

Heuristic Evaluation Report

6.831 homework 2

This is heuristic evaluation of Website HManager – house management system for Residents and House masters.

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Identified Features

Each page of the website is separately evaluated; their problems and plus-points are listed separately.

Severity levels listed here are tentative and open for discussion.

1. Main Page (index.html)

1.1 Minor - Introductory Information is missing (help and documentation) – minor

The home page should contain introductory information about the website in order to facilitate new users to build a mental model of the system, suggested by Nielson's heuristic **help and documentation**.

Having introduction will help in learn-ability, but if the users are already aware of the purpose of this website, missing introduction does not affect efficiency or safety (**minor**).

1.2 Major - Contact information is missing (help and documentation, user control)

The "Contact us" and "about us" segment is missing for the users who need to contact the authority or administrator about reverting a change or query about something and therefore can cause frustration among users. Therefore by Nielson's heuristics of **Consistency and standard in website designs** and **help and documentation, this feature should be there.** .

Contact information is frequently searched for, therefore it's a major problem.

1.3 Cosmetic - Menu Buttons color and background colors should be different (affordance)

Because the color of the button is same as the color of background of the buttons, they lose the affordance of a button. This goes against Norman's Principle of **Affordance**.

Once a user learns that these labels are actually buttons, it does not affect usability therefore it is a cosmetic problem.

1.4 Major - Choice of buttons' text color (visibility and readability)

The color of labels on buttons and title of the web page is unsaturated blue color on a white background; this provides a challenge to weak or old eyes. Because fovea of an eye has very few S cones, so you can't easily see blue features in the center of your vision, and older eyes are far less sensitive to blue, because the lens and aqueous humor slowly grow yellower, filtering out the blue wavelengths, also the lens gets weaker with age. Therefore this causes **visibility and readability issues which are part of Nielson's Heuristics**.

1.5 Cosmetic - Menu buttons are not consistent in size (aesthetic and symmetry)

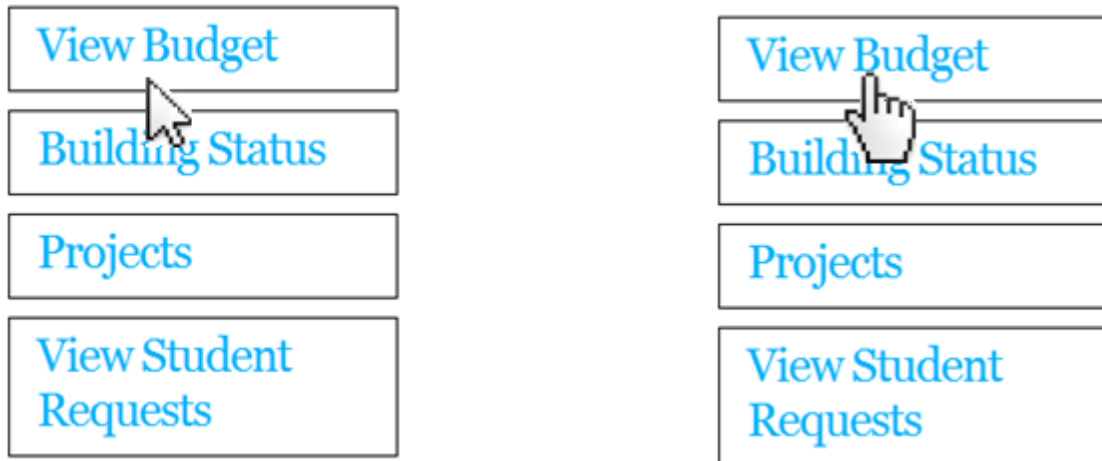
Menu buttons The size of the buttons is not equal (**aesthetic and symmetry and contrast**).

It does not affect learnability, efficiency or safety; therefore it is low priority/**cosmetic** change.

1.6 Minor - The border around buttons is not the actual border (fit's law)

There is padding around the text of button which is not clickable (see figure below), therefore requires user to click more accurately. According to **fit's law it slows down selection process and reduces users' efficiency**.

Because the clickable area is bigger in comparison to the un-clickable padding, it does not have a major impact on efficiency, therefore it is **minor** issue and low priority change.



