THE ROLE OF TECHNOLOGY IN FACILITATING COMMUNITY ACTION: PROMOTING SUSTAINABLE DEVELOPMENT
Supplemental Materials

Team Members

Caleb Wagner

Evan Plevinsky

Matthew Hagan

Advisors

Professor Katherine Foo

Professor Holly Ault

October 13th, 2018 (A Term)   Sponsor:

An Interactive Qualifying Project submitted to the faculty of Worcester Polytechnic Institute in partial fulfillment of the requirements for the Degree of Bachelor of Science.

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AUTHORSHIP

For each of the various sections, our project has had multiple revisions, most of which have lead to a total rewrite. All team members have extensively edited and worked on the different versions of the different sections. The names presented in each section provided equal contribution and are listed in alphabetical order.

Abstract:
Draft 1: Evan
Draft 2: Caleb
Draft 3: Caleb, Evan

Introduction:
Draft 1: Caleb, Evan, Matt
Draft 2: Caleb, Evan
Draft 3: Evan, Matt
Draft 4: Caleb, Evan
Draft 5: Caleb, Evan, Matt
Draft 6: Caleb, Evan, Matt

Background:
Draft 1: Caleb, Evan, Matt
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Draft 3: Caleb, Matt
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Draft 5: Caleb

Methods:
Draft 1: Caleb, Evan, Matt
Draft 2: Evan, Matt
Draft 3: Evan, Matt
Draft 4: Evan, Matt
Draft 5: Caleb, Evan, Matt
Tools: Caleb, Evan, Matt

Results:
Draft 1: Matt
Draft 2: Caleb, Evan
Draft 3: Caleb, Evan
Draft 4: Caleb, Evan, Matt
Draft 5: Caleb, Evan, Matt

Recommendations & Conclusions:
Draft 1: Caleb, Matt
Draft 2: Caleb, Evan, Matt
Draft 3: Caleb, Evan, Matt
Draft 4: Caleb, Evan, Matt
Draft 5: Caleb, Evan, Matt

Sponsor Description:
Draft 1: Caleb

Website Documentation:
Draft 1: Evan, Matt

Recommended Features:
Draft 1: Caleb, Evan, Matt

WordPress Plugins:
Draft 1: Caleb, Matt

Search Engine Optimization:
Draft 1: Caleb

Slides:
Mid-Term: Caleb
Final-Presentation: Caleb

CONTRIBUTIONS

Caleb:

Caleb's primary role in writing the paper was writing the background and results sections himself while working with others on writing the abstract, introduction, and recommendations. Caleb performed most of the research for the project and wrote for the supplemental materials the search engine optimization section and sponsor description himself, a majority of the plugins list, and some of the recommended features. Caleb created all of the PowerPoint slides and graphics throughout the term while also creating the Publisher file. Furthermore, Caleb initially set up the entire first iteration of the website, added the website to the hosting platform, and then acted more in an advisory role for the second iteration, assisting his teammates in adding features and plugins. Caleb worked with the team to perform all but four of the interviews as well as he ran several of the team, advisor, and sponsor meetings. Finally, Caleb edited all of the documents in both the booklet and the supplemental materials.

Evan:

Evan's primary role with the paper was in writing the methodology and introduction, and significantly assisted with and edited the remainder of the sections. In the supplementary materials, Evan wrote the Overview, Constructing the Webpage, Navigation Menus, Eco Social Network, and Events Calendar portions of the website documentation, had an equal part in making the recommended features, added a few plugins to the list of WordPress plugins, heavily edited all supplemental materials, and compiled them into a single document. Outside of the paper, Evan took primary ownership in creating and editing most of the methodology instruments. He also contacted most of the interviewees either directly or by creating mass email chains and ran the email account created by Eco-Net. Additionally, Evan took primary initiative in interviewing individuals. In one case in particular, he researched and held in-person interviews with local businesses by himself. For the website, Evan focused on the creation of the calendar, searching functionality, business profiles, and mock data, while also assisting in the editing of user profiles and web page content.

Matt:

Matt's primary role with the project was compartmentalizing and organizing the team and the team's content. He was responsible for essential parts of the project, taking ownership of writing recommendations and portions of the results section. This was done

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in conjunction with assisting and editing all of the other content throughout the report and supplemental materials. Matt acted as the scribe in the absence of Hamayel by writing all meeting agendas and the majority of meeting minutes, in addition to his role of running several meetings. Beyond this, Matt took secondary ownership in the methodology in addition to creating the multi-language stakeholder survey for it. On this, Matt heavily assisted with and performed numerous interviews. Finally, Matt took point on the website related deliverables, taking over Caleb's initial design and integrating Ultimate Member, in addition to creating essential parts of the site, such as the getting started page, the about page, the social media aspects of the site, and the navigation menus. Beyond this, Matt was heavily involved in the supplemental materials, co-writing the website documentation for the navigation menus section, and being primarily responsible for the website documentation with the getting started page, the home page, and the about page. In addition to this, Matt added numerous plugins and recommended features to the supplemental materials.

SPONSOR DESCRIPTION

Eco-Net, also known as the Network for Ecological Education and Practice, is a non-governmental organization (NGO) in Denmark committed to the promotion of sustainable development. Through communication, networking, and education, Eco-Net seeks to "inform, inspire and create broad public involvement and dialogue about ecology, environment and sustainable development" (Eco-Net, n.d.).

Eco-Net was founded in January 1994 not long after the United Nations Conference on Environment and Development (Rio Summit) held in 1992. This summit was held to entice cooperation between member states regarding issues created after the Cold War, most importantly sustainability. One of the documents created during the summit, Agenda 21, stated that popular involvement and awareness are vital to the realization of sustainable social development. Accordingly, Eco-Net was one of the many NGOs formed worldwide after the summit committed to implementing the ideas and policies of Agenda 21. In accordance with the philosophy of Eco-Net to freely disseminate knowledge regarding the environment, Eco-Net also closely follows the guidelines and ideologies set forth by the Danish Ministry of Education as part of the ministry's effort to strategize education for sustainable development; this came about as a result of the United Nations Decade of Education for Sustainable Development. Most of the strategies consist of ensuring that all people are aware of the concept of sustainability and know how to act and make decisions regarding sustainability through knowledge and training (Danish Ministry of Education, 2009).

Eco-Net often focuses on networking as their primary source of awareness. According to the Eco-Net website, Eco-Net has built up a contact network for more than 10,000 recipients through their websites and email correspondence (Eco-Net, n.d.). Their email correspondence is free of charge and consists of a short listing of environmental-centered projects and events. This correspondence is published six times a year both in a printed and electronic format. Eco-Net also operates three different websites, www.eco-net.dk, www.GrønneSider.dk, and www.bu.dk. Each website lists news and other information regarding sustainable development, ecology, as well as the location of local environmental organizations. Eco-Net also holds debate meetings at which members are invited to discuss their opinions on environmental news and projects.

Eco-Net is run by a board of directors led by Chairwoman Camilla Carstensen, as well as managed by CEO Lars Myrthu-Nielsen (who is also on the board of directors). Eco-Net is part of two larger organizations, the Danish 92 Group and the Danish People's Information Consultation. The Danish 92 Group was founded in response to UNCED in 1991 and is currently comprised of 21 environment and development organizations in Denmark.

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The different organizations cooperate with one another on related issues both domestically and internationally through joint-events, joint-lobbying, and co-hosting information activities, but also have the autonomy to promote their own public awareness agendas. The Danish People's Information Consultation (DFS) consists of 35 national organizations that each contain some affiliation to public schools or associations. DFS exists to provide contacts and information to Danish citizens seeking information on public education and civil society in Denmark. Both the Danish 92 Group and DFS provide some oversight to Eco-Net, but for the most part Eco-Net has the autonomy to perform their own initiatives.

Since 2007, Eco-Net has established four local branches in Denmark, in Copenhagen, Zealand (outside Copenhagen), central Jutland, and northern Jutland. Eco-Net hopes to establish another branch in southern Denmark as well. Each branch is meant to work closely with their constituents to further implement Eco-Net's mission as well as provide local feedback to the organization as to how successful the organization is. Furthermore, the NGO boasts 500 members at four local departments (Network for Ecological Education and Practice / ECO-NET, (n.d.)).

References:

Eco-net.dk - Forside | ØKO-NET. (n.d.). Retrieved from https://eco-net.dk

Education for sustainable development: a strategy for the United Nations Decade 2005-2014. (2009). Kbh.: Danish Ministry of Education.

Network for Ecological Education and Practice / ECO-NET. (n.d.). Retrieved March 15, 2018, from https://www.daea.dk/themes/about-daea/member-organisations/network-for-ec ological-education-and-practice-eco-net/

Eco-Net Leadership Interview

We are a group of students (Caleb Wagner, Evan Plevinsky, Matthew Hagan) from Worcester Polytechnic Institute in Worcester, Massachusetts in the United States. We are conducting a research study for Eco-Net to gain information about the Green Overview website.

This interview will take approximately 20-30 minutes.

We are requesting your participation, which will involve the completion of this interview in regards to the goal of Grønt Overblik as well as the audience it appeals to, the important aspects of the website, and other questions pertaining to this topic. Your participation in this study is voluntary. There are no risks involved with your participation. It is perfectly acceptable if you choose not to participate or to withdraw from the study at any time. Your name will not be recorded in any of our results. If at any time you discontinue the interview, your results will be permanently destroyed. The results of the research study will be published, and all data that has been stored regarding this interview will be permanently destroyed.

If you have any questions concerning this research study, please contact us at gr-eco-net-a18@wpi.edu.

For more information about this research or about the rights of research participants, or in case of research-related injury, contact:

Prof. Katherine Foo. Worcester, Interdisciplinary and Global Studies, WPI, 100 Institute Road, Worcester, MA (Email: kfoo@wpi.edu). You may also contact the chair of the WPI Institutional Review Board (Prof. Kent Rissmiller, Tel. 508-831-5019, Email: kjr@wpi.edu) or WPI's Human Protection Administrator (Gabriel Johnson, Tel. 508-831-4989, Email: gjohnson@wpi.edu).

