

Creating a Community-Centric User Experience of the New Haven Building Archive

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Abstract

Upon first glance, the architecture of a built environment appears to be static: the façades seemingly withstand the ticking of time and the structures, solemn and resolute, appear to provide a backdrop to, rather than be an active participant of, the dynamism of life. However, there is a life cycle to buildings: there is birth, there is death, there is renewal, and perhaps most importantly, there is interaction between humans and the vernacular spaces. Those who live in them, those who pass by them, and those who may even notice them from afar each have their own unique experiences with the buildings. It is only fitting that the richness of these personal encounters, each a little different from the other, is also re-created in Yale's existing New Haven Building Archive (NHBA). By implementing features that allow users to contribute media and comments to existing building entries, users can experience a greater sense of community on the virtual platform and the archive can more authentically capture the living and changing vibrancy of the New Haven cityscape.

1 Introduction

NHBA (nhba.yale.edu) is a digital collection of architecture in and around the Yale University campus, compiled from over a decade of research conducted by undergraduate students. Elihu Rubin, Associate Professor of Architecture and American Studies, spearheaded the initiative in an effort to document the rich architectural and urban history of New Haven and to increase engagement between the community and their built environment. With the help of Yale's Digital Humanities Lab, Rubin's vision was realized in a desktop and mobile-friendly website featuring hundreds of encyclopedia-like entries of researched buildings, a visual map of buildings filterable by style, era, usage, and neighborhood, and a glossary of architectural terms for quick reference. The NHBA remains an important educational tool for students enrolled in Rubin's "American Architecture and Urbanism" and "Urban Life and Landscape" courses.

However, there is a sense of fixed stagnancy to the existing version of the website that does not quite capture the true spirit of a "living archive that invites new layers of information, imagery, and stories."¹ This project aims to move the website closer to that of a "living archive" by reconfiguring and supplementing the user experience with features that promote a sense of community. By allowing users to contribute documents and add comments to the buildings uploaded by individual researchers, the entries are now ever-changing collections of personal encounters and experiences with the Yale campus and the greater New Haven city.

2 Contributing Media to Existing Buildings

On the existing website, each building entry features a gallery of images uploaded by the researcher. In collaboration with Professor Rubin, we identified that one target of creating a community-centric user experience would be to allow users, in addition to the researcher/owner of the entry, to contribute media to the gallery. Whether it is a photo they snapped from a casual stroll or an archival document clipped from their own research, users can contribute to the visual documentations of a building by uploading their images, captioning them, and submitting them for approval.

2.1 Cohesion of Design

The form-based modal maintains the design and user-experience found in other flows on the website with the goal of maintaining a sense of cohesion and familiarity. The modal pop-out is the same "lightbox" design as the pop-out for seeing the images of the gallery in full dimensions. In the modal, the *Image Grid* component, which allows users to upload and caption photos, specifically mirrors that found in the "Adding a New Building" flow that users encounter

¹'New Haven Building Archive', n.d. [Online]. Available: <https://nhba.yale.edu/about>. [Accessed: 28-April-2020].

when creating a new entry for their researched building. The form is altogether simple as well, only requiring the user to input their name and e-mail address as points of contact, thus reducing the number of requests for personal information that might detract them from using the feature.

2.2 Spam-Proof Safety

In addition to rigorous form validation, a CAPTCHA challenge is also included to prevent potential spam and security attacks on the website. This is especially pertinent because we do not authenticate the user before allowing them to contribute to the media gallery. We felt that it would be an unnecessary barrier to maximizing community engagement since a user need not be as active as a researcher, but could just be a curious citizen simply interested in reading and occasionally contributing to the archival entries.

We also added in an admin review process for the contributed media. Once a user submits their contribution request in the modal form, the admins of the website can review them in the pages that only they have permission to access. In the review portal, all buildings with contributed media are listed, each row featuring a gallery of the building's image contributions and a side-box component listing the meta-data: the contributor name and contact information, date of submission and date of review, review status, as well as two buttons to either "Accept" or "Reject" the contribution.