Only the textual area of the button is clickable (where the mouse pointer changes to hand)

1.7 Good - Images (aesthetic and simplicity) - could also use double duty

The images change automatically after some time giving visitors a pleasant user experience. And few modifications might make it even better:

Suggestions:

- (1) These images should be relevant to the purpose of the webpage.
- (2) They could perform a double duty (i.e. show a picture of a project in progress and is a link to project details) that would be helpful utilization of this portion of display.

2. Menu Pages

2.1 Good - Title of the website is link to home page (double duty)

HManager title, which is present on all pages of this website, is a link to home page. This is consistent in the whole webpage, which is useful double duty.

It would be even better if it had more affordance to click, for example if the text is a little embossed, or is placed on a clickable button.

2.2 Cosmetic - Label of current tab should be visibly different (visibility of system status)

The link/tab of currently displayed page should not have the affordance of click and there should be a contrast in the style of currently displayed menu options and rest of the menu options (**visibility of the mode**)

This does not affect usability, efficiency or safety, therefore it is a cosmetic issue.

2.3 Major - Navigation issue in Internet explorer (internal consistency and anticipation)

When this website is viewed in Internet Explorer (IE) the tab/button for “view budget” when clicked from view budget page takes user back to Home page. No other tab does that.

This problem does not cause irreversible damage, and is not there in Chrome and Firefox, so depending on the number of user population using internet explorer this problem is major or minor.

2.4 Cosmetic - Tab bar keeps on changing shape for different pages (internal consistency)

Tab labels/buttons have slightly different size in each page – see figure below. (**internal consistency and fit's law**)

There is only very slight difference and this difference is not expected to affect efficiency therefore it is **cosmetic** change.

