

Crafting a Clear Path

Yale University Case Study into Making our Drupal Platform User-Friendly



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Yale ITS, Web Technologies, User Experience and Digital Accessibility

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Agenda

- Introductions 🙌
- Learn about our YaleSites platform
- Discover how we shifted our methodology
 - User research, Data collection, Archetype building
 - Design system, Product mindset, Roadmaps
- Explore our top five challenges and hear about how we overcame them

Introductions

About Us



Mike Tullo

UX Analyst
Platform UX Research Lead



April Tiddei

UX Analyst
Design System & Test Lead



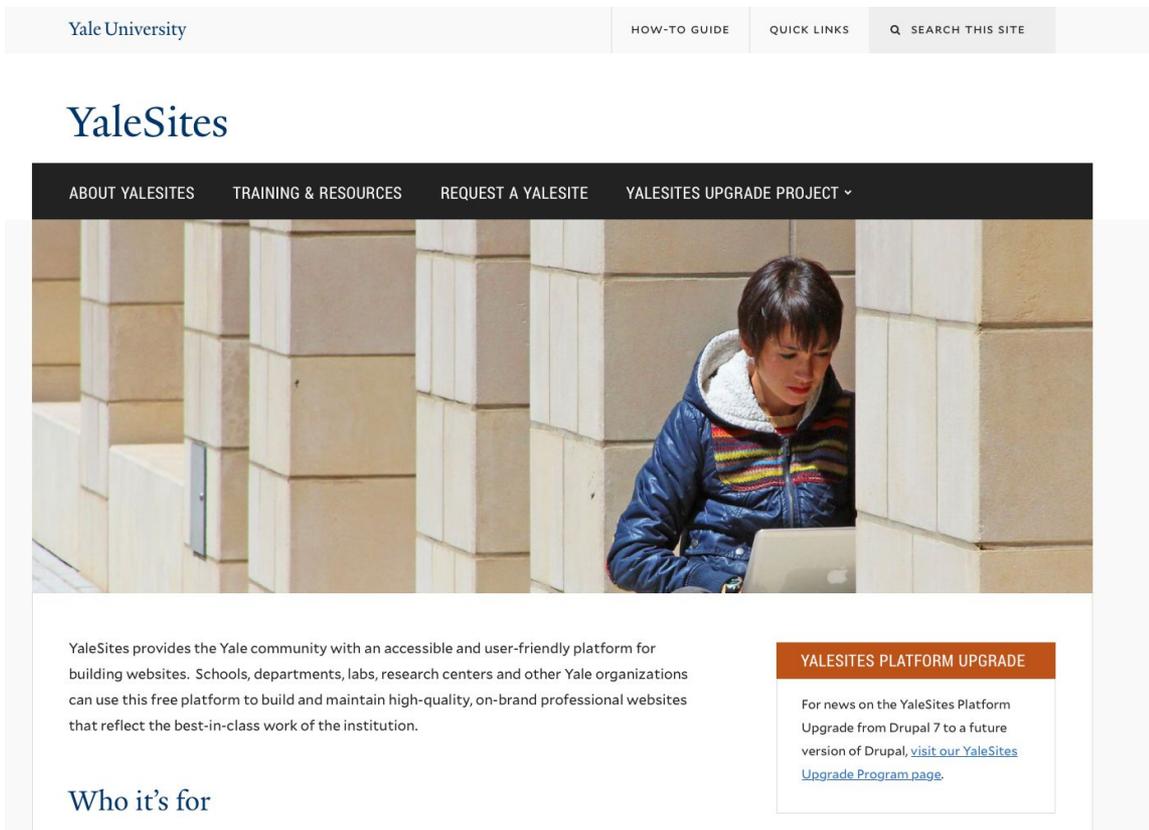
Kara Franco

Accessibility Engineer
Platform Product Manager

Project Overview

Upgrade Yale's web publishing platform, YaleSites, from Drupal 7 to most current versions of Drupal.

This was a multi-year open source project designed to develop a design system and the Drupal environment that includes monthly product releases.



The screenshot shows the YaleSites website interface. At the top, there is a navigation bar with the text "Yale University" on the left and three links: "HOW-TO GUIDE", "QUICK LINKS", and "Q SEARCH THIS SITE". Below this is the "YaleSites" logo. A dark navigation bar contains four links: "ABOUT YALESITES", "TRAINING & RESOURCES", "REQUEST A YALESITE", and "YALESITES UPGRADE PROJECT" with a dropdown arrow. The main content area features a large image of a person in a blue jacket sitting at a desk with a laptop, set against a background of stone columns. Below the image, there is a text block and a callout box.

YaleSites provides the Yale community with an accessible and user-friendly platform for building websites. Schools, departments, labs, research centers and other Yale organizations can use this free platform to build and maintain high-quality, on-brand professional websites that reflect the best-in-class work of the institution.

YALESITES PLATFORM UPGRADE

For news on the YaleSites Platform Upgrade from Drupal 7 to a future version of Drupal, [visit our YaleSites Upgrade Program page.](#)

Who it's for

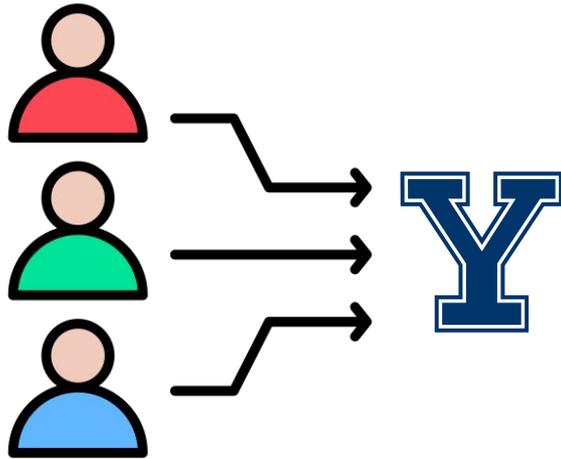
Collaboration With Four Kitchens

Collaborated with Four Kitchens to build our one-of-a-kind platform.

Content-focused approach to build a design system, curate an empowering authoring experience and discover our user needs.



YaleSites Vision



Unified

Convey a unified visual identity that aligns with Yale's larger branding and identity.

YaleSites Vision



Inclusive

Ensure an accessible, inclusive experience across all sites, devices, and platforms.