In a broad sense, what do you foresee Grønt Overblik being used for?

Walk us through how a user will go about using the website in the way you specified.

What specific audience or audiences are you targeting with the Grønt Overblik website?

How does Grønt Overblik appeal to that group?

What do you hope that these audiences will get out of the website specifically?

Which part of the Grønt Overblik website is the most valuable?

Why is that the most valuable portion of the website?

Is/Are there any portion(s) of the website you think could be removed until the organization has grown?

If yes, which portion(s) of the website could be removed?

If yes, why can those portion(s) of the website be removed?

What makes each portion of the website that you think should be kept on important?

How much value do you think the querying functionality has for Grønt Overblik?

To you, is the querying functionality vital for Grønt Overblik's success?

Why / Why not?

Local Business Interview

We are a group of students (Caleb Wagner, Evan Plevinsky, Matthew Hagan) from Worcester Polytechnic Institute in Worcester, Massachusetts in the United States. We are conducting a research study for our sponsor Eco-Net, a non-governmental organization aiming to consolidate environmental information throughout Denmark, to gain information about how Eco-Net can encourage community engagement.

This interview will take approximately 20-30 minutes.

We are requesting your participation, which will involve the completion of this interview in regards to how your business interacts with the community. Your participation in this study is voluntary and there are no risks involved with your participation. It is perfectly acceptable if you choose not to participate or to withdraw from the study at any time. Your name will not be recorded in any of our results. If at any time you discontinue the interview, your results will be permanently destroyed. The results of the research study will be published, and all data that has been stored regarding this interview will be permanently destroyed.

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Tell me a little bit about your business.

(If not specified) Can you elaborate on the goal of your business/the products it sells/why you wanted it to be environmentally sustainable/etc?

How do people looking for environmentally sustainable products find your business?

What troubles do you face in finding people who want to buy environmentally sustainable products?

How did you find an environmentally sustainable supplier for the materials needed to make your products?

Is it difficult to find suppliers for environmentally sustainable materials?

If yes, can you think of some way to make this easier?

Do you interact with any other businesses that are involved in sustainable development?

If yes, who are they?

How do you find out about other businesses in your region that are also aiming to sell environmentally sustainable products?

Have you heard of the organization Eco-Net?

Are you involved with their Grønt Overblik website?

Would a database that contains a lot of contacts in your region such as individuals, businesses, and organizations who are seeking to improve the environment be useful to you?

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Why/Why not?

Would a calendar of events involving environmental initiatives be useful to you?

Why/Why not?

Would a library of environmental resources be useful to you?

Why/Why not?

Would a blog to talk to other environmentally minded individuals be useful to you?

Why/Why not?

Of those four categories, which one would be most useful to you?

NGOs Interview

We are a group of students (Caleb Wagner, Evan Plevinsky, Matthew Hagan) from Worcester Polytechnic Institute in Worcester, Massachusetts in the United States. We are conducting a research study for our sponsor Eco-Net, a non-governmental organization aiming to consolidate environmental information throughout Denmark, to gain information about how Eco-Net can best set up their database.

This interview will take approximately 20-30 minutes.

We are requesting your participation, which will involve the completion of this interview in regards to the scale of your organization and how it manages information. Your participation in this study is voluntary. There are no risks involved with your participation. It is perfectly acceptable if you choose not to participate or to withdraw from the study at any time. Your name will not be recorded in any of our results. If at any time you discontinue the interview, your results will be permanently destroyed. The results of the research study will be published, and all data that has been stored regarding this interview will be permanently destroyed.

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Institutional Review Board (Prof. Kent Rissmiller, Tel. 508-831-5019, Email: kjr@wpi.edu) or WPI's Human Protection Administrator (Gabriel Johnson, Tel. 508-831-4989, Email: gjohnson@wpi.edu).

How do you find people to fulfill the jobs you need? For example, if you need someone with marketing experience, how do you find someone with marketing experience?

How do you get people to volunteer for your organization?

Is there someone specific within your organization who takes of outreach, social media?

How do you find out about other organizations in your region that might be doing similar work to you or have a similar scope?

How do you find out about other projects that people are working on that might concern or be relevant to the work that you do?

What difficulties did you face when trying to set up your organization in your region, specifically along the lines of gathering information?

What troubles did you have in finding people or organizations who could best help you achieve your goals or accomplish a task?

What troubles do you still face in finding people or organizations who can best help you achieve your goals or accomplish a task?

What difficulties did you have in developing a list of contacts for your organization?

What are the different types of information that you need when building a list of contacts?

Would a database that contains a lot of contacts in your region such as individuals, businesses, and organizations who are working to or seeking to improve the environment be useful to you?

What kinds of information would you want this database to have?

Would a calendar of local environmentally related events be useful to you?

What are some problems you see with creating something like a database or calendar of events?

Do you know of any other organizations that might be able to provide further insight into these questions?

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Stakeholder Interview

We are a group of students (Caleb Wagner, Evan Plevinsky, Matthew Hagan) from Worcester Polytechnic Institute in Worcester, Massachusetts in the United States. We are conducting a research study for our sponsor Eco-Net, a non-governmental organization aiming to consolidate environmental information throughout Denmark, to gain information about improving the Green Overview website.

This interview will take approximately 20-30 minutes.

We are requesting your participation, which will involve the completion of this interview in regards to your interactions with Green Overview as well as how you've interacted with the website and which aspects of the websites are most important. Your participation in this study is voluntary. There are no risks involved with your participation. It is perfectly acceptable if you choose not to participate or to withdraw from the study at any time. Your name will not be recorded in any of our results. If at any time you discontinue the interview, your results will be permanently destroyed. The results of the research study will be published, and all data that has been stored regarding this interview will be permanently destroyed.

If you have any questions concerning this research study, please contact us at gr-eco-net-a18@wpi.edu.

For more information about this research or about the rights of research participants, or in case of research-related injury, contact:

Prof. Katherine Foo. Worcester, Interdisciplinary and Global Studies, WPI, 100 Institute Road, Worcester, MA (Email: kfoo@wpi.edu). You may also contact the chair of the WPI Institutional Review Board (Prof. Kent Rissmiller, Tel. 508-831-5019, Email: kjr@wpi.edu) or WPI's Human Protection Administrator (Gabriel Johnson, Tel. 508-831-4989, Email: gjohnson@wpi.edu).

Are you involved with the Grønt Overblik website?

If yes, how did you get involved with Grønt Overblik?

If yes, how long have you been involved with Grønt Overblik?

What interested you in Grønt Overblik?

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What section(s) of Grønt Overblik is/are most important to you?

Is/Are there any portion(s) of the website you think could be removed until the organization has grown?

If yes, which portion(s) of the website could be removed?

If yes, why can those portion(s) of the website can be removed?

What makes each portion of the website that you think should be kept on it important?

What do you hope to get out of Grønt Overblik?

Walk us through your average use case, or how you would normally go about using the site.

Would you use the searching/querying capabilities of the Green Overview website?

If yes, what are some things you might be searching for?

What information would you like to find on the Green Pages (yellow pages) portion of Grønt Overblik?

Do you know of any sites similar to Grønt Overblik?

If yes, what are they?

WEBSITE DOCUMENTATION

The purpose of this document is to serve as an instructional guide on how to create the prototype website. This includes the way the prototype incorporates the previous features of the website, the plugins used, and how you might be able to replicate our work if needed. The focus was centered around the four major components of Grønt Overblik: the green pages, the calendar, the library, and the blog. We improved the flow of the website better improving the layout of the four major components and intertwining their functionality. Furthermore, we added a social media component to the website to allow users to interact more with the website and each other. While the solution presented here meets all the requirements as gathered from our interviews, this is just one of many solutions and serves to be a guide for the execution of your vision for the website. All of the features present here are drawn from the documentation on the recommended features and put into action.

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CONSTRUCTING THE WEBPAGE

To make the website easily transferable between the team and Eco-Net, the base of the website was constructed using WordPress just as the original Grønt Overblik website had been. The editing of the website was split between the default functionality of WordPress and the drag and drop functionality of a plugin called Elementor. The layout of the website was created using the WordPress theme OceanWP. This theme came with an additional plugin called Ocean Extra which expands on the features of OceanWP.

CAPTIVATING USERS WITH THE HOME PAGE

Often times, the home page determines whether a user will continue to use a website which is why the homepage was designed to capture the user's attention. On the redesigned homepage, users are presented with a description of Grønt Overblik and how they can begin using the platform. The "How to Get Started" button will redirect the user to the "Getting Started" page, where they can get an overview of the features on the site and how to use them.

Immediately below this, the user is presented with featured information. At the moment, this is the "Try the Green Calendar" section, as that was the feature that was deemed to be the most valuable from our interviews. However,
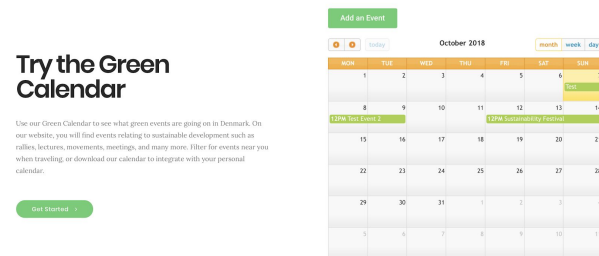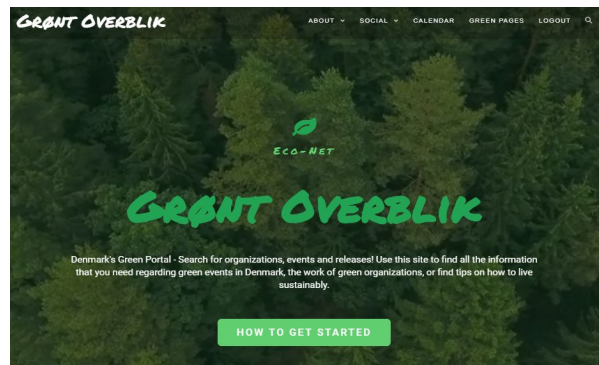
this can be replaced with other important highlights in the future, such as the 25th anniversary of Eco-Net.