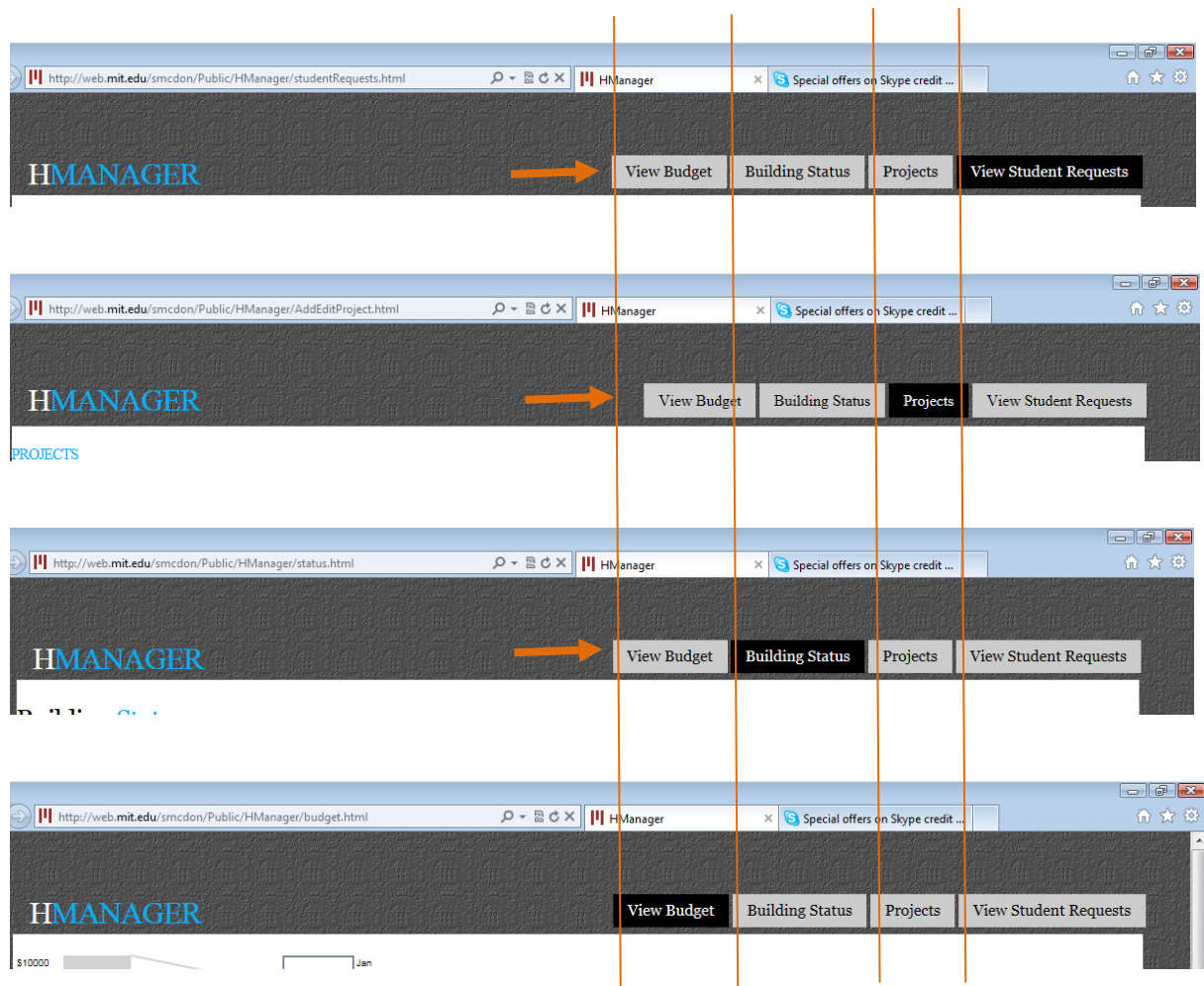


Figure – There is slight difference in size and placement of tab labels.

3. View Budget Page (budget.html)

3.1 Major - Budget distribution Graph does not have labels (learnability and recognition Vs recall)

The graph is very useful presentation of a list of data in table on right, but missing labels reduce its advantage, as user will have to guess what is display parameter and in case he/she is unable to guess it correctly then they might never use it. (**learnability**)

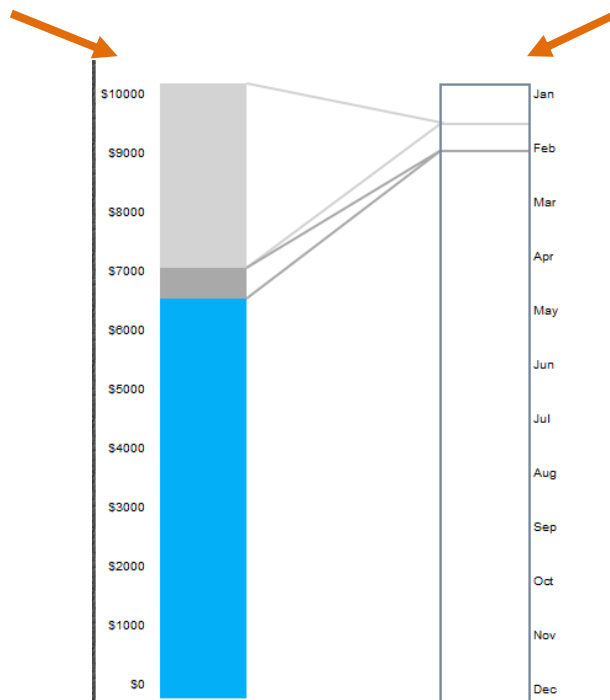


Figure – These data columns should have labels

And once they learn it they will have to remember it while using the next time. It can be a challenge for infrequent users (**recognition vs. recall**)

This page is expected to be used very frequently by a large number of users, therefore this is a major problem.

3.2 Suggestion - Showing current date on graph Labels in addition to dates when budget was used (double duty)

Labeling the current date on calendar will help the users to map the remaining budget to remaining days of year, providing an extra perspective to data.

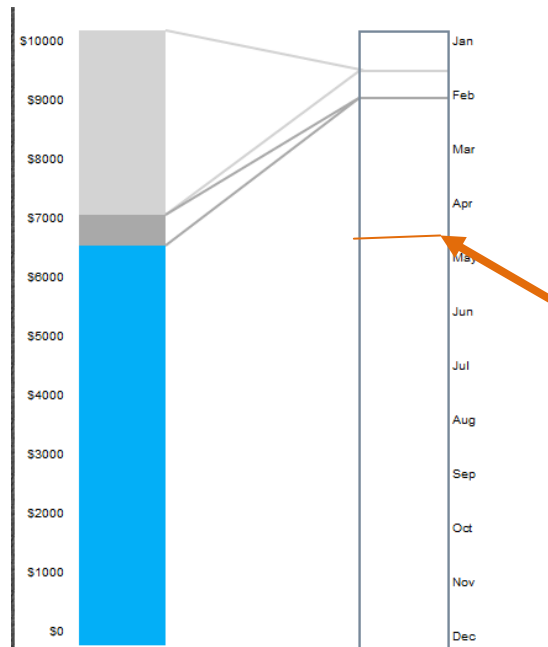


Figure –A marker showing current data. (suggestion)