2.3 Augmenting Existing Database Structures

The website is supported by a React framework, hosted on an Express server, and populated with data from a MongoDB database. In order to add contributed media to buildings, the existing database structure for a *Building* must be changed. Within the *Building* object, the schema of an image gallery for an existing building, titled *images*, is represented as a list of two-keyed dictionaries containing the filename and caption. The *contributed_media* was added into the existing *Building* schema to hold the meta-data, along with the images and captions, of the media submitted by users. This is the meta-data displayed on the admin portal. Once an image has been accepted by admin, the filename and caption (appended with an attribution message) is then added to the *images* list, thus completing the entire flow. Finally, on the building entry page, the approved media contributions will be displayed in the gallery box, along with the images originally uploaded by the researcher.

```
db.building = {
    building_name: String ,
    ...
    images: [
        {
            filename: String ,
            caption: String ,
            ...
        }
    ]
}
```

```

        }
    ],
contributed_media : [
{
    filename: String ,
    caption: String ,
    contributor_name: String ,
    contributor_contact: String ,
    decision: Boolean ,
    reviewed: Boolean ,
    reviewed_at: Number ,
    submitted_at: Number ,
}
]
}

```

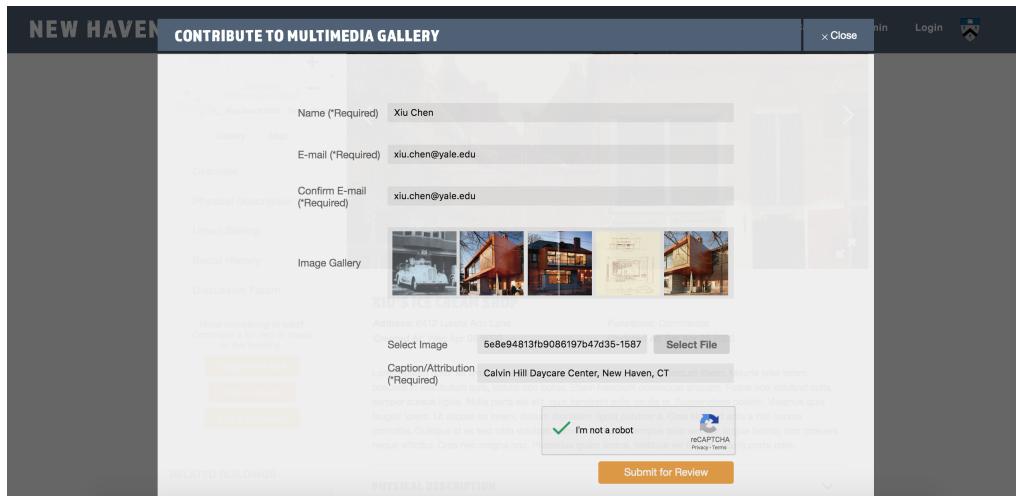


Figure 1: Users can contribute to a building’s gallery by uploading and captioning images along with entering their contact information. The CAPTCHA challenge above the “Submit” button helps prevent spam responses.

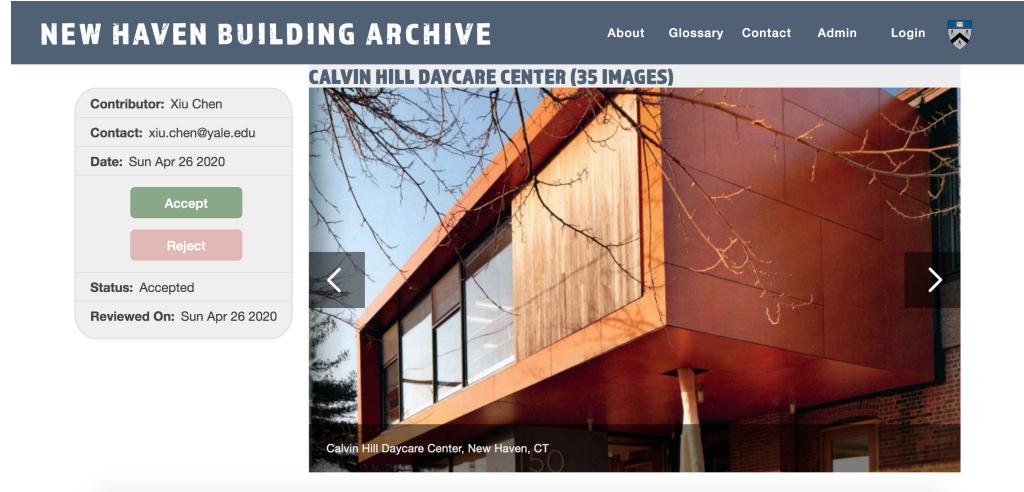


Figure 2: After a contribution request has been submitted, admins can review them.