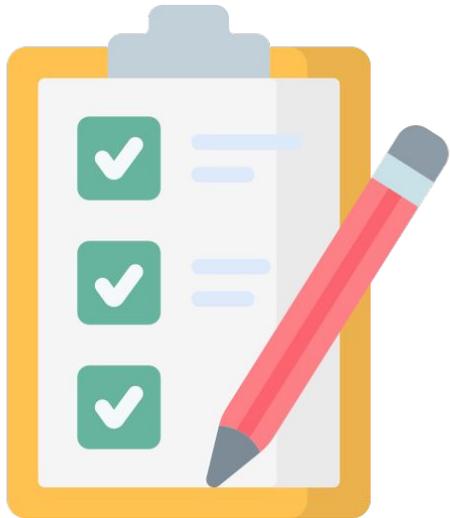
YaleSites Vision

User-focused

Deliver a meaningful user experience by providing information that is useful, usable, findable, and credible.



YaleSites Vision



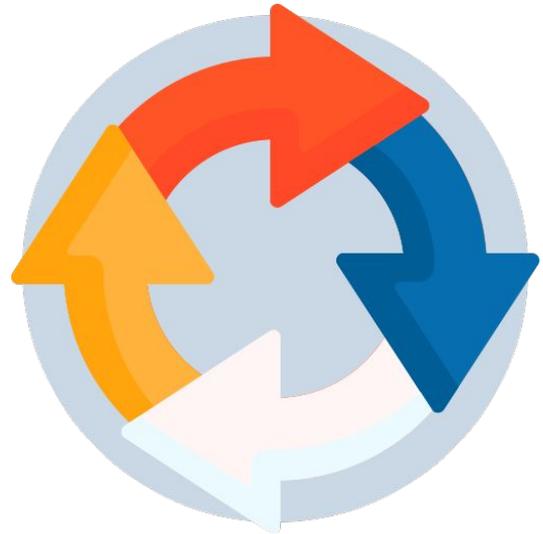
Standardized

Standardize web processes, features, and services to the Yale community.

YaleSites Vision

Sustainable

Establish the guidelines, governance and infrastructure to ensure the platform is secure and sustainable.



Methodology



The Users

User Research

Goal:

Discover the users' mindsets, needs, pain points and behaviors.

Activities:

- User interviews (18 participants)
- Survey (159 responses)
- User Shadowing (6 users)



Otter.ai

Transcriptions:

Otter.ai



Database:

Created an AirTable database with all of our insights and it allowed us to tag, filter, and curate all of our data.

Archetypes

3 Main User Categories:

- Knowledge Level
- Role & Responsibilities
- Approach

Stacking Archetype: Combining one archetype from each category creates a more comprehensive archetype.



The Inspired

"I saw a feature on a website that I loved and I wanted it for my site but due to lack of resources we couldn't easily add it."

The Inspired YaleSites user builds features beyond what is required rather than a need for a feature. They are willing to get to build it and they don't care if anyone else has it.

They provide support and does what they are asked to be incorporated into YaleSites

Resources

Dedicated Time
The amount of time the user has to work on their YaleSite(s).
[Progress bar: 2/5]

Team Structure
The size of the team this user is part of when working on their YaleSite(s).
[Progress bar: 2/5]

Ingenuity
The ability of the user to get a task done.
[Progress bar: 2/5]



Team Player

"My role wasn't originally to keep our website updated, but I was the only one who could, so I took on that responsibility."

The Team Player YaleSites user is always willing to take on a project or additional responsibility. They welcome opportunities to learn and improve their skill sets.

Often a Team Player user can suffer from imposter syndrome where they don't consider themselves knowledgeable.

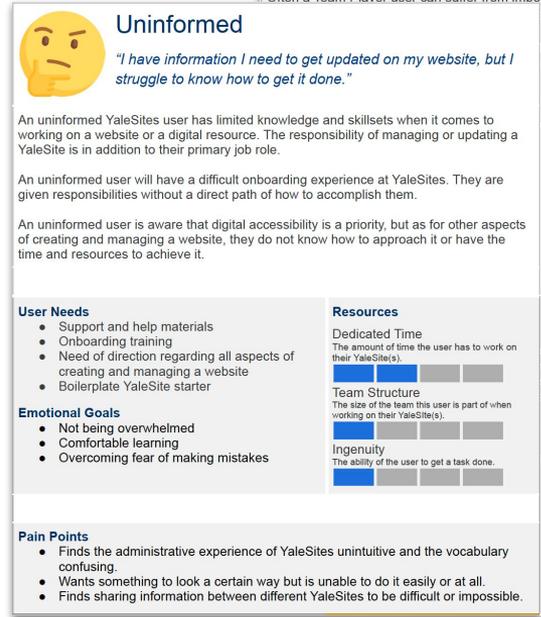
They know about digital accessibility but struggles to implement it on their YaleSite.

Resources

Dedicated Time
The amount of time the user has to work on their YaleSite(s).
[Progress bar: 2/5]

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[Progress bar: 2/5]

Ingenuity
The ability of the user to get a task done.
[Progress bar: 2/5]



Uninformed

"I have information I need to get updated on my website, but I struggle to know how to get it done."

An uninformed YaleSites user has limited knowledge and skillsets when it comes to working on a website or a digital resource. The responsibility of managing or updating a YaleSite is in addition to their primary job role.

An uninformed user will have a difficult onboarding experience at YaleSites. They are given responsibilities without a direct path of how to accomplish them.

An uninformed user is aware that digital accessibility is a priority, but as for other aspects of creating and managing a website, they do not know how to approach it or have the time and resources to achieve it.

User Needs

- Support and help materials
- Onboarding training
- Need of direction regarding all aspects of creating and managing a website
- Boilerplate YaleSite starter

Emotional Goals

- Not being overwhelmed
- Comfortable learning
- Overcoming fear of making mistakes

Pain Points

- Finds the administrative experience of YaleSites unintuitive and the vocabulary confusing.
- Wants something to look a certain way but is unable to do it easily or at all.
- Finds sharing information between different YaleSites to be difficult or impossible.

Resources

Dedicated Time
The amount of time the user has to work on their YaleSite(s).
[Progress bar: 2/5]

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[Progress bar: 2/5]

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[Progress bar: 2/5]

Archetypes

Data Tracking: The method of tracking user data enabled us to identify unique data points specific to each archetype.

Decision-making: Project decisions were made based on the impact of the archetypes.

TYPE		Count														
User Needs		17														
1	Accessibility Audit Tool	13	11	9	9	17	17	17	2	2	2	4	14	6	85.71%	
2	Updated Look and Feel	21	11	1	11	9	9	17	17	17	2	2	2	4	5	71.43%
3	Content Strategy	11	1	1	1	1	1	11	11	2	7	7	6	4	57.14%	
4	Support	10	6	1	13	16	3	3	3	5	12	10	10	4	57.14%	
5	Managing Content	11	1	11	11	11	2	4	14	6	6	6	6	3	42.86%	

Question	SWOT (...)	Answer	User Needs & Paint Points
Can you describe the process of maintaining your site?	Strengths	It can be frustrating because when we want to edit the look of our site, we go in and change the CSS. Then, because of the review process and how slow it can be. We created a dev environment and took the time to make everything look perfect. But because the review process is so ...	Updated Look and Feel
Can you talk about ways in which YaleSites isn't supporting your needs?	Weaknesses		Working with CSS
			Editing in HTML

Ongoing User Involvement



We organized a series of user activities to ensure we were on the right track.