After this, the user is presented with a quote which is designed to capture the human element of the webpage and how people resonate with the Grønt Overblik platform. This could be changed to different quotes, reviews of Grønt Overblik by other people, or posts from Facebook or Twitter. The user is then provided with a video taken from the existing site. We recommend that this is replaced with testimonials of users of the new platform, and how this platform inspired them to get further involved in their community. Finally, there is the slogan "Sustainability, made simple" designed to be an example of a slogan that Grønt Overblik could adopt to quickly get the website's message across.
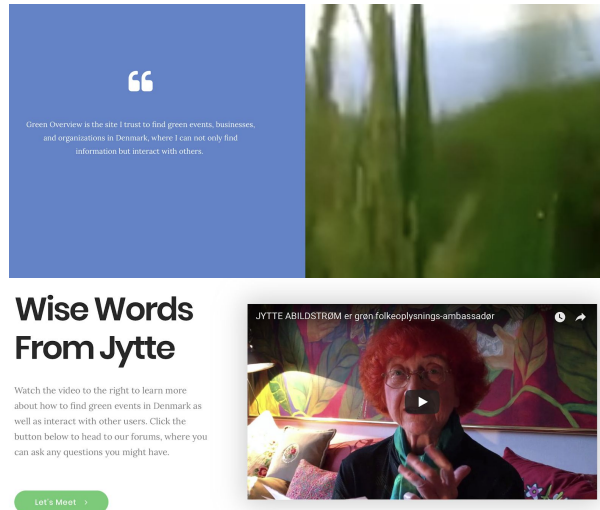
CREATING VALUABLE NAVIGATION MENUS

Properly creating the navigation bar at the top of the website is just as vital as creating an appealing home page. Without proper navigation, a user will struggle to access the different portions of the website. As such, the menu was laid out in a way that presents a user with all of the links they need while also showing which components are the most important.

There are six tabs that are global to all pages across the site. The first is the "Grønt Overblik" tab on the far left, which takes the user back to the homepage. Next, there is the
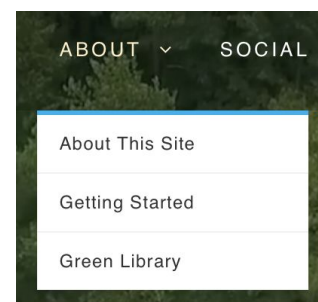
"About" tab which is currently a dropdown that takes the user to three separate pages. The first is the "About This Site" page, which details information about Eco-Net and the website. The second is the "Getting Started" page, which is described in detail later in this document. Finally, there is the "Green Library" tab which redirects the user to the original Grønt Overblik library.

The next set of links is under the "Social" tab. This tab is the hub for the social media aspect of the website. This contains sub-tabs for many of the interactive features available on the website, such as your profile, activity in your network, the forum page, notifications for any social activity, and your account info. For more information on each social media component, please reference the social network portion of this document.
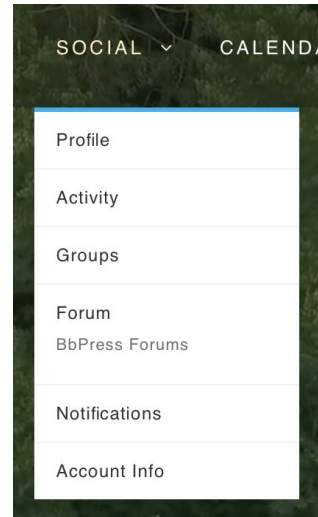
The fourth tab in the navigation bar is the link to the green calendar. Since the calendar was the primary focus among all of our interviews, this link is easily accessible. For the same reason, the "Green Pages" is presented as the fifth link on the navigation bar. The final link is a "Login" or "Logout" button that changes depending on whether the user is currently logged in or not.

The navigation bar also contains a search bar on the rightmost side. This searching feature is capable of finding any information on the calendar as well as in any forums that have been created. The functionality of this search bar is easily customizable utilizing the "Ivory Search" plugin. If there are any other features of the website that you would like to include in the query, the settings for Ivory Search can be edited to allow for them.

In addition to the main navigation bar at the top of the page, there is also navigation features available in the footer. Currently, it only contains social media icons that link to Eco-Net's Facebook and YouTube portals.

These could expanded upon with more icons, such as Instagram, if Eco-Net creates accounts for them. Additionally, the footer would be an ideal location to include basic information about Eco-Net as well as links to the other websites made by Eco-Net.

GUIDE USERS WITH THE GETTING STARTED PAGE

The "Getting Started" page is a simple and easy way for new and old users to learn about the most important features of site and how to use them. First, there is a brief explanation of the website and some of the features that it has to offer. The page then outlines the social media aspect of the website alongside example images and includes a button to register for a new account.

Further down, there is an explanation of the added features to the calendar as requested from our interviews. Each tab contains a picture of what the content looks like and a description of what it does. Additionally, there is a button that says "Find me an event!", which redirects the user to the "Calendar" web page.

Below this section, there is an outline of the green pages describing what it is and how the directory

Getting Started

Green Overview is a powerful site than can help you get in contact with other green individuals and businesses to find your green side! Listed below are some of the most powerful features that this site has to offer to you.
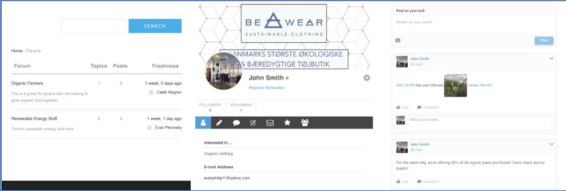
Thomas
Designer

Your Social Platform, Now Just a Little Greener

Green Overview is an amazing platform to get connected socially. On the site, you can post to your wall, message users and businesses, interact with a forum, and more! Hit the register button below to get started!
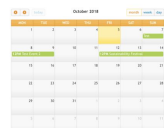
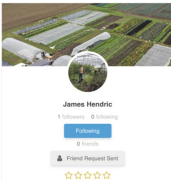Register

A Calendar Tailored For You

The people asked, and we provided. You wanted an easy to use calendar. One with visual integration, geo-filtering, commenting, and event exporting. Guess what? Its all here!
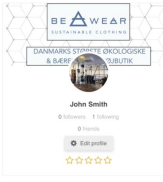
Find me an event!

With the updated calendar format, users can see a month by month calendar of the events that matter to them the most! You can organize the calendar by month, week, date. You can also look into the past or peek into the future to make plans far ahead! We give you the tools to enable you to make this calendar your own!

Search The Green Pages

Search our vast directory to find exactly what you need. With the platform's new filters, you can decide to only search through people or businesses. We've also added a field which lets you filter by interest, so what you are searching for is exactly what you want!

Try it for yourself!

works. There is also a button that says "Try it for yourself!" which redirects the user to the "Green Pages" web page. Finally, at the bottom of the getting started page, there is a section titled "Other Important Features" designed to highlight additional features available on the webpage. This currently contains an explanation the green library and how it will remain on the original website for the time being. Below that, there is a "More to come" tab designed to show that the site is growing and allows for further additions to the webpage.
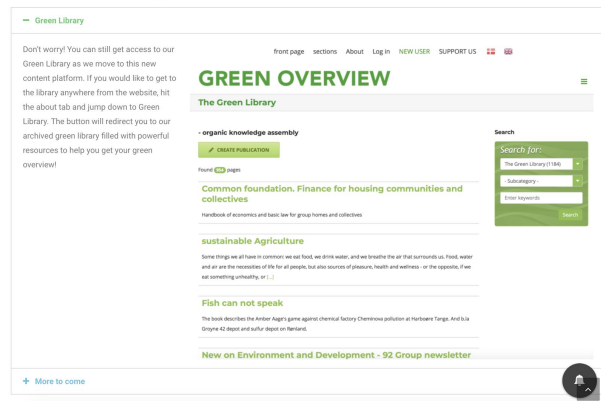
Effective Teaching on the About Page

The About Page is an important page for describing Eco-Net and the organization's mission, but for the purpose of our project, much of the information that should be included in the productionized website was left out. The goal of creating this page was to show how the information could be laid out to encourage users to read more about the organization. Currently, the page contains links to the social media platforms that Eco-Net utilizes. Underneath is a video from Eco-Net's current page talking about Eco-Net and its