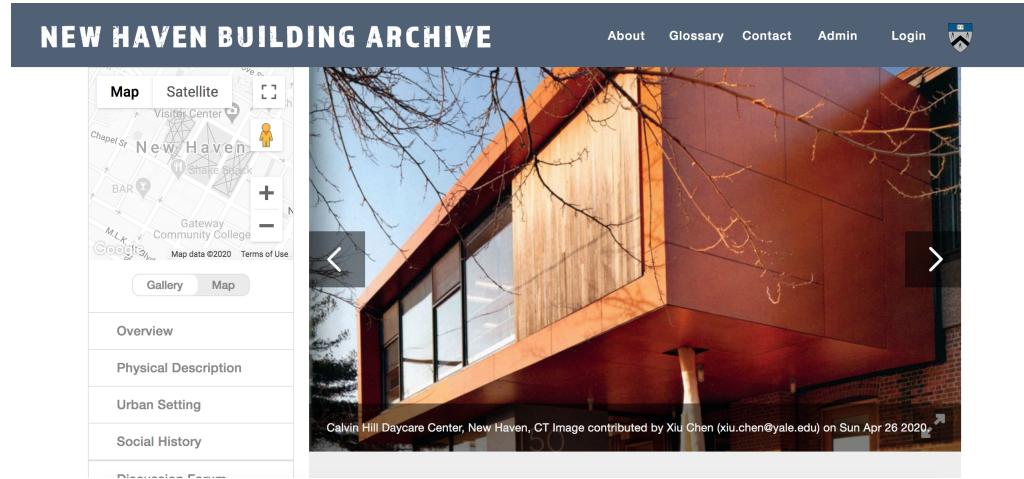


Figure 3: Once the images have been accepted, they are appended to the existing gallery along with an attribution message.

3 Discussion Forums for Existing Buildings

In a similar flow, users can contribute comments to a building and view any on-going discussion through a forum-like display. A form-based modal, similar to the one for contributing images, is used as the main interface of comment submission. Users can type out their contributions in a rich-text format and submit them after providing their name and contact information and verifying

the CAPTCHA challenge. The data structure is also augmented accordingly:

```
db.building = {
    building_name: String ,
    ...
    comments : [
    {
        comment: String ,
        contributor_name: String ,
        contributor_contact: String ,
        decision: Boolean ,
        reviewed: Boolean ,
        reviewed_at: Number ,
        submitted_at: Number ,
    }
]
}
```

Admins can review these comments in the same approval process to that of contributed media. Once a comment has been approved for a building, the building page will have an additional drop-down, “Discussion Forum,” that displays these comments, along with the user’s name and point of contact.

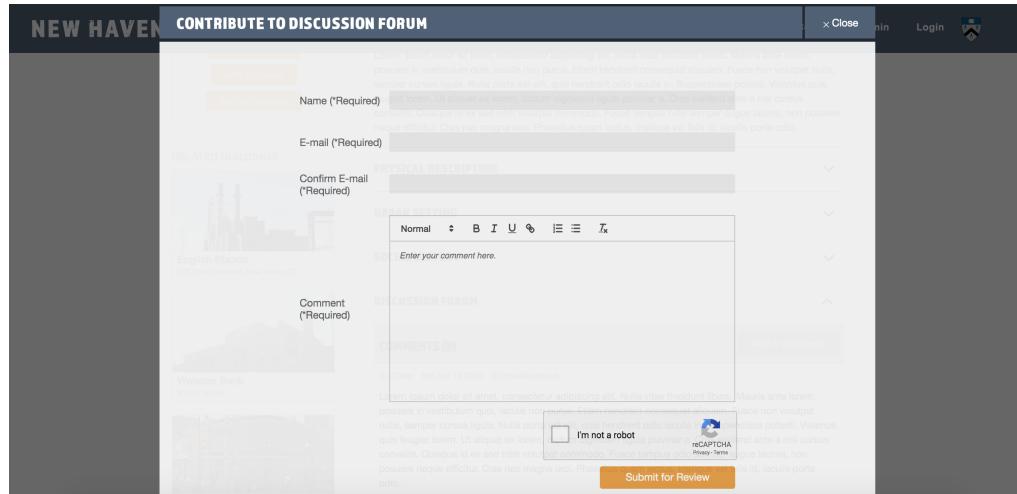


Figure 4: A modal displaying a form allows a user to submit comments in a rich-text format along with their name and contact information.