- Impression Testing
- Focus Group
- User Acceptance Testing
- Early Access
- Feedback Tracker

By actively involving our users in the development process, we were able to create a user-centered product.

Session 3 YaleSites Authoring User Focus Group

Agenda

- A11y demo of tools
- Catch up from previous materials
 - Creating and editing content
 - Forms
 - Sneak peek of basic components*

Users are divided into smaller groups that worked at different speeds.

**Session 4 will be a deeper dive of sneak peek components. The user insight for these components from this session will be incorporated into session 4 recap.*

Participants

- 11 users attended
- Most users are advanced
- Continuing efforts of adding a beginner/uninformed group
- In September we will be adding a student group users

Group Goals

- Include the YaleSite owners and site builders throughout this project
- Open conversations about their approach, process, needs and roadblocks
- Review in development platform features for feedback

Session Goal

The goal of our up on previous groups did no

Action Items

- Continuing beginner/u
- Discuss bri
- AirTables
- Reduce am
- future sess

Overview and Timeline

	March	April	May	June	July
Test Planning					
Test Case / Scenario Writing					
UX Testing					
Accessibility Testing					
Performance Testing					
End-to-end Testing					
Fixes					
User Acceptance Testing					
Fixes					
Soft Launch					

ID	Title	Status	Assignee	Category	Date
1	UX: "The 'Cancel Button' text would be much more beneficial to the site builder if it were to be left unclickable. It's counterintuitive to always have to click up to be able to begin the editing process. Can the horizontal toolbar be pinned...	Feedback	Julian	UX	July 5, 20
2	Feedback: Embed	Feedback	Mika	UX	July 5, 20
3	Quick Links Button Size	Feedback	Agile	Front-End	July 5, 20
4	Character Limits	Feedback	Don + Jerrisa	Front-End	July 5, 20
5	Specify Top of Page Boxes	Feedback	Eamon	UX	July 7, 20
6	Additional options	Feedback	Eamon	UX	July 11, 20

Inclusive Design

Fable is a user testing service that gains insights from disabled users.

Assistive Technologies tested:

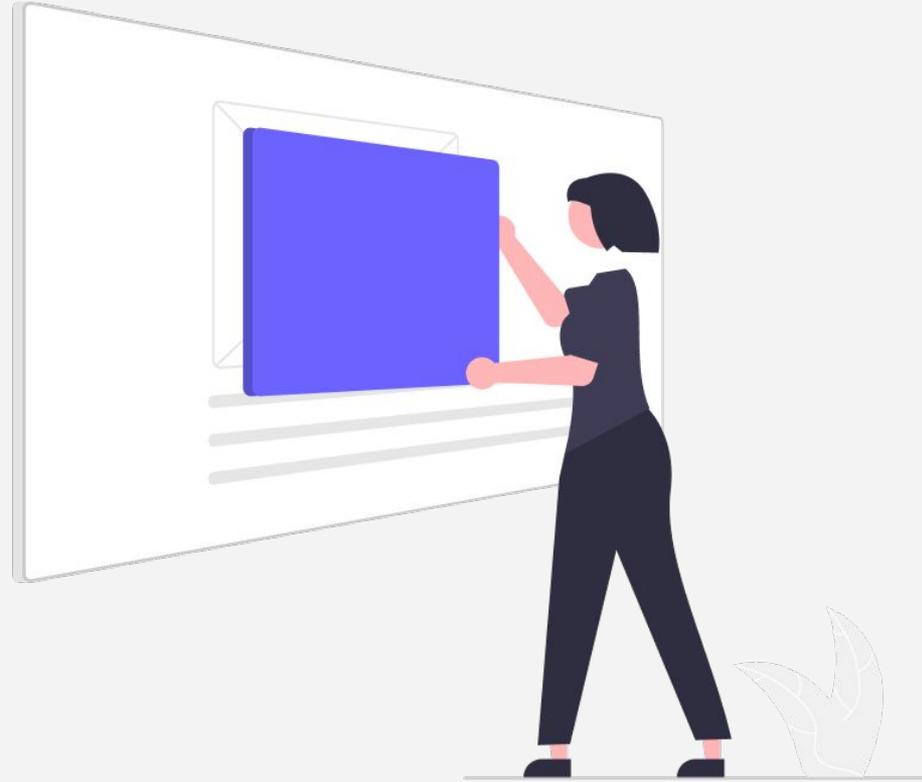
- Screen Reader (JAWS, NVDA, VO, Talkback)
- Screen Magnification (Magnifier, High Contrast)
- Alternative Navigation (Dragon, Switch Access)

User Testing performed:

- 78 Self Guided Tasks
- 46 User Interviews
- 13 Prototype Reviews



The Product

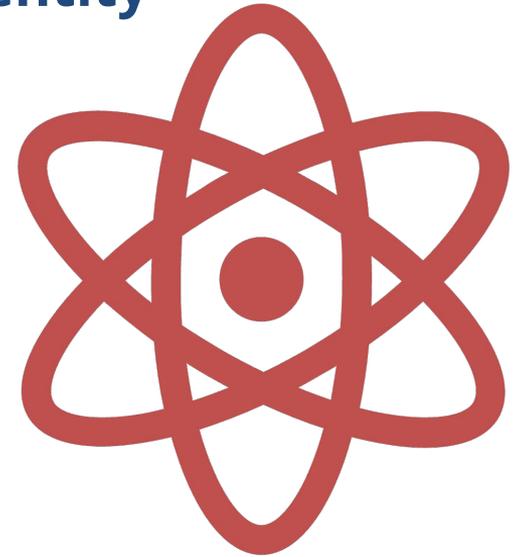


Developing a Design System

The Yale Design System unifies brand and identity

Based design system on the atomic design pattern:

- **Tokens / Atoms:** typography, spacing, links
- **Molecules:** card, text block, image
- **Organisms:** card collections, menus, galleries



Product Mindset

Product Vision and Roadmap:

- Goals and vision for the platform align with user needs.
- Development and public roadmaps.