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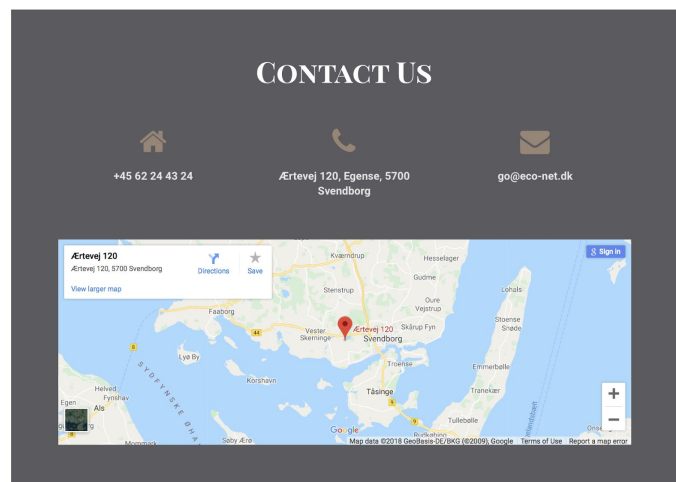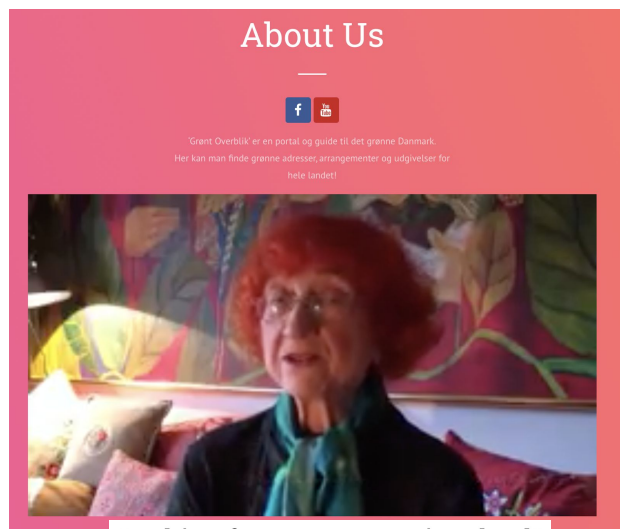
importance. Our recommendation would be to update this video with Lars discussing the new platform's direction to help users get an idea of why the website was updated.
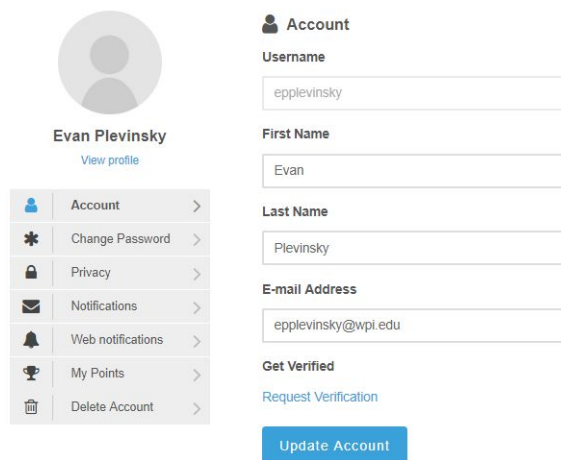
Next, the user is presented with the option to sign up to be a part of the green community. Continuing down the page, there is a contact portal where a user of the website can reach out to Lars and the team if they want to get more involved or have questions about the platform.

TRANSFORMING THE GREEN PAGES INTO THE ECO SOCIAL NETWORK

The issue that the original Green Pages faced was that there was no means for user interaction. While the information was useful, there was no motivating factor to utilize it more than once. For this reason, we overhauled the green pages to be a full social media network with profiles, messaging, and activity feeds.

Each profile takes the place of the database entries from the original green pages. Individuals or representatives from businesses or organizations can create their own user profiles and customize them however they like. Each profile contains a variety of information about the user or organization, including a description, contact information, pictures, and interests in sustainable living.

The green pages itself is a list of all of the users on the website. The current searching functionality allows a user to find businesses or organizations separately from individuals.

Search fields for the database can be easily changed, but the ones that are currently available are Account Type (meaning Individual or Business/Organization), Organization Name, First Name, Last Name, and Interests.

As stated before, there are two kinds of user accounts: Individuals and Businesses or Organizations. These account types are selected by the user upon registering for an account. The type of account they select determines the information they need to fill out as well as what information shows up on their profile. Currently, the only difference between the two is that Businesses and Organizations are prompted to enter the name of their business or organization and this name will appear in the header of their account. However, it is recommended to expand on this feature in the future to allow for easier interactions between individuals and businesses or organizations. Additionally, separating the two into their own user categories may be useful depending on the goals you have for each group.

All users can interact with other users on the website through different communication methods. Individuals who are looking to share their own experiences can utilize the posting feature available on each user's profile which works similarly to that of Facebook. Additionally, users can make posts on other account pages which can be managed by the owner of the account that was commented on. Users can also utilize the forum to have a discussion or ask the community questions. This functions much the same as the billboard from the original website, but encourages more discussion by creating a post-specific comment thread. Direct messaging between users is supported on the website as well, allowing for individuals to get in contact with other users of the website.

Two other features that are especially worth mentioning is the ability to verify users and display profile completeness. Verified users will have a mark next to their name indicating that they are legitimate users of the website that plan on utilizing its features to live more sustainably. To verify a user, the user has to submit a request for an administrator of the website to

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eventually confirm. This can be used to assure that Grønt Overblik has accounts that are dedicated to the cause and will not cause trouble. Verifying users can cause their account to gain more privileges on the website. However, this functionality has not currently been added, but it is encouraged that it gets utilized in the future.

Profile completeness shows the user how much information they have filled out on their account. The more informational fields they complete, the higher their percentage bar is. Determining which profile fields are considered for profile completeness as well as the weight in which they hold are entirely customizable. The purpose of this is to encourage users to share information about themselves. The searching functionality on the website relies on users filling out their information so it is important to incentivize them to complete their accounts. The better the information on each account, the easier it will be to utilize the green pages. Currently, profile completeness has been fully implemented for users with the "individual" role, but not for the "business/organization" role.

Creating a profile for individuals, businesses, and organizations not only accomplishes the original goal of the green pages, but also gives each user the ability to communicate with one another. The features for communication were added to get the community to interact with each other. Having a static website with information may get the message across, but being able to interact with other users will get people to come back and want to utilize the website more.

The plugin that accomplishes both the account creation and the user communication is called Ultimate Member. This plugin is one that the original website already uses, but with additional features that have been activated to allow for user communication. There were additional extensions that were added from Ultimate Member to make the website function as it does. For a full list of the extensions, please refer to the list of plugins included in the supplementary materials.

VISUALIZING THE EVENTS CALENDAR

The calendar that was implemented onto the original website accomplished all of the goals that it set out to achieve. For this reason, most of the functionality of the calendar was ported over into the new website. The major change that was made was the visual overhaul of the information.

We first added an actual calendar that shows the dates of each event. When you hover over each entry, it will display an excerpt from the event description telling the user what the event is about. If you click on the event itself, the website will bring the user to the event page that gives the full explanation of the event.

The entire list of events is presented directly next to the calendar. This has more detail than the calendar itself and is listed in order of closest date going from top to bottom. The information displayed is fully customizable so it is possible to display any information to the user that you want.

The searching functionality only applies to the event list and is primarily based on event name and event location. However, other search fields are available including dates of the event, the region it takes place in,

and the category the event falls under if the user assigns it a category. While most of the searching functionality works great, the location-based searching has bugs that need to be addressed.

Creating an event is available for logged in users. Basic information such as the name of the event, where the event is, when it is occurring, and what it is about are all required entries. Additionally, a user can opt to assign a category to the event as discussed before which will make searching for the event easier. A picture can also be included in the event details as the main image for the event. Furthermore, there is the ability to book a ticket to the event in advance. This lets the host set a maximum number of people that can attend an event, and they will receive a notification whenever users requests to attend. They can also charge the user for bookings if there is an entrance fee.

The individual event pages contain all the information submitted when the event was created. Google Maps has been utilized to create a map based on the location so that users can see exactly where the event is taking place. Each event is also capable of exporting to another calendar. This means that someone with a Google Calendar, Outlook, or other calendar program can export the event and put it directly in their personal calendar without needing to do any additional work. Similarly, users can share the event on different social media websites such as Facebook. The final feature for each event is the ability to post a comment about the event. This is public to everyone and even without an account can access this feature, but they are required to enter personal information before doing so. However, if you do not want anonymous users adding comments, this feature can be removed.

The plugin that was used to create this calendar is called Events Manager. The functionality we included is merely a subset of the plugin's capabilities. The visuals that the plugin provides are customizable as well. One interesting detail about Events Manager is its ability to be supported by plugins that improve Search Engine Optimization. This could be important to

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keep in mind when utilizing the Search Engine Optimization Documentation provided in the supplementary materials.

RECOMMENDED FEATURES

The purpose of this document is to go into detail about all of the features that the team recommends to incorporate into the website. These features are supported by the interviews conducted throughout the project. Not all of the features on this list are present in the prototype due to our confined time frame and multiple different design options for the website, but we suggest that many of them make it onto the live website sometime in the future.

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A Simplified Home Page

The interviews we conducted indicated that the home page on the original website contained too much information. While the information present is useful, there does not need to be so much presented all at once as the first thing a user sees.

THE GREEN PAGES	ECO DIARY	THE GREEN LIBRARY	THE GREEN MESSAGE BOARD
- the ecological counterpart of the Yellow Pages	- largest nationwide green calendar	- Knowledge collection on ecology and sustainability	- for green, organic and sustainable storage!
The latest in the Green Pages	**Upcoming Events**	**Latest releases**	**Latest postings**
Association Dairy	Climate crisis and Danish policy - lecture by Ejvind Larsen	Common foundation. Economy for residential communities and collectives	Organic bedding
Jeppe Læssøe	October 21, 2018 - October 21, 2018		Free legal counseling service
Sustainability Science Center	Sustainable construction	Sustainable Agriculture	Boligadvokat24
Danish Friskoleforening and Friskolernes Hus	October 25, 2018 - October 25, 2018	Fish can not speak	Veganism - a healthy threat to an unhealthy industry
The Green Student Movement	Stormøde: Towards industrial wine - for a green farm	Enjoy environment and development - The 92-group newsletter	Horseback - understated and northbagged
See all in the Green Pages	October 28, 2018 - October 28, 2018	climate Testament	See everyone in the Green Message Board
	Set the UN's world goals on		

The home page itself should serve as an entry point to the website and a guide for where users, especially new users, should go. Keeping the home page simple with only essential information will encourage users to explore the website further to see what it offers. This is also why there should be a page explaining how the website should be used, and it should be accessible very early into the entrance of the website.

Laying out the different aspects of the website in different components was a good idea and should continue to be done, but the components with the most priority should be emphasized. Additionally, the components should be clearly accessible at all times via the navigation bar. The navigation item that translates to "sections" on the current website does contain each section, but it is unclear what it links to without clicking on it first. The navigation bar should also reflect the prioritization of the components. For example, the green pages and calendar were indicated to be the most

important components of the website so they should be their own link in the navigation bar, while the library and blog can be in a submenu or incorporated into other aspects of the website.

A Social Media Aspect

The interviewees heavily emphasized their desire to interact with other users of the website. The best way to accomplish this would be to implement features that mimic other social media websites such as Facebook. The blog on the original website appeared to encourage users to interact with each other, but having this separated from the rest of the content on the website takes away from the viability of this idea.