3.3 Minor - Consistency in order of presentation of graph and table with real world (consistency and learnability)

English (the language of this webpage) is read from left to right, and conventionally information about the data is presented before the graph so that user knows what the graph is showing. Presenting the graph before the data will confuse user and hinder learn-ability.

Once the user are aware what is displayed in graph and are used to this arrangement, this will not affect usability of this interface. Therefore this is a minor change.

3.4 Major - Placement of “download as spreadsheet” button (visibility and efficiency)

Now that the list is small the button is visible, but once the list grows out of the view window the button will be pushed down out of visible space.

- 1) User will have to remember that it is there (**Recall vs Recognition**)

- 2) User will have to scroll down to the bottom to access this option, according to fits law this will slow user down. (reduce **efficiency**)

Budget for 2012

Recent Expenditures

Date	Cost	Description
01/15/12	\$3000.00	water damage
02/05/12	\$500.00	new furniture
02/16/12	\$1000.00	new copier

 [Download as Spreadsheet](#)

Figure – Download as Spreadsheet button is at the bottom of budget table

3.5 Major - Alignment of Budget table and graph with border of page (aesthetic and minimalistic design)

Presently it looks like table is centered aligned vertically. But if this is not the case then if the table is longer than the view window, user will have to scroll down unnecessarily even though there is free space above the table. This will reduce the efficiency (**fits law**) and the interface will look asymmetric (**minimalistic design**)

Depending on the expected frequency of use of this feature it can be either **minor, major or catastrophic**.

3.6 Major - Total budget is shown in unconventional place only and may not be visible to users (visibility and learnability)

The total budget for that year is the apparently the first entry in the list on the left side of graph. Because of absence of an indicator this is easy to miss. (**visibility and learnability**)

It is important piece of information therefore this is a **major** problem.

Suggestion: This column in the graph should have a label as an indicator. Redundantly displaying this information above table will also help.

3.7 Possibly a bug - Data shown in table is not consistent with the data shown in graph

Presently the information in table and in graph does not match. For example table shows 3 expenses while graph shows only two.

3.8 Minor - List of expenses display should be paged and have serial number (visible navigation)

List should be divided into pages or should have serial number for easy navigation and browsing. (efficiency and visible navigation)

This change will help increasing efficiency, but the UI can function properly even without this change and it can wait therefore this is minor issue.

3.9 Major - Description of the expenditure should either be self explanatory or a link to project details (Recognition Vs Recall)

The description currently shown does not give user enough information, for example (see the image below) “water damage” on which floor or “new furniture” for which room is bought. this requires user to remember certain details about the expenses (recall instead or recognize)

Budget for 2012

Recent Expenditures

Date	Cost	Description
01/15/12	\$3000.00	water damage
02/05/12	\$500.00	new furniture
02/16/12	\$1000.00	new copier

[Download as Spreadsheet](#)



Suggestion: either one of the two of the following can help.

(1) The format of description should be predefined to be specific and verification checks should be applied before a new entry is entered in the budget table.

(2) The expense name should be a link to the Project information page.

4. Building status page (**status.html**)

4.1 Major - Two columns have the same header in Building status table (learnability and anticipation)

There are two columns with same title. This is confusing and not consistent with users' anticipation..

4.2 Minor - Index of the Building Status table is on right edge (consistency and anticipation)

This is not consistent with other tables in real world and therefore easy to miss.

But once a user figures this out, it does not affect usability therefore it is minor change.

4.3 Suggestion - Sorting options should be provided in "building status" table (user control and freedom)

The table data is static and cannot be manipulated by the user for better understanding (such as order by floor number or order by progress). It will be useful for **user control and freedom** if these options are provided, in same way as in Projects table.