User-focused:

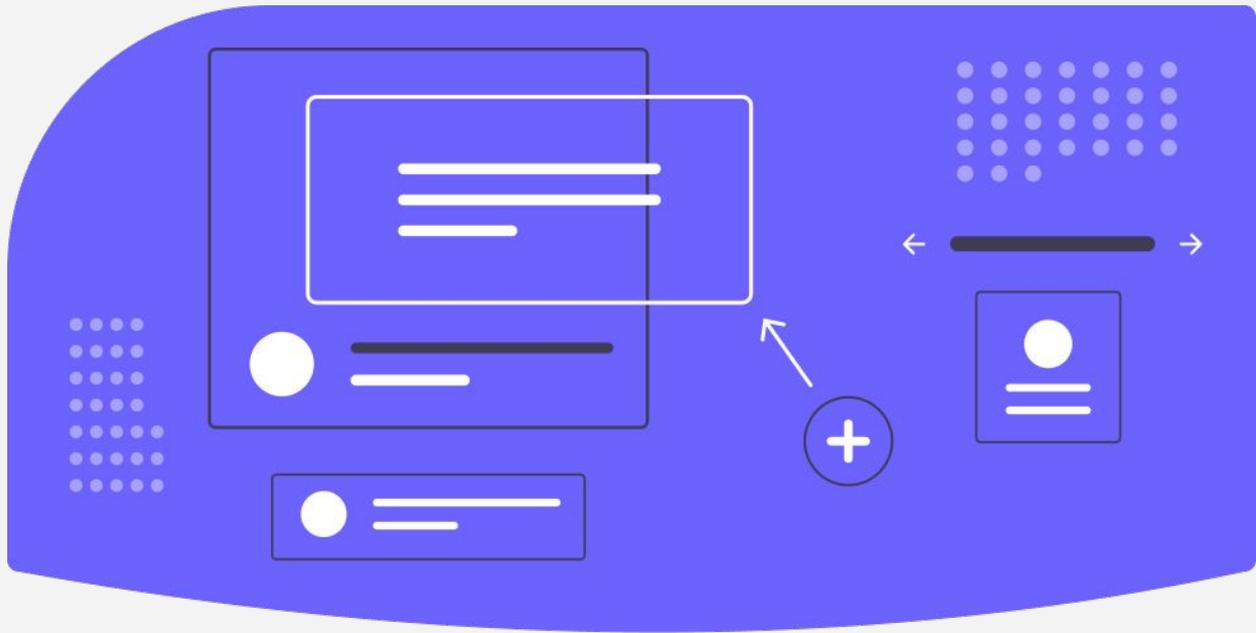
- Providing resources to site builders throughout our iterative product process (release notes, trainings, documentation).

Iterative Improvements:

- Ongoing improvements ensures that platform adapts to user needs and we outshine competitor platforms.



Top 5 Challenges



1. Design System

Challenge - Transition & Unity

Crafting a design system that adheres to Yale Identity and Accessibility Standards

User Story: As a site builder, it's important that my design aligns with Yale's identity while also ensuring accessibility to align with standards.

Challenges:

- Redefining digital identity while maintaining UICL standards.
- Agreement and consensus in fast-paced agile development posed difficulties.
- Expanding design system to impact other applications and teams.

Prior to the platform upgrade, we relied on a Bootstrap UI component library to streamline our interface design and ensure consistency across our web applications.



*Was maintained by
Accessibility team*

Solution- Reviews & Governance

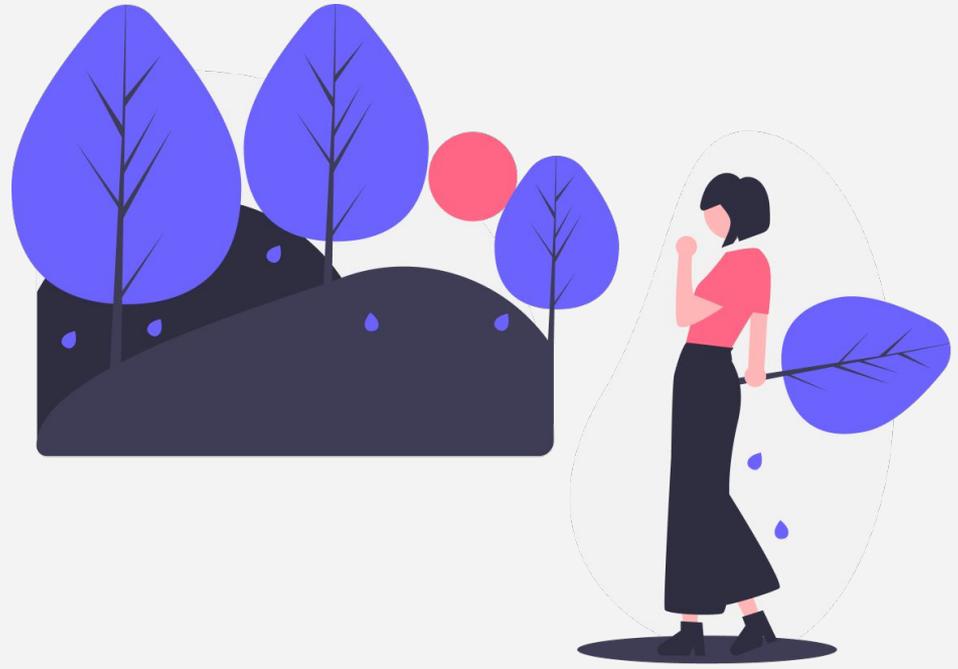
Design and accessibility reviews in pull requests, bi-weekly meetings with design stakeholders (discuss typography, color, spacing).

Embraced **iterative design** (multiple passes) and gave time for reviews and feedback in sprints.

Governance Committee meets quarterly to review roadmap and discuss design system.

Ongoing: Expand design system (React, Vanilla)

Storybook & Github



2. Custom Design

Challenge - Custom Design

Working with CSS was identified as significant pain point for YaleSites users.

User Story: As a site builder, I need to apply custom CSS to my site to elevate its visual appeal and convey our unique style.

Supporting UX Data: 50% of all users interviewed and 75% of The Expert archetype mentioned challenges with 'Working with CSS'.

User Quote

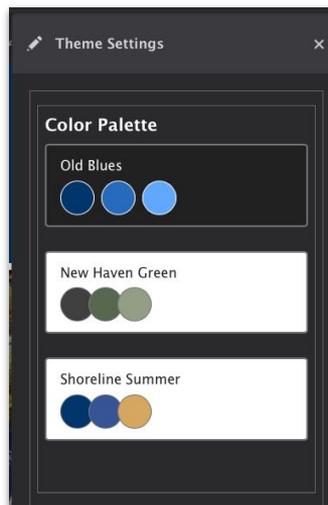
"We've added more CSS to the site, which has made it somewhat more challenging at times to edit things"

Solution - Levers and Dials

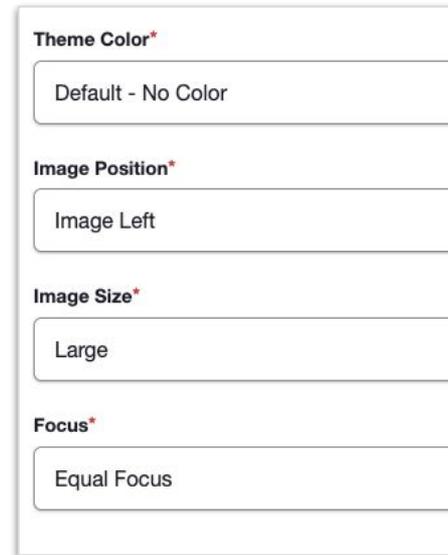
Users can customize their YaleSite's appearance through larger theme choices, and smaller component-specific choices.