Create Profiles

Like on Facebook, individuals and businesses should be able to create personalized user profiles that share different information about them such as their interests, contact information, and other relevant information. The creation of a profile should act in a similar fashion to the green pages. The Individuals, businesses, and organizations would create accounts to post their information should allow other users to search for them based on the credentials they provide.

Message Others

It was stated by the interviewees that adding the capability of messaging on the website would be a greatly appreciated feature, as interviewees talked about how they wanted to be able to message like-minded individuals, and most especially, businesses they were interested in reaching out to. For example, if a user wanted to ask an

organization about volunteer opportunities, they should be able to do this through the website.

Form Groups

Since the research showed that developing communities of people with shared identities was important for improving community engagement, another major addition to the website could be the ability to form groups. This new functionality could allow users to invite other people to groups of their creation. Group pages should allow its members to send messages and notifications to all members of the group and post information directly to the user feed. Another important aspect of groups would be to allow them to host events on the calendar, thus increasing their engagement with the calendar.

Use Geography to Create Groups

Forming groups based on geography may help to get more individuals engaged with the website. This would mean that people who live together in an ecovillage, for example, or live on the same street, could all be part of a group on Grønt Overblik. Since the website is geared towards developing and improving communities, this would be beneficial as it would help to bring people in these locations closer together, something done by other websites such as Nextdoor.com. For example, a user can post that they are looking for a tractor to borrow on the forum, and other members who might have a tractor can message the user that they have a tractor the user can borrow.

Comment on Posts

Large amounts of interviewees stated that they wanted or would like some capability of commenting so that they can comment on posts and events. This would allow them to share their thoughts and feelings about the different content on the website and thus make them feel more engaged.

Notify Users of Replies to Their Comments

It is recommended to notify users of replies to their comments on the website so that users can see when other people have commented on the initial comment that they made. This will encourage people to start a dialogue with one another, thus increasing engagement on the platform as well as it will help improve search engine optimization by increasing the number of comments.

Allow Users to Subscribe to Comments

Allowing users to be able to subscribe, or follow, a comment would be useful to notify users when comments have been added to a comment thread they are interested in. Without this, users will have to keep coming back to the site on their own to see if new comments have been made in the comment thread, but with subscriptions, users can be notified once someone else has added to the comment thread.

Push Content from Website to Other Platforms

Interviewees stated that they would like to see calendar events and information from Grønt Overblik on sites like Facebook, as they tend to already be using these websites. Therefore, it is recommended that information from the website be pushed to other platforms such as Facebook, Twitter, and Instagram. This is possible through plugins such as AddToAny Share Buttons, which allows anyone to share content to other platforms.

It is also recommended that Eco-Net have a dedicated individual who can consistently push content from Grønt Overblik to other platforms and monitor the information on other sites.

Activity Feed

Adding an activity feed to the website is a great way to let users themselves control what content they see on the website. Similar to Facebook's activity feed, users should be able to scroll through an activity

feed to see information, events, comments, and other content that has been added to the website.

Tailor Content

Expanding upon the activity feed recommendation, interviewees also described their desire for tailored content. For example, a user of the website should see information that they are interested in first (such as in their activity feed), and then see other content on the website. It might be beneficial to even have suggested articles for users that appear in their activity feed based on the interests of the user, thus increasing the amount of content users are exposed to and interact with.

Feature User Stories

Many interviewees talked about featuring certain blog posts at the top of a user's activity feed. For example, these could be posts written by individuals that tell about their life story. Someone who has made the change to living in an ecovillage could be asked to write their experience for the website, allowing this story to be featured at the top of the website. Many interviewees resonated with the idea of seeing what other people have done to live sustainably. While the social media aspect could apply to this, the concept of a featured story would be sure to make this point clear. Users can read about stories that they might have a personal connection to and can help motivate them to start or continue living sustainably.

EXPAND ON THE CURRENT CALENDAR

The content available on the current calendar page gives the users all of the information they need to get involved. The best way to improve the success of the calendar is to make it more visually appealing as well as by adding additional features to individual event posts.

Looking at the list of events in the current setup can be overwhelming due to the amount of information presented at the same time. This can be remedied in a few different ways. First, adding a visual calendar could give the user an overview of the upcoming events in the next month in a matter of seconds. Second, providing smaller, more confined excerpts from the event gets the message of the event across while simplifying the information. This could mean that event descriptions in the list could be shorter or that event dates could be shown as an interval.

For the events themselves, it would be useful to export the event to a personal calendar. This would make it easy for a user to transfer data from the website and could make them more likely to attend events that are added to their own calendar. In a similar fashion, being able to share the event on social media would not only provide a way to export the event but also to increase the event's publicity as well as the website's publicity. Additionally, providing the user with a map of the exact location makes it easier for them to approximate the location of the event.

Provide Offline Access to Events

Another feature would be to provide additional ways for users to attend events that they were interested in attending but could not make due to scheduling conflicts. An example of this would be to provide recordings of events, particularly lectures, on the website. All users can access the information from these events without having to attend in person.

Furthermore, adding the capability to host courses on the website might also be a useful addition, for which there are many plugins available.

EXPAND ON THE CURRENT GREEN PAGES

Create a Product Page

Adding a green product page could be helpful in marketing the use and importance of the green pages. An example of this would be to have at the top of a user's feed a list of three green products that they can buy. The products featured would need to change so as to not show the same information for too long. Highlighting different products at the top of a user's feed shows them different environmentally-friendly products, but also serves as a way to show what the green pages is capable of doing and why users should be interested in searching on it.

OTHER GENERAL RECOMMENDATIONS

The content presented on the original website provides useful information, but there was no indication as to the age of the data. Information without a timestamp puts the recency and relevancy of it in question so it's important to let the user know how current it is.

Add Volunteering to the Website

Another recommendation is to expand the social media aspect of the website to make Grønt Overblik a platform where users can find volunteering opportunities. For example, organizations can post information about events for which they are looking for volunteers. Users can fill out forms, possibly as part of their user profile, that details exactly what kind of volunteering they are looking to do and their availability. The database can then match users up to the volunteering jobs that best fit their interests and availability. The website already has the capability of doing this, but it needs to be set up so that this is possible.

WORDPRESS PLUGINS

The purpose of this document is to serve as an outline for plugins that we think could have use in the current and future iterations of Grønt Overblik. Please feel free to implement or not implement the plugins at your own discretion, as these are suggestions.

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WEBSITE DESIGN PLUGINS

These plugins allow for content to be structured differently on the website, making it easier to improve the design and overall user experience with the site.

DIVI
Divi is a Wordpress theme, not a plugin, but it is very useful for designing the website as it is a drag-and-drop interface.
WHY IT'S USEFUL
Divi is very useful for easily designing the website and making it look good.

ELEMENTOR
Elementor is a live page builder that allows pages to be designed in real-time and view the updates. It has an easy-to-use, drag-and-drop interface.
WHY IT'S USEFUL
This is a great tool for easily designing the website and making it look good.

ENVIRA GALLERY
This allows users to create photo galleries on the website.
WHY IT'S USEFUL
This might be useful for displaying lots of photos on the website, particularly with the user profiles.

NEXTGEN GALLERY
This is a good plugin for displaying lots of different images in different formats.
WHY IT'S USEFUL
This might be useful for displaying lots of photos on the website, particularly with the user profiles.

SOLILOQUY

Soliloquy is a slider plugin that is optimized for mobile websites.

WHY IT'S USEFUL

This is an easy plugin to use that will allow pictures to be added easily to the mobile platform.

SMART SLIDER

Smart Slider is a slider plugin that is optimized for SEO.

WHY IT'S USEFUL

This plugin makes it incredibly easy to create dynamic sliders for the site, without ever worrying about the code. It also makes it easy to add content that is already optimized for SEO.

IVORY SEARCH

Ivory Search is a search bar optimization plugin that allows for content that would not have originally been found through queries to appear.

WHY IT'S USEFUL

This plugin makes it possible to not only find the contents of forums that match the queried terms, but also to find events and user posts. Ivory Search can also be applied to many different plugins making it extremely versatile.

MARKETING PLUGINS

These plugins can assist in getting data about the website as well as expanding it to more users and platforms.

ADDTOANY SHARE BUTTONS

AddToAnyShare is the perfect plugin for encouraging social media engagement and increasing traffic on the website. The AddToAnyShare buttons can share the site content to over 100 different platforms and has lots of display options for how the content will be viewed when shared.

WHY IT'S USEFUL

This is a great plugin for connecting this website to other social media, and allow users of the site to share any information that they want to on their own platforms.

JETPACK

Jetpack has a lot of different features associated with it that deal with everything from the website design to optimization of the website. The best features for the website concern the marketing features, as Jetpack allows content to be posted at scheduled intervals as well as content to be posted to multiple social media accounts all through the plugin.

WHY IT'S USEFUL

Jetpack is a really good way to post content to social media as well as the website, and it also provides some additional features such as analytics that might prove to be useful.

GOOGLE ANALYTICS FOR WORDPRESS BY MONSTERINSIGHTS

This plugin stores analytics right into WordPress so that it is easier to view.

WHY IT'S USEFUL

This allows Google Analytics to be pulled directly into the website so that metrics about the website can be viewed.

GRAVITY FORMS

This plugin allows administrators to create custom forms and features on the forms.

WHY IT'S USEFUL

Gravity Forms is a great plugin that can be used to have users contact Eco-Net directly through the website by creating custom forms, rather than trying to call or email Eco-Net

HUBSPOT

Hubspot is an incredibly powerful tool for growing a business or organization on WordPress. It can help capture new lleads with forms and pop-ups, build an email list, and track visitor behavior on the site.

WHY IT'S USEFUL

Hubspot makes it really easier to see what visitors are doing on the website as well as manage current and new contact lists through email forms.

OPTINMONSTER

OptinMoster is ideal for using pop-ups and content upgrades to grow an email list. It is possible to customize the look of each opt-in, plus it integrates well with email providers for seamless list building.