4.4 Major - Unconventional location of options Buttons (visibility)

Options' buttons are right aligned against the border of the page and can therefore be cropped out of view if explorer window is resized.

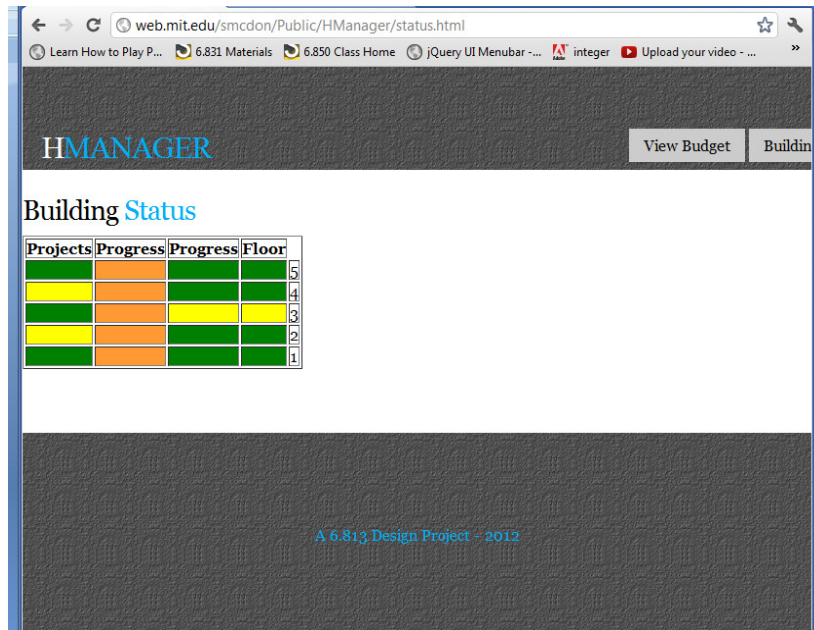


Figure – options are hidden because of smaller explorer window

This issue can be resolved if auto resizing is implemented at later stages of the project, but then it will affect the size of table. Therefore the buttons should be moved at the top of the page (**externally consistent with conventional styles**). It affects the usability of this page therefore this is major change.

4.5 Major - Color choice for the menu Buttons (color blindness and age inflicted vision disability)

The blue text on orange background inhabits **chromatic aberration** while blue text on yellow background is hard to read for **tritanopic** people in addition to chromatic aberration.



Figure – Option buttons on Building Status Page

Because color blindness is common and chromatic aberration affects everyone, therefore this issue has severity level **major**.

4.6 Major - Color coding of progress and color coding of different columns overlap (internal consistency and anticipation)

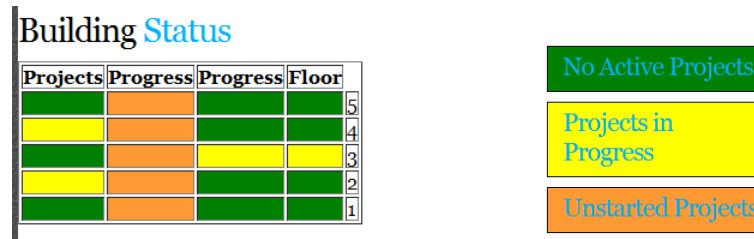


Figure – Color coded Building Status Table

Color used to identify a certain type of progress is also used as background color for one of the columns which is not consistent with the progress identification scheme. (**anticipation**)

Color used to identify a certain level of progress of a project should cover one complete row, different cells cannot belong to different progress levels – **internal consistency**.

This problem frequently effects all the learnability and efficiency of all the users, therefore this is a major change.

4.7 Good - Alternate info source (useful redundancy)

Textual representation in table column in addition to color coding the progress of a project is good feature, especially useful for color blind users.

4.8 Cosmetic - Descending order of rows in the Building status table (match real world)

Numbering rows in a table in descending order is unconventional and may confuse users.

5. Projects page (AddEditProject.html)

5.1 Good - User control on resizing column (user control and freedom)

It's good that user has control to snap a column or make one wider.

5.2 Major - Default column size (visibility and readability)

Default column size should be more than the text length so that the sorting arrows don't cover the text hindering readability.