Levers: Theme settings which target your sites global header & footer, and call-to-actions.

Dials: Design options available at the component level to change its look based on which color palette you choose as a lever.



*YaleSite Theme Setting
Color Palette Options*



*Spotlight Content Block
Design Options*

Lever - Theme Settings

dev-yalesites-mt927.pantheon.io

Content Settings People Reports

Edit Mike's Sandbox Test

Manage Settings Edit Layout And Content Unpublish Theme Settings More Actions mt927

Yale University

Events News google Search this site

YaleSites Demo

General Page Resource Library Community Trainings Find Support

Action Banner Heading

Call to action

Dial - Block Design Options

3. Paragraphs vs. Layout Builder

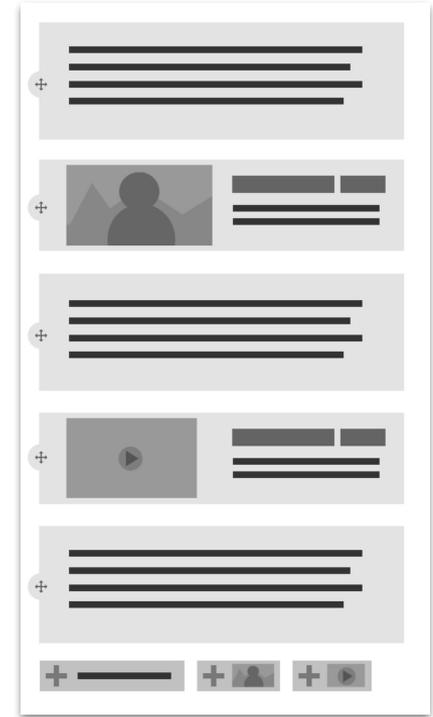


Challenge: Initial Feedback

In 2021 our team decided to use Paragraph due to development challenges with Layout Builder and possible code refactors.

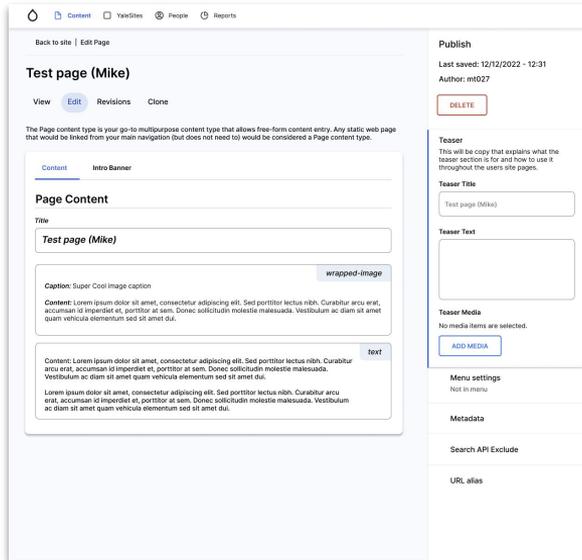
User Story: As a site builder, being able to see my site as I build and edit content is essential for streamlining my process and achieving my goals.

Supporting UX Data: Initial feedback was layout paragraph did not provide the desired experience site experience like Wordpress and Squarespace.

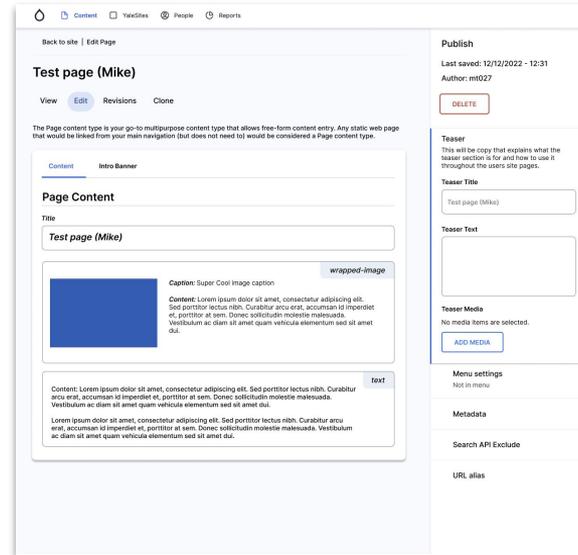


Pain Point Example

Through user testing, users shared that building a page in the back-end did not give them an **accurate representation** of their content.