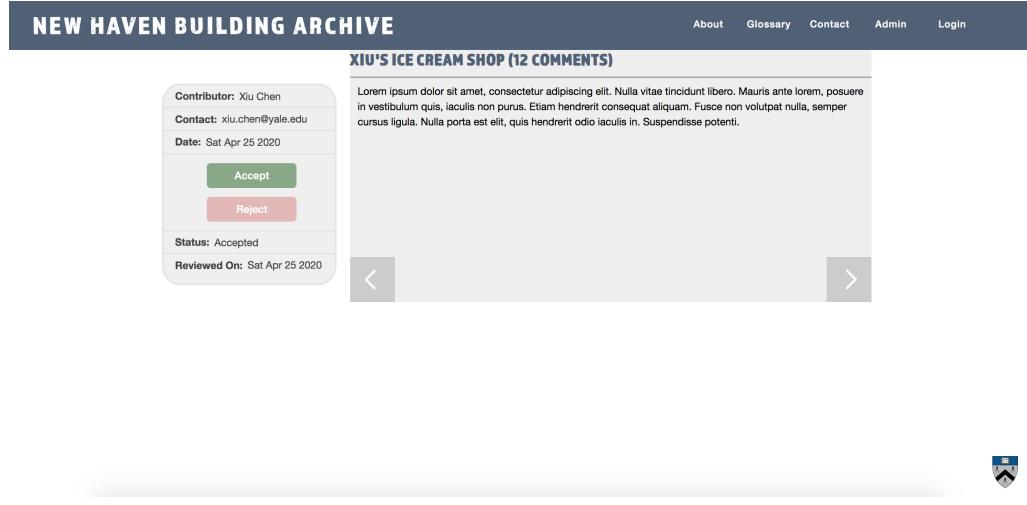


Figure 5: When a comment is submitted, admins can accept or reject them in the review portal.

The screenshot shows a web page titled "NEW HAVEN BUILDING ARCHIVE". At the top right are links for "About", "Glossary", "Contact", "Admin", and "Login" along with a Yale University logo. The main content area features a sidebar with three building images: "English Station" (510 Grand Avenue, New Haven CT), "Webster Bank" (80 Elm Street), and "1 Broadway" (New Haven, CT). To the right is a "SOCIAL HISTORY" section with a dropdown arrow, a "DISCUSSION FORUM" section with a dropdown arrow, and a "COMMENTS (8)" section. The "COMMENTS (8)" section contains two entries from "Xiu Chen" dated "Sat Apr 18 2020" with email addresses "xiu.chen@yale.edu" and "xiuqichen8@gmail.com". Each entry is a block of placeholder text identical to the one in Figure 5.

Figure 6: Accepted comments are displayed in a discussion forum on the building page.

4 A Visualized Glossary

The existing website featured a glossary page for users to quickly reference architecture terminology and its definitions. However, the page was neither fully fleshed out nor frequently visited because it lacked a visual component to illustrate the vocabulary terms. Therefore, an image gallery was added to each

term of the glossary along with the ability to write the definitions in rich text for a more enhanced, visual experience. Now, the admins can upload images and caption them accordingly for each term.

The screenshot shows a web page titled "NEW HAVEN BUILDING ARCHIVE". At the top right are links for "About", "Glossary", "Contact", "Admin", "Login", and a logo. Below this is a section with the heading "Streamline Moderne" and a brief description: "Taking inspiration from aerodynamic design, streamline moderne is a style of international Art Deco architecture that emerged in the 1930s." To the right is a large image of a building with Streamline Moderne styling, featuring a blue sign that reads "Club Moderne". Below the image are left and right navigation arrows. The URL in the address bar is "http://newhavenbuildingarchive.com/glossary/1597950597851-SFMartin".

Figure 7: Front-end user view of glossary includes the visual aid of an image gallery.

The screenshot shows the "NEW HAVEN BUILDING ARCHIVE" admin interface. At the top right are links for "About", "Glossary", "Contact", "Admin", "Login", and a logo. Below this is a section for "Image Gallery" with three thumbnail images. A "Select Image" button, a file input field with the value "glossary-1597950597851-SFMartin", and a "Select File" button are shown. A "Caption/Attribution" field contains "San Francisco Maritime Museum". A rich-text editor window is open, showing the term "Streamline Moderne" and its definition: "Taking inspiration from aerodynamic design, streamline moderne is a style of international Art Deco architecture that emerged in the 1930s." The editor has standard toolbar icons for bold, italic, underline, etc. A message at the bottom of the editor says "Changes have been successfully saved." At the bottom right are "Add New" and "Save" buttons. The URL in the address bar is "http://newhavenbuildingarchive.com/admin/glossary/add".

Figure 8: Admin view for adding new terms to the glossary. Each term now includes an image gallery and rich-text definitions.

5 Miscellaneous Improvements

The website was last extensively maintained two years ago. I helped improve certain features by implementing minor, but necessary, changes to the archive. For example, I added in more rigorous form validation for creating a new building page, requiring specific fields to be filled out so that the entries can be more robust and descriptive. Additionally, I helped re-organize the readability of the pages for each building entry by hiding the descriptions, such as that of “Social History,” “Urban Setting,” and “Resources,” in toggable drop-downs.

6 Quick Links

- New Haven Building Archive: nhba.yale.edu
- New Haven Building Archive GitHub Repo: github.com/YaleDHLab/nhba