5.3 Major - Clicking on the table entries open "update project" form (visibility, affordance and anticipation)

This feature is inconsistent with user anticipation who expects to open project details instead of updating it. (**Anticipation**)

Information cue for this feature is missing. (**affordance**)

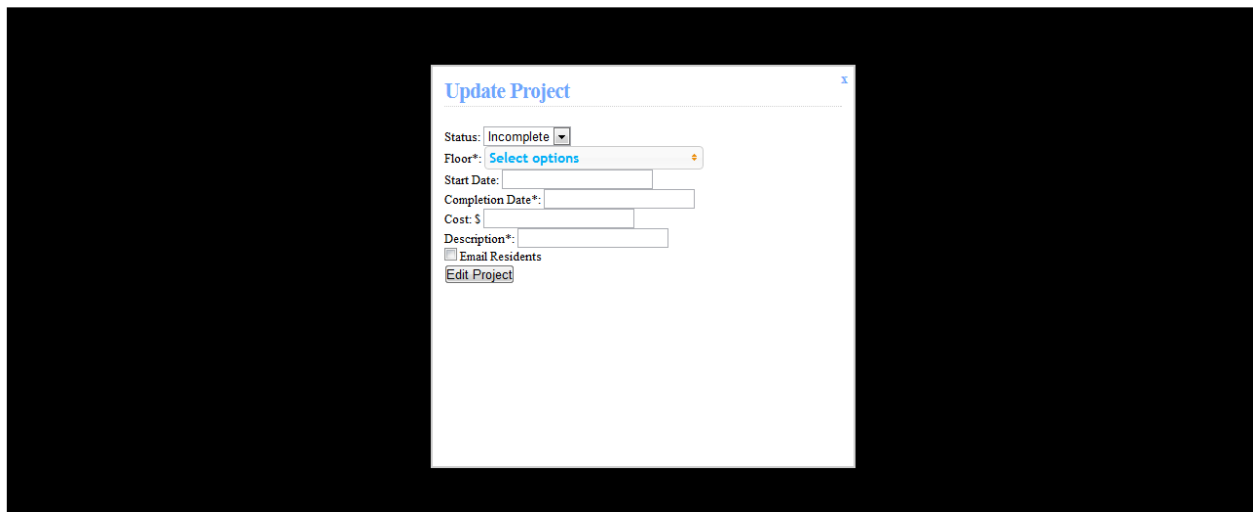


Figure – Update Project form, opened by clicking the project row

5.4 Catastrophic - message when project is edited (safety and error prevention)

There should be a confirmation message when project is edited and a way to reverse the change.

(safety and user control)

Because this is safety issue, and has long term irreversible effect it's a **catastrophic** problem.

5.5 Good - Column headers are doing double duty (double duty and user control)

The headers of the Project table are doing double duty of sorting.

5.6 Cosmetic - Choice of font size and style for table entries and new project form (readability)

The table entries are small and thin, reducing its **readability**.

Because it can be fixed by changing the resolution of display device it is **cosmetic** change.

5.7 Minor - List of current projects and Create New Project form both are on the same page (aesthetic and minimalistic design)

Two different functionalities are provided on the same page (**aesthetic and minimalistic design**)

Because the interface can still be used without significant reduction in usability before this change is made, its **minor** problem.

Suggestion: There should be a link to "Create Project" Page, and a separate page should contain the form.

5.8 Cosmetic - Padding, Margins and alignment of create project form (symmetry and aesthetics)

Padding and margins should be used to eliminate overlapping text boxes and to increase the learnability and contrasts between different options to be filled.

Add New Project
Floor*:
Select options
Start Date:
Completion Date*:
Cost: \$
Description*:
 Email Residents
Add Project

Figure – Add new Project form

5.9 Catastrophic - Validation checks are missing in “Add new Project” Form (safety and error prevention)

In add new Project form no form validation is applied, hence the user can add an empty project.

This is high impact problem therefore it is categorized as catastrophic.

5.10 Major - Text can be entered in Date Fields (error detection and prevention)

The start date and completion dates text fields has the affordance of entering texts and lets user enter non-numeric characters, therefore a user can end up writing project name instead of date unknowingly.

This is safety problem therefore it is **catastrophic**. It can be partially resolved by placing validation checks on form submission, but a better solution would be to provide a date picker to enter value in this field.