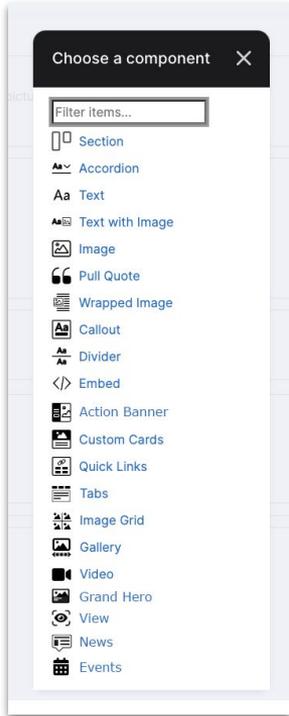


YaleSites Backend via Layout Paragraph

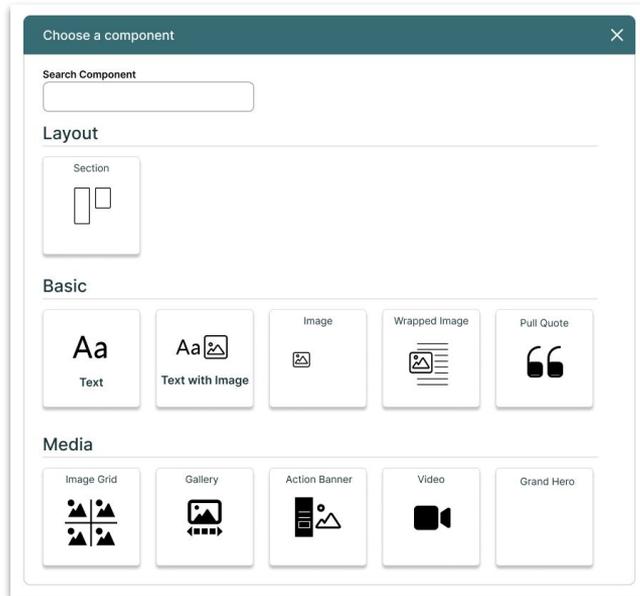


Proposed Wireframe mockup

Pain Point Example



Component Picker via
Layout Paragraph



Proposed Component Picker Mockup

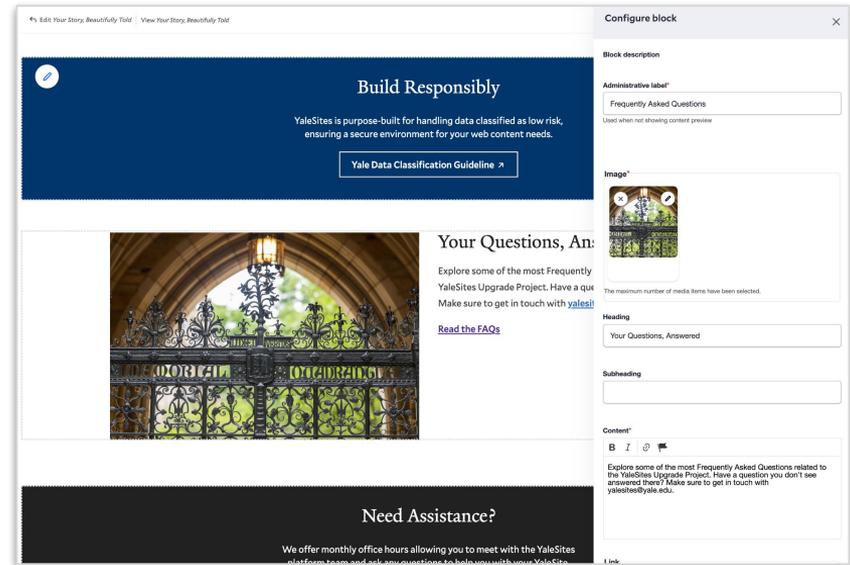
Feedback from users indicated that **choosing a component is a challenging task** due to the learning curve associated with a component-based design system and the small preview images in layout paragraphs.

Solution: Layout Builder

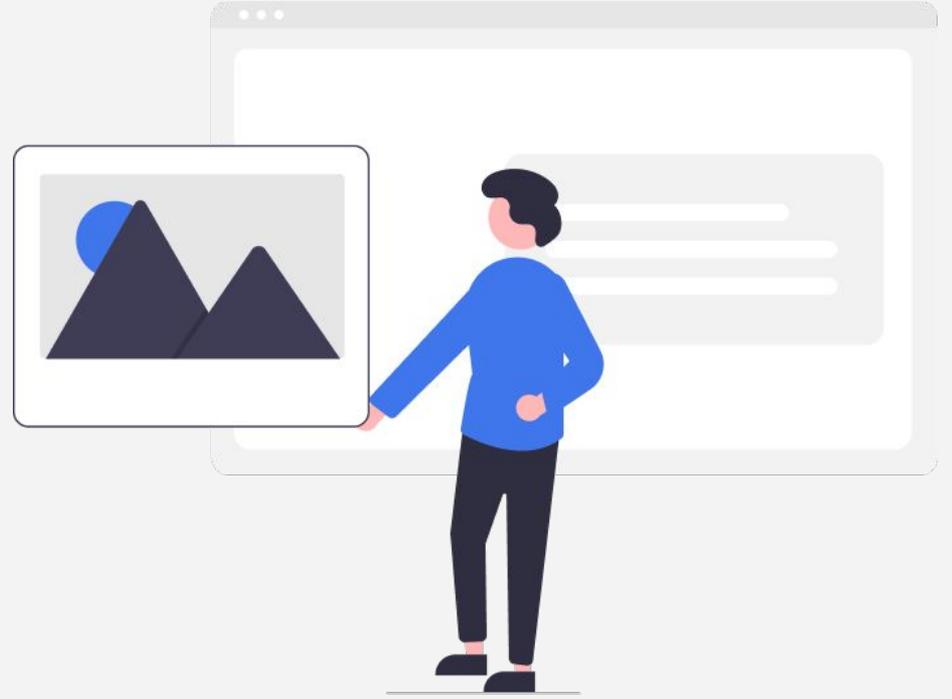
Fast forward to 2023, our team started receiving more feedback about the building experience, and we decided to revisit the discussion on Layout Builder.

Module Solutions: Over time, several modules such as Layout Builder Browser and Layout Builder Permissions have gained popularity for addressing key user pain points.

Stakeholder Buy-in: In a 6-week transitional period, we refactored our design system in Drupal from paragraphs to blocks.



Solution: Layout Builder



4. Dynamic Content

Challenge - Manual Work/Maintenance

The top 3 user pain points around content creation were lack of content solutions, manual work, and managing content.

User Story: As a site builder, I continually create and update content across my site to ensure it remains up-to-date.

Supporting UX Data:

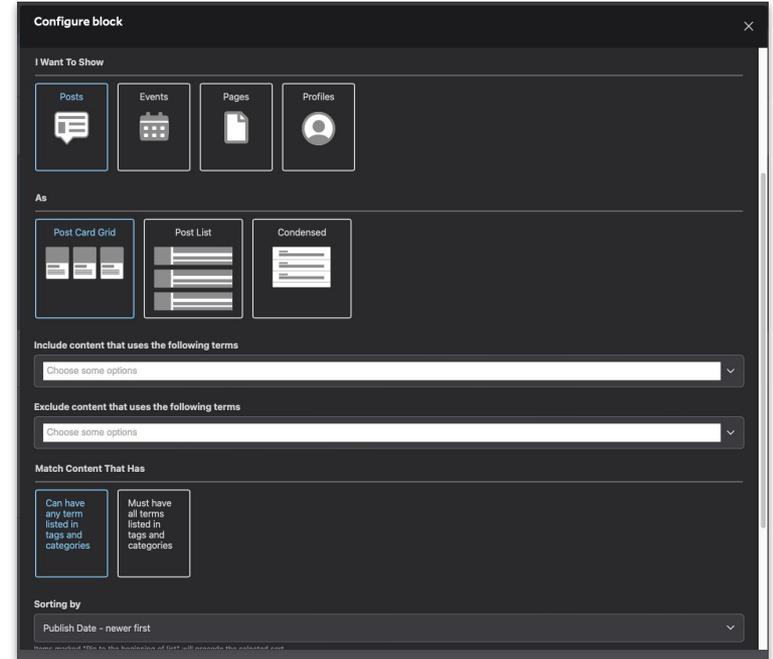
In user interviews, 50% cited a lack of content solution, 50% noted excessive manual work, and 45% struggled with content management.

