Page



Future planned components

- Login Page
 - Improve UX and overall design (hopefully)
 - Add proper account functionality
- About
 - Currently complete but there are bugs with it displaying
- Map
 - Add Markers
- View Members
- Add Student
- Add Instructor
- View Posts
 - Mobile Friendly