Suggestion: a date picker should show up when this field is clicked.

5.11 Major - Asterisks on some fields with no explanation (help and documentation)

There is a asterisk on floor description and few other fields of “Add new Project” form, but there is no foot note explaining the reason. External consistency suggests that these fields are “compulsory”, but absence of verification checks or error message on submitting empty form contradicts this understanding.

Because this can result in wrong data entries in records, therefore it us categorized as a **major** problem.

5.12 Suggestion - Clear option for the form (user control and freedom)

There should be a “clear” button at the bottom of the form to give user the control to wipe the form and start over. (user control and freedom).

5.13 Minor - Refreshing the page loses the data entered in “Add new Project” form (save user’s work)

The data entered by user should be retained if user accidently refreshes the page or moves to other page, unless he/she intentionally clears the form (saving user’s work)

5.14 Catastrophic - Confirmation message when project created (safety and error prevention)

Because creating a project can potentially mean sending out email in bulk (which is irreversible action), it should have a confirmation message (**safety**)

This is high (and irreversible) impact issue and can occur in high frequency, this is **catastrophic**.

6. View Student Request Page (studentsRequests.html)

6.1 Major - Student Request Table is cropped by the lower border of the smaller view window overlaid on grey background wall (fits law and efficiency)

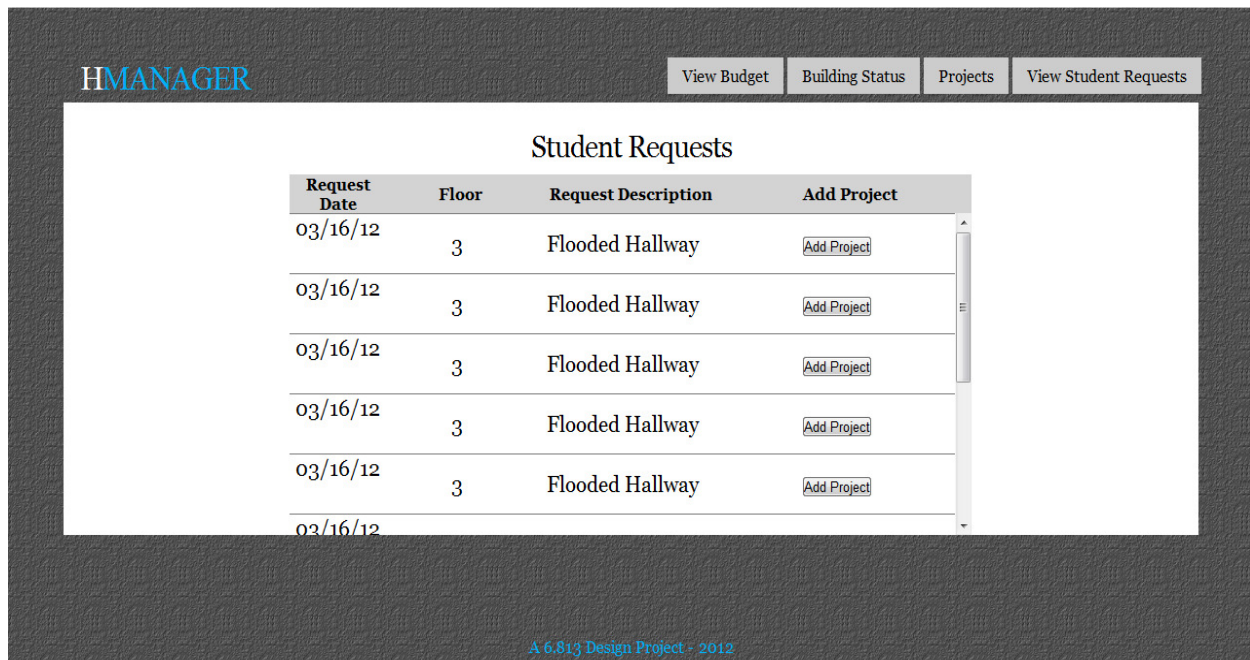


Figure – Student requests table cropped

Because view window (the part of the page displayed on the grey background) is smaller than the screen size, user will have to scroll down even if the list is short enough to be completely displayed on one screen. This increases browsing time according to **Fit's law**, and reduces **efficiency**.