User Quote

“Entering all the content for my site would take up so much time, it was crazy. At some point, my site editors were just linking out to external sites.”

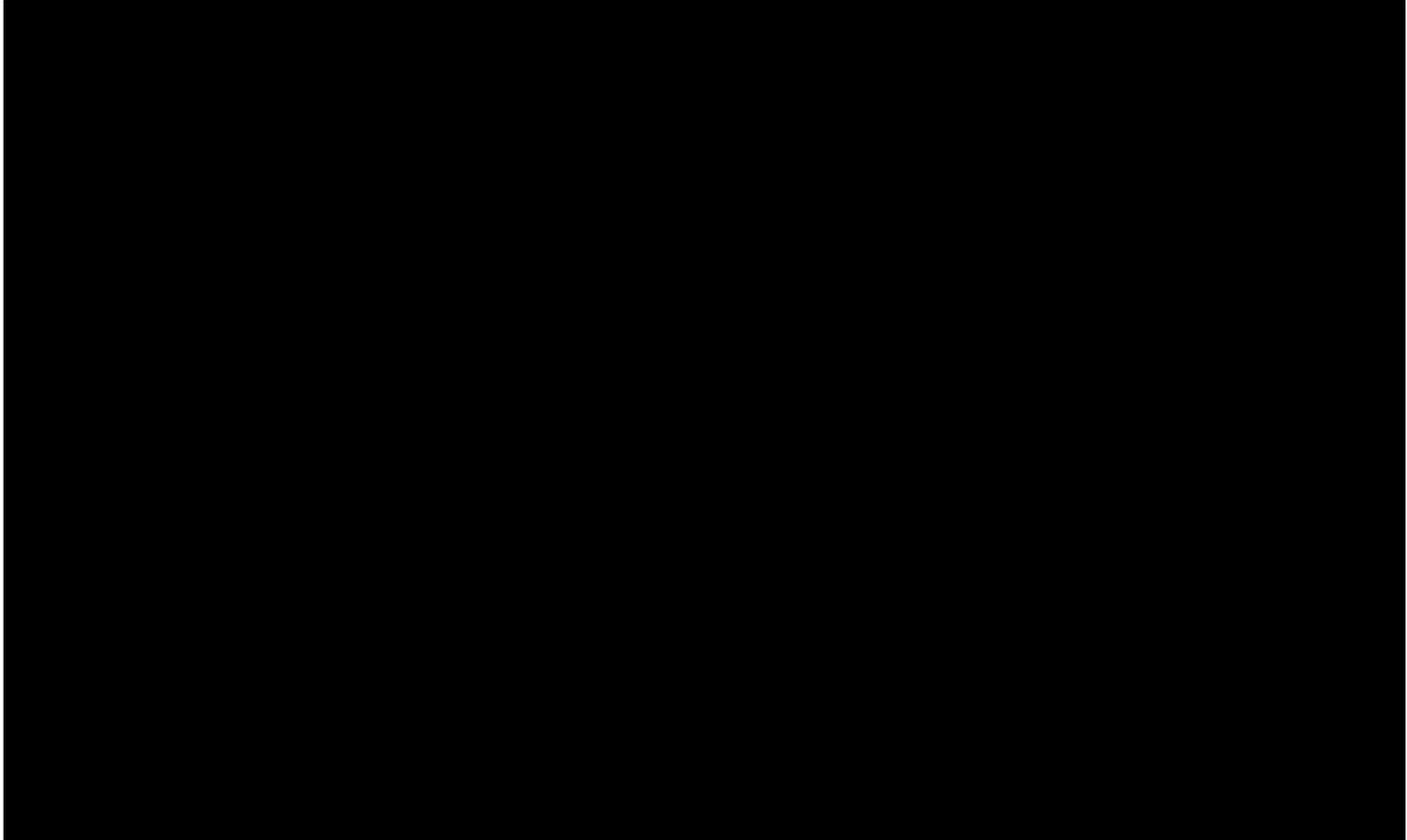
Solution - Flexible Dynamic Content

While our platform supports a limited number of content types, our taxonomy system allows users to **present their content as desired**, using our view content block.