WHY IT'S USEFUL

OptinMonster features a wide variety of opt-in styles with plenty of customizable options. Their dashboard also provides plenty of data, so it is easy to always be informed about which design decisions matter.

COLLABORATION PLUGINS

These plugins help with collaboration and communication, and can make users lives easier.

BUDDYPRESS

BuddyPress is perfect for creating groups and adding forums to the website, as well as creating an "exclusive" experience for users

WHY IT'S USEFUL

BuddyPress is a great way to add a social media element to the website and allows users to connect better to one another.

ULTIMATE MEMBER

Ultimate Member allows for the creation of user accounts and profiles so that users can post their activity, directly message one another, and create forums.

WHY IT'S USEFUL

Ultimate Member is another great way to add a social media element to the website in a similar fashion to BuddyPress

CYBERSECURITY PLUGINS

These plugins are to be used to improve the security of the website by monitoring the content that is posted to the website as well as the people who are using the website.

AKISMET

This is an anti-spam plugin that can be used to check comments and keep the website free of malicious content. It checks comments to see if they are spam as well as makes sure that people do not post "hidden" URL links in comments.

WHY IT'S USEFUL

This is a good way to improve the security of the website by filtering out spam and bad content.

GOOGLE CAPTCHA

Google Captcha provides an extra layer of security to the website by adding a simple, extra check box that blocks spam attacks.

WHY IT'S USEFUL

This is a very simple plugin that can be used to improve the security of the website.

VAULTPRESS

VaultPress is a very simple way to back up the website.

WHY IT'S USEFUL

It is important to back up the website in the event that the website becomes compromised or files are lost or corrupted.

BACKUPBUDDY
BackupBuddy is a very simple way to back up the website.
WHY IT'S USEFUL
It is important to back up the website in the event that the website becomes compromised or files are lost or corrupted. Sucuri Security

SUCURI SECURITY
Sucuri Security is a fantastic plugin for monitoring the integrity of files and failed login attempts, and even performing malware scans.
WHY IT'S USEFUL
This plugin is very useful for verifying the overall integrity of the website by constantly looking for hacking attacks.

OPTIMIZATION PLUGINS

These plugins are to optimize the website for different platforms as well as allow the website to be loaded faster.

WPTOUCH
WPtouch is a plugin that helps with optimizing the website for mobile platforms. This is something that is recommended by Google and is very simple to use.
WHY IT'S USEFUL
It is very important to have a mobile-friendly design that users of the website can easily view on their phone. As such, this plugin can greatly help with creating this capability.

YOAST SEO

Yoast SEO can help optimize every post and page for maximum optimization, it can show how content will be displayed in search engine results, and it can even make suggestions to the website to increase SEO rankings.

WHY IT'S USEFUL

This plugin is useful for improving SEO so that the website appears higher on Google.

WP SUPER CACHE

WP Super Cache can add caching to the website to make the website load content faster.

WHY IT'S USEFUL

Making content load faster is good for both the users of the website as well as improving search engine optimization.

SEARCH ENGINE OPTIMIZATION

Improving Search Engine Optimization (SEO) for Grønt Overblik is of vital importance for increasing the amount of traffic the website receives. Through plugins and an optimized website structure, the SEO can be improved so that more people will be made aware of Grønt Overblik and the features that it contains. This document contains information about how to improve optimization for Grønt Overblik so that it appears higher in search results on search engines like Google.

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SEO AND ITS IMPORTANCE

SEO is a strategy used by websites to rank higher in search engines such as Google so that the website acquires more traffic. This is accomplished through optimizing the code and formatting of the website so that it is easy for search engines to find the website and its information. By optimizing content on a website, people will be able to find topics that the website contains faster because the search-engine-optimized content will appear higher in the search results.

Because search engines are often the biggest source of traffic for most websites, it is imperative that all websites optimize their content. All search engines such as Google and Bing use pagerank algorithms that are designed to understand and rank the pages of a website for the search results. These algorithms are affected by a number of factors, such as the amount of traffic on the website, the perceived credibility of the website, the content the website contains, and the age of the website. While a lot of the ranking process is out of the control of website owners, there are still areas that can be improved so that the rank is increased. If content is not optimized on a website, then search engines will not know how to rank it, and the content will appear much lower or not at all in the search results.

Furthermore, it must be emphasized that search engine optimization is a process that must be continuously performed so as to ensure that all new content is properly optimized, and that older content only increases in its ranking.

SEO for WordPress

While SEO is a very nuanced topic that many computer scientists dedicate their careers towards, WordPress allows website owners to easily optimize their content through built-in features and plugins.

Check Visibility Settings

The first thing to do when trying to optimize the website is to make sure that it is able to show in search results, as WordPress comes with a built-in option to hide a website from search engines (the reason being that the website can be fully developed before going public).

Because this option can sometimes get checked accidentally, the first thing to do is to make sure that this option is unchecked. Simply log in to the admin portion of the website and navigate to **Settings » Reading**.
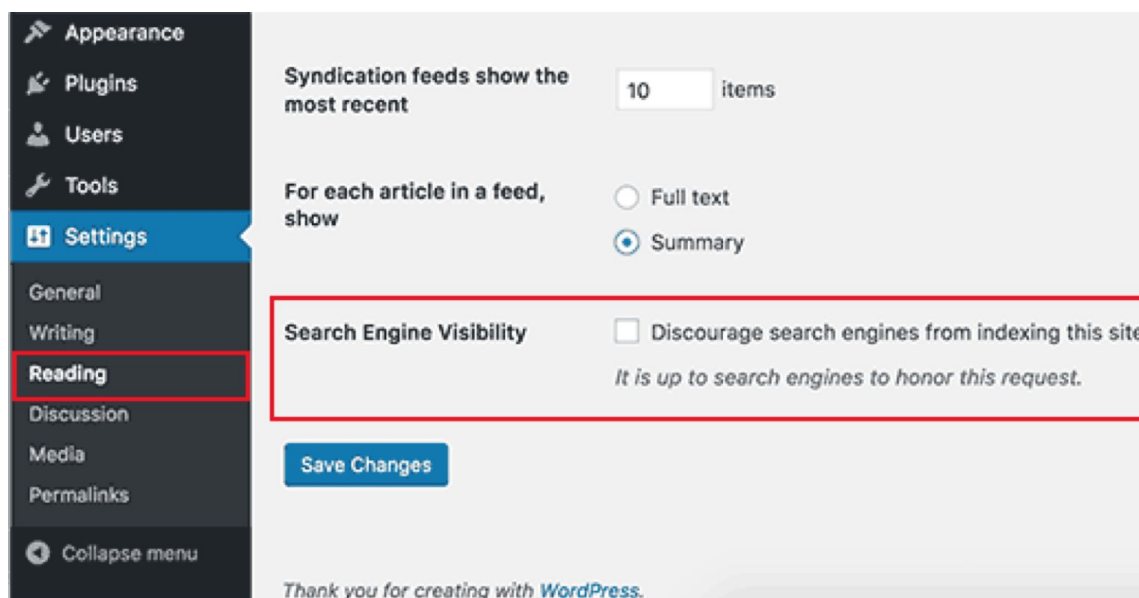
Scroll down to the 'Search Engine Visibility' section and make sure that the box next to 'Discourage search engines from indexing this site' is unchecked. Also remember to click on the 'Save Changes' button to store the changes.

Picking Proper URL Structures

SEO friendly URLs contain words that clearly explain the content of the page and are easy to read by both humans and search engines. Some examples of SEO friendly URLs are:

```
https://www.tutorials.com/computer-science/
https://www.medium.com/how-to-increase-traffic-for-your-site/
```

Notice that these URLs are readable and a user can guess what they will see on the page just by looking at the URL text. A non-SEO friendly URL looks like the following:

```
https://www.wpbeginner.com/?p=10467
http://example.com/archives/123
```

These URLs make it impossible to know what the content of the page is like. Using SEO friendly permalink structure (creation of URLs for all website pages in WordPress) improves the chances of getting better positions in search results.

This can be done by going to **Settings » Permalinks**. All pages of the website should have the post name option selected (and remember to click on "Save Changes" when done).
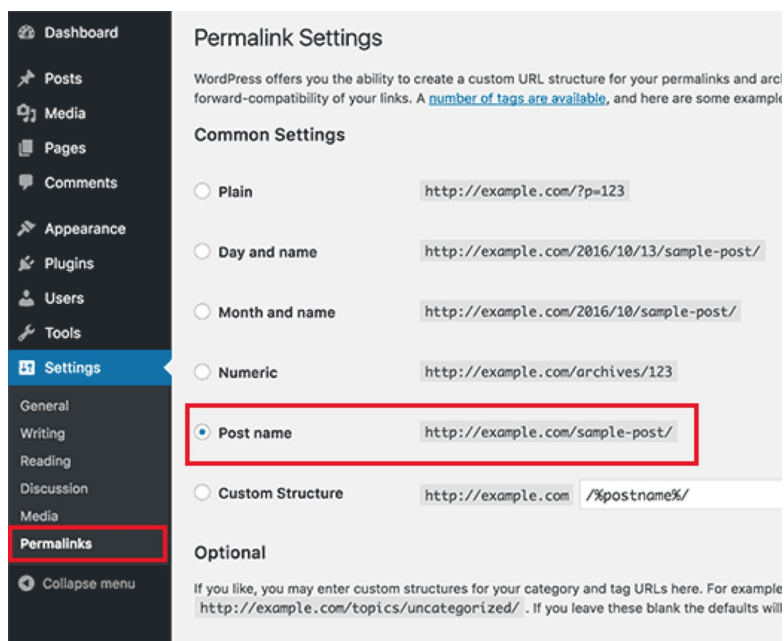
It is important to note that for a website that has been running for more than six months, it is not advised to change permalink structure. By changing permalink structure on an established site, it is possible that the existing SEO ranking can be lost. If it is necessary to change the permalinks, hire a professional who can find ways to work around this issue with redirects.