This is the page is expected to be used by both types of user populations (house manager and residents) therefore this is categorized as major problem.

6.2 Suggestion - Data representation of student requests (User control, aesthetics and minimalistic design)

User control Information should be organized in a way that is easy to grab. (**efficiency**)

Suggestions:

- (1) User should be able to sort the list of requests on different columns.
- (2) Index number should be assigned to rows.
- (3) Pie chart of requests which displays all the requests with their relative frequency (double duty), with a link to request details for each request will be useful.

List of Problems Sorted by Severity level

The index number in this list corresponds to its position in previous section.

Catastrophic

- 5.4 Confirmation message when project is edited (safety and error prevention)
- 5.9 Validation checks at submitting “new Project” form are missing (safety and error prevention)
- 5.10 Text can be entered in Date Fields in forms (affordance and consistency, error prevention)
- 5.14 Confirmation message when project is created (safety and error prevention)

Major

- 1.2 Contact information is missing (help and documentation, user control)
- 1.4 Choice of buttons’ text color (visibility and readability)
- 2.3 Navigation issue in Internet explorer (internal consistency and anticipation)
- 3.1 Budget distribution Graph does not have labels (learnability and recognition vs recall)
- 3.4 Placement of “download as spreadsheet” button (visibility and efficiency)
- 3.5 Alignment of Budget table and graph with border of page (aesthetic and minimalistic design)
- 3.6 Total budget is shown in unconventional place only and may not be visible to users (visibility and learnability)
- 3.9 Description of the expenditure should either be self explanatory or a link to project details (recognition vs recall)
- 4.1 Two columns have the same header in Building status table (learnability and anticipation)
- 4.4 Unconventional location of options Buttons (visibility)
- 4.5 Color choice for the menu Buttons (color blindness and age inflicted vision disability)
- 4.6 Color coding of progress and color coding of different columns overlap (internal consistency and anticipation)
- 5.2 Default column size (visibility and readability)
- 5.3 Clicking on the table entries open “update project” form (visibility, affordance and anticipation)
- 5.11 Asterisks on some fields in “Add new Project” form, with no explanation (help and documentation)
- 6.1 Student Request Table is cropped by the lower border of the smaller view window overlaid on grey background wall (fit’s law and efficiency)

Minor

- 1.1 Introductory Information is missing from home page (help and documentation)
- 1.6 The border around buttons is not the actual border (fit’s law)
- 3.3 Consistency in order of presentation of graph and table with real world (learnability)
- 3.8 List of expenses display should be paged and have serial number (visible navigation)
- 4.2 Index of the Building Status table is on right edge (consistency and anticipation)
- 5.7 List of current projects and new project creating forms are on the same page (aesthetic and minimalistic design)
- 5.13 Refreshing the page loses the data entered in “Add new Project” form (save user’s work)

Cosmetic

- 1.3 Menu Buttons color and background colors should be different (affordance)
- 1.5 Menu buttons are not consistent in size (aesthetic and symmetry)
- 2.2 Label of current tab should be visibly different (visibility of system status)
- 2.4 Tab bar keeps on changing size for different pages (internal consistency)
- 4.8 Descending order of rows in the Building status table (match real world)
- 5.6 Choice of font size and style for table entries and new project form (readability)
- 5.8 Padding, Margins and alignment of “Add new Project” form (symmetry and aesthetics)

Good Points and Some Suggestions

- 1.7 Images on home page (aesthetic and simplicity) - good, could also use double duty
- 2.1 Title of the website is link to home page (double duty) – good, should have more affordance
- 3.2 Showing current date on graph Labels in addition to dates when budget was used (double duty) – suggestion
- 4.3 Sorting options should be provided in “building status” table (user control and freedom) – suggestion
- 4.7 Alternate info source in Building status table (useful redundancy) – good
- 5.1 User control on resizing the table column (user control and freedom) – good
- 5.5 Column headers in Projects table are doing double duty (double duty and user control) – good
- 5.12 Clear option for New Project form (user control and freedom) – suggestion
- 6.2 Data representation of Students Requests – cosmetic suggestions

Possible bug

- 3.7 Data shown in Budget table is not consistent with the data shown in Budget graph.