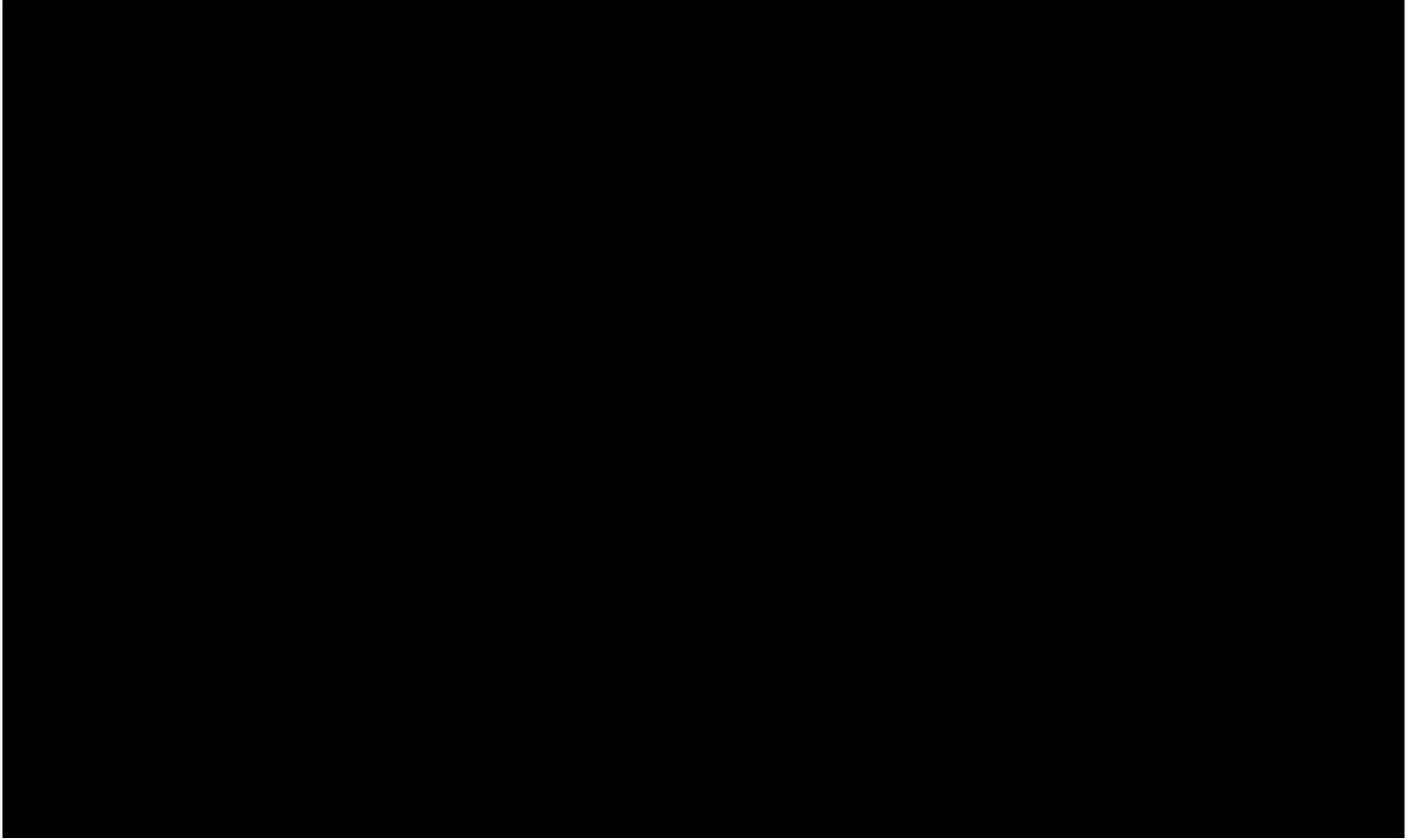


YaleSites Custom View Block

Solution - Custom View Block



Solution - Reusable Blocks



5. Admin Theme



Challenge - Custom Admin Theme

We identified a user need for an admin theme that reflects our Yale Identity and provides an intuitive UI.

User Story: As a site builder, I require an intuitive admin interface that reflects Yale's identity, making navigation seamless and instilling a sense of Yale.

Challenges:

- Customizing themes led to significant tech debt.
- Creating new blocks required admin theme CSS updates for consistency.
- Code for displaying custom admin themes became non-scalable.

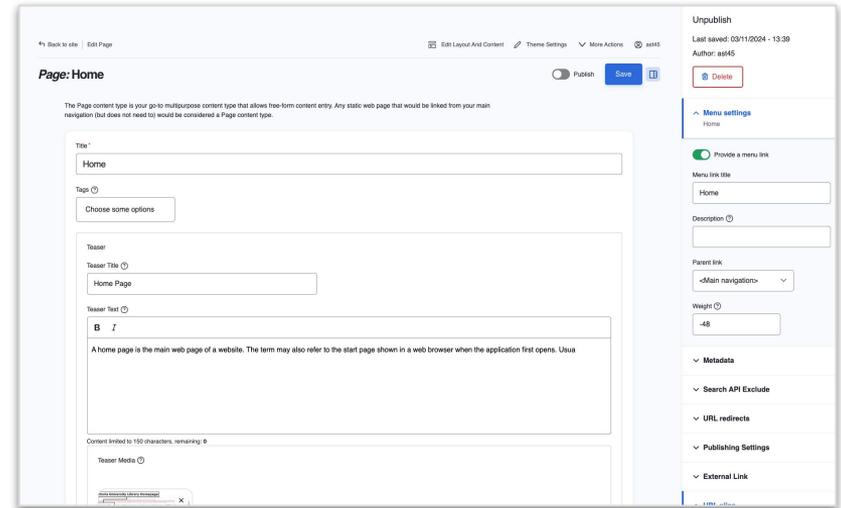


Solution- Gin Theme + Tweaks

Gin Theme provides a simplified admin experience, incorporating on-brand blue accent colors for an enhanced visual identity.

Gin Theme

- Better accessibility: theme displays based on user preferences in OS.
- Cleaner code: we removed 1,126 lines of code 🐱.



Gin Theme + Tweaks

Future Improvements and Key Insights

Key Insights

- The importance of in-depth user research, involving users throughout the development process and testing with disabled users to ensure inclusivity.
- The creation of a design system based on the atomic design pattern to unify brand and identity.
- Adopting solutions which initially may require more time and resources can ultimately serve best our users in the long run.
- The ongoing commitment to iterative improvements, user-focused development, and extending the design system to other applications.

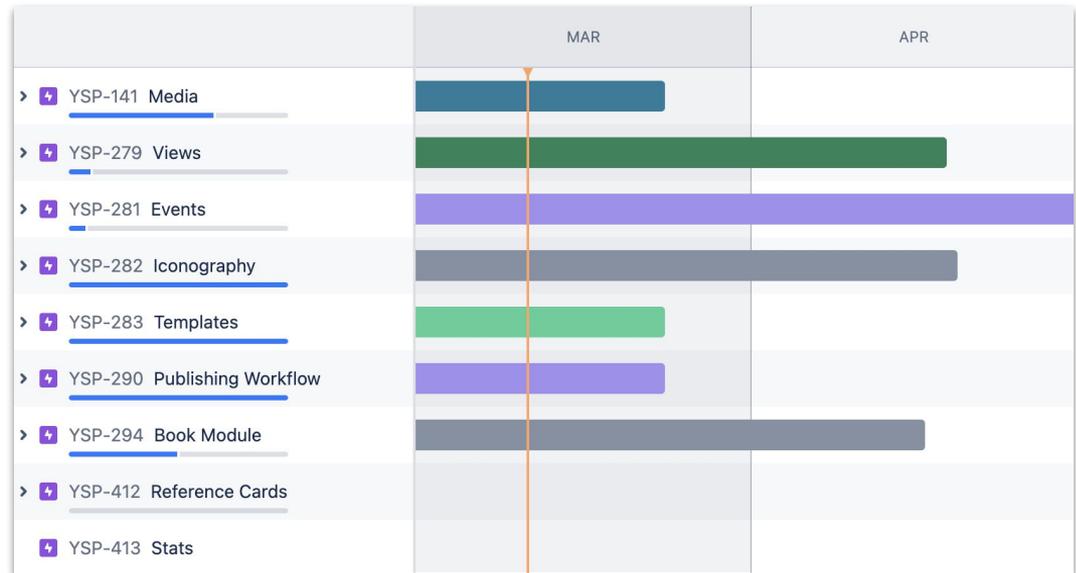
Future Improvements

Authoring Experience

- Content Templates
- Publishing Workflow
- Event Integration (Localist)
- View Block Iteration
- Dashboard

Extending design system to React and vanilla versions

AI solutions (page summaries, AI search, document/image finder)



Thank you!

Questions? Comments?

Important Links

[YaleSites Website](#)

[YaleSites Product Roadmap](#)

Open Source Repositories

- [YaleSites Platform \(Main Drupal Project\)](#)
- [YaleSites Component Library \(Twig Component Library\)](#)
- [YaleSites Atomic \(Drupal Theme\)](#)