OPTIMIZE SPEED

Speed is important for SEO as search rankings are greatly affected by the speed of a website. The faster a website loads, the better the search rank. Improving the speed of the website can be done using different techniques. The first and simplest technique is making sure that WordPress and all the plugins are updated, as oftentimes, updates will include improvements to speed and performance.

Employ Caching

Every time users go to a page on the website, the page is recreated from scratch. The browser must fetch information from different servers and databases and then add that information to a reconstructed user interface. As this can greatly slow down a website, it is recommended to use caching, which helps store some of the content on a user's computer so that the browser does not have to retrieve as much information from different servers and databases. A good plugin that can add caching to the website is WP Super Cache, which is very easy to use and set up.

Simplify Large Posts

Loading large amounts of content for web pages requires a lot of time. As such, it is beneficial to break content apart into multiple pages so that it is easier for the website to load.

It is also important to not add videos directly to posts for this reason, as they can vastly affect the performance of a website. Instead, a video

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hosting service such as YouTube or Vimeo should be used as to not slow down the website.

Use a Content Delivery Network (CDN)

As explained previously, all web pages need to load information from different servers. The location of these servers relative to the person trying to load a web page can have a large effect on the website's performance. For example, if a server is hosted in Denmark but a site is being loaded in America, the website will be slower in America than Denmark. Using a content delivery network can fix this problem, as these are made of multiple servers all around the world that store static files of the website (such as the images used on the website). When a user goes onto the website, the network finds the server closest to them so that their experience on the website is the most optimized. MaxCDN is a good network to look at, although many other alternatives exist and should be researched.

Optimize Images

It is recommended to add a title for all images when posting them. This title is something that only the search rank will see, but it helps the search rank algorithm understand what the image actually is. It is also used for people with visual impairment to state what the picture is, as visual impairment readers will read the title of the image to others as they cannot display the actual image.

IMPROVE SECURITY

Security is vital to a website; if a website is compromised or has malicious content posted on it, search rankings can be negatively impacted.

Back Up the Website

Backing up the website can ensure that if the website was hacked, or if something happened to corrupt the website files, the website can be restored using the backup. There are many free plugins that can back up the website, with the two recommended ones being VaultPress and BackupBuddy as they

are easy to set up and use. These backups must be done regularly to ensure that the backup includes the latest changes to the website, as well as they must be hosted somewhere besides where the website is hosted. Remote locations such as Amazon, Dropbox, or Stash are good places to store the backup so that if the host server is ever compromised, the backup will not be.

Use a Security Plugin

A great security plugin is Sucuri Security, which can monitor the integrity of files and failed login attempts, and even perform malware scans. To set up Sucuri, after activating the plugin, go to the Sucuri menu in the WordPress admin.

Sucuri Menu in WordPress Admin
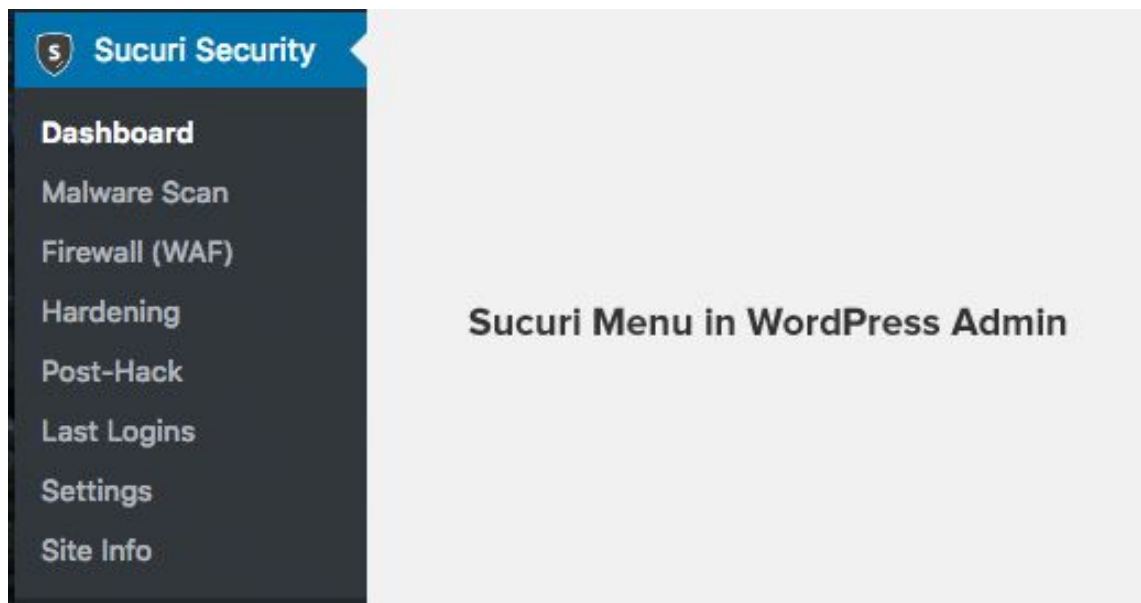
Generate a free API key to enable audit logging, integrity checking, email alerts, and other important features.

Generate free Sucuri API

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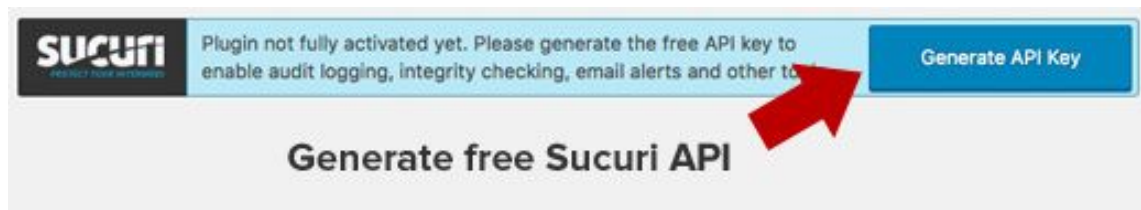
Next, click on the Hardening tab from the Sucuri menu. Go through every option and click on the "Harden" button.
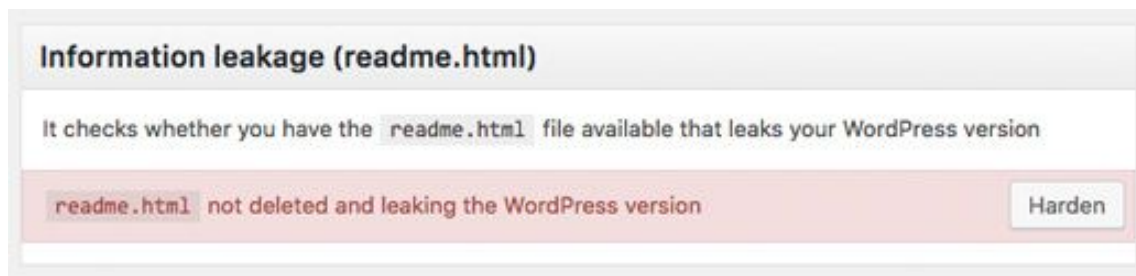
These options help lock down the key areas that hackers often use in their attacks. Most of the default settings of this plugin are good and do not require changing.

It is recommended to customize email alerts to receive alerts about changes in plugins, new user registration, and many more. These can be configured by going to **Sucuri Settings » Alerts**.

WORDPRESS PLUGINS FOR OPTIMIZING CONTENT

WordPress has a lot of different plugins that can help optimize content, with the two highest rated plugins being Yoast SEO and All in One SEO Pack. While both options can help the website improve its ranking, it is recommended for Grønt Overblik to use Yoast SEO as it has a much larger documentation base than All in One SEO Pack and is more user friendly.

Setting Up Yoast SEO

After downloading and installing Yoast SEO, it is important to configure it by going to **SEO » Dashboard** and launching the configuration wizard under the General tab. This will bring up a step by step wizard which will walk through the setup process. Because of the thoroughness of the setup process, this paper does not detail how to setup the plugin as the wizard is already the best source of information.

Add XML Sitemaps

An XML sitemap is a type of file that includes the entire structure of the website formatted as a list of every single page. It is good to have a sitemap as it can help search engines find pages faster and start ranking them.

Yoast SEO automatically creates an XML sitemap that can be found at:

`http://demo.eco-info.dk/sitemap_index.xml`

(replace *demo.eco-info.dk* with the domain name for any other websites)

Add The Site to Google Search Console

Now that the sitemap has been created, it is important to add the sitemap to the Google Search Console. The Google Search Console is a set of tools offered by Google to give website owners a look at how their content is seen by the search engine. Furthermore, it provides reports and data regarding the terms people search to find the website, how often pages of the website are clicked, and even shows how each page appears in the search results. Google Search Console will also alert users if there is something wrong with the website, such as if there is duplicate content.

In Yoast SEO, click on "Get Google Authorization Code" to be redirected to Search Console website to receive a code. Copy this code and enter it in the

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plugin settings to complete the verification.
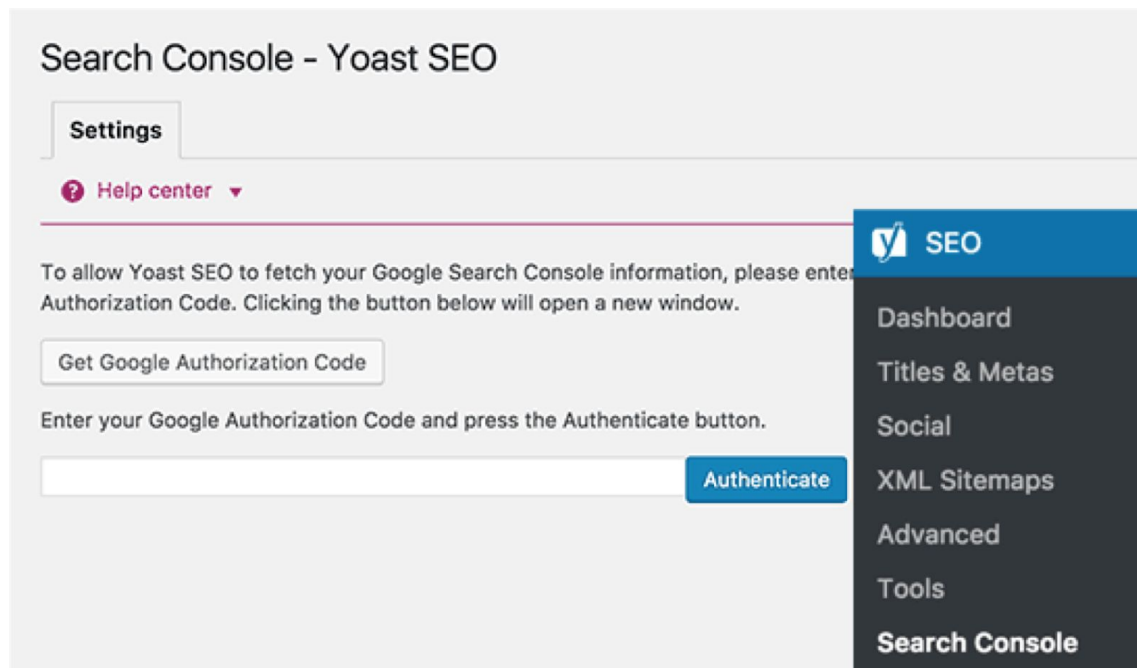
After the verification, select the website from the drop-down menu. Yoast SEO will now fetch Search Console data into WordPress and show Desktop, Mobile, and Feature Phone tabs on screen. Once the website has been added to Google Search Console, click on the Crawl menu and then select Sitemaps.
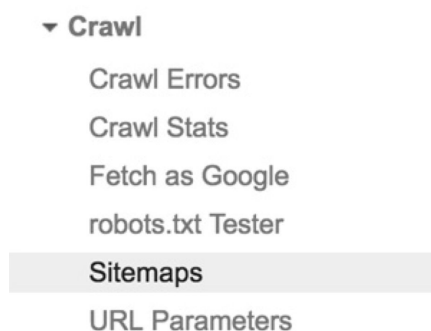
After that click on the Add Sitemap button.
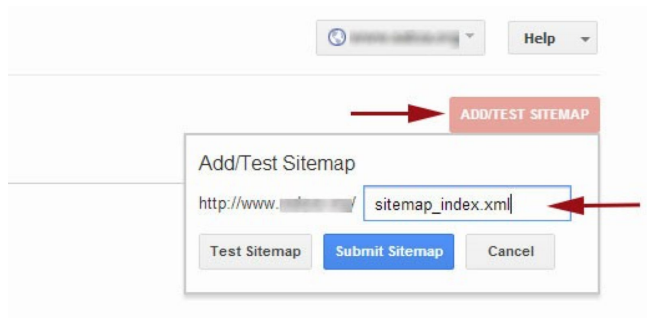
The main sitemap is sitemap_index. Once this has been successfully added to the sitemap, it will appear as pending. It takes Google some time to crawl the website, but after a few hours, it will show the number of links in the sitemap, how many of them got indexed, a ratio of images and web pages, and many more features.

It is recommended to check in with Search Console at least once a month to gather insights and monitor the progress of the website.

OPTIMIZING POSTS

Yoast SEO allows users to add a title, description, and focus keyword to every post and page, as well as a preview of what users will see when they Google the website. Use Yoast SEO when creating new content in order to ensure that the information is conveyed correctly in search engines.
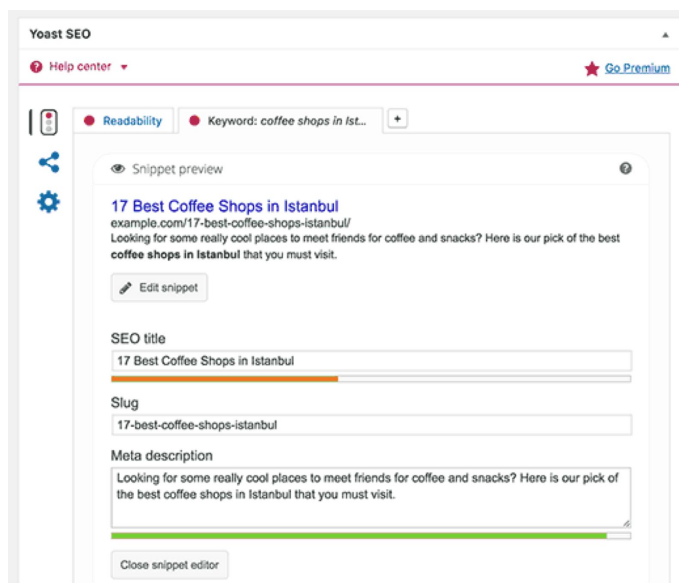
Word Choice of Posts

To decide what the best title and description should be for the project, it is important to follow some general principles. First is to select a proper focus keyword. Although called a "keyword," this should be a phrase that people who are looking to find the website will type into Google. For example, an article talking about sustainable energy might have a focus keyword of "nuclear energy expands renewable energy concept." The second major principle is to select a catchy title for content that will maximize the number of people who will be interested in clicking on the content. For example, "How to Optimize Your Website: the 10 Best Ways" is a better title than "Employ Techniques to Improve SEO." Finally, it is important to write out a meta description so that people searching on Google can see a brief description of what they will find if they click on the link. This is also important for sharing links through social media, as sites like Facebook and Twitter will display the meta description when the content is displayed.

ADDITIONAL PRACTICES

Optimize Comments

Comments are really helpful for improving SEO as they are an indication of users being engaged on the website. Because engagement is factored into SEO, it is very important to encourage commenting. Making sure that comments are optimized for SEO is also very important. This means making sure that comments are not spam and do not contain broken links that can negatively impact search rankings. A great plugin to combat spam is Akismet. It is very easy to use and is quite capable of filtering out bad comments.

It is also recommended that once the number of comments gets to a certain amount, the comments be paginated so that not all of the comments are shown on the same page. Since speed of the website affects the search ranking, it is important to make sure the website loads quickly. Loading a lot

of comments can be quite costly so it is good to only load some comments and have the other comments on different pages.
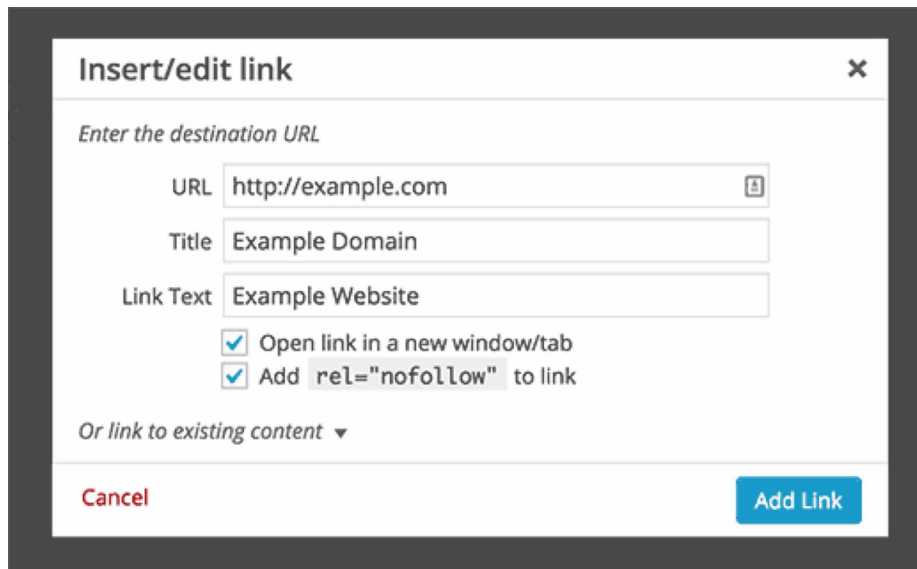
Use Categories and Tags

One of the features on WordPress is being able to sort posts on the website into categories and tags, allowing content to be organized by topic. While this makes it easier to manage information on the website, it also assists search engines in determining the website structure. Categories should be kept as broad groupings to posts, while tags should be structured as specific keywords that describe the specific contents of a post. For example, an article about growing organic potatoes might have "growing potatoes" as the tag while the category is "farming." This makes the website easier for both people and search engines to travel through the website and understand what content is contained on the website.

Use Internal Linking

It is very useful to include links to prior articles or events on the website in newer posts. For example, a newer post about how to grow potatoes organically might include a link to an older post about how to set up a greenhouse. By providing a link to other content on the website, it encourages users to see more content and spend more time on the website. Using internal linking can greatly increase traffic because of the way it gets users to view more information on the website than just a single post (similar to YouTube recommendations feature or Facebook's "topics you might be interested in").

NoFollow External Links

Since links are very important for helping determine the structure of the website, it is useful to make sure that these links are always linked back to the website. For external links, or links to websites not owned by Eco-Net, the "nofollow" attribute should be added. This ensures that the search rank algorithm does not try and follow the link to an external site and thus factor that score into the original website's score.

REFERENCES

The information and pictures in this document were drawn from many sources as shown below:

7 Landing Page Hacks That'll Double Your Sales | AWasia 2017. (2017, December 21). Retrieved from https://www.youtube.com/watch?v=FpM578W3ORw

Balkhi, S. (2013, January 31). WordPress SEO Tip for Beginners - How to Optimize Your Blog Posts. Retrieved from

https://www.wpbeginner.com/beginners-guide/properly-seo-functio
ns-wordpress-posts/

Palit, R. (2017, November 03). 7 Modern SEO Tactics That You Should Try.
Retrieved from
https://techtage.com/7-modern-seo-tactics-that-you-should-try/

Palit, R., Ribeiro, L., N., A., Kavitha, M., M., . . . Ulstrup, T. (2018, August 30).
Boost WordPress SEO - 31 Ways to Improve WordPress SEO.
Retrieved from
https://techtage.com/31-ways-to-better-wordpress-seo/

The Ultimate WordPress Security Guide - Step by Step (2018). (2018, January
02). Retrieved from
https://www.wpbeginner.com/wordpress-security/

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