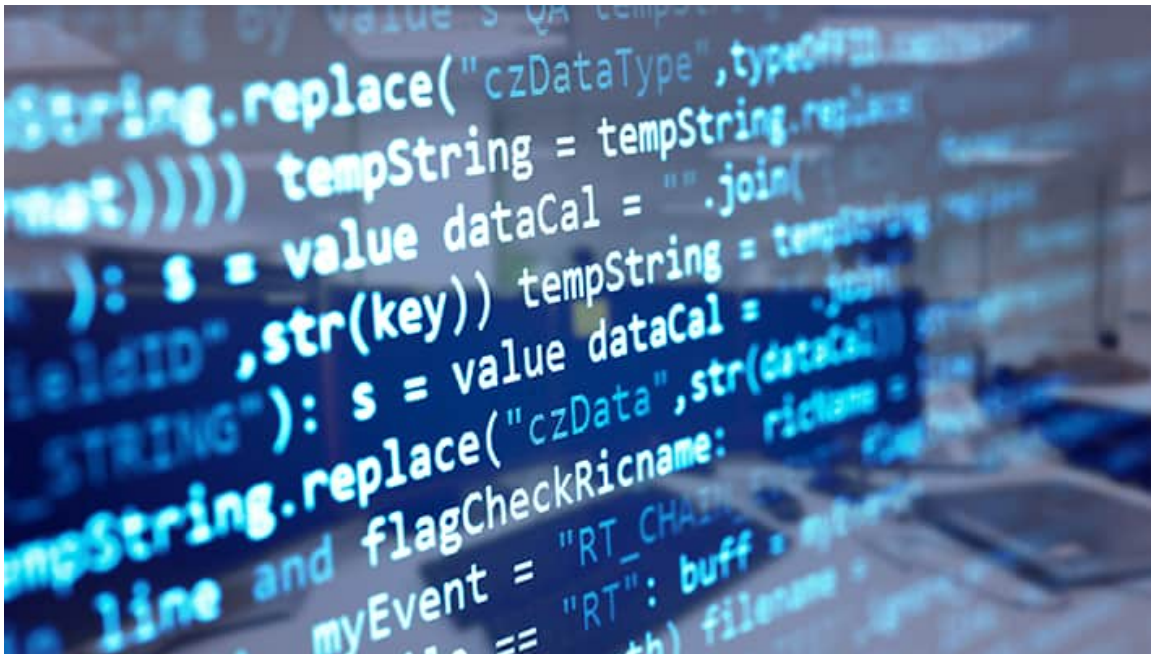# A Cognitive Walkthrough and Heuristic Analysis of Poor Web Design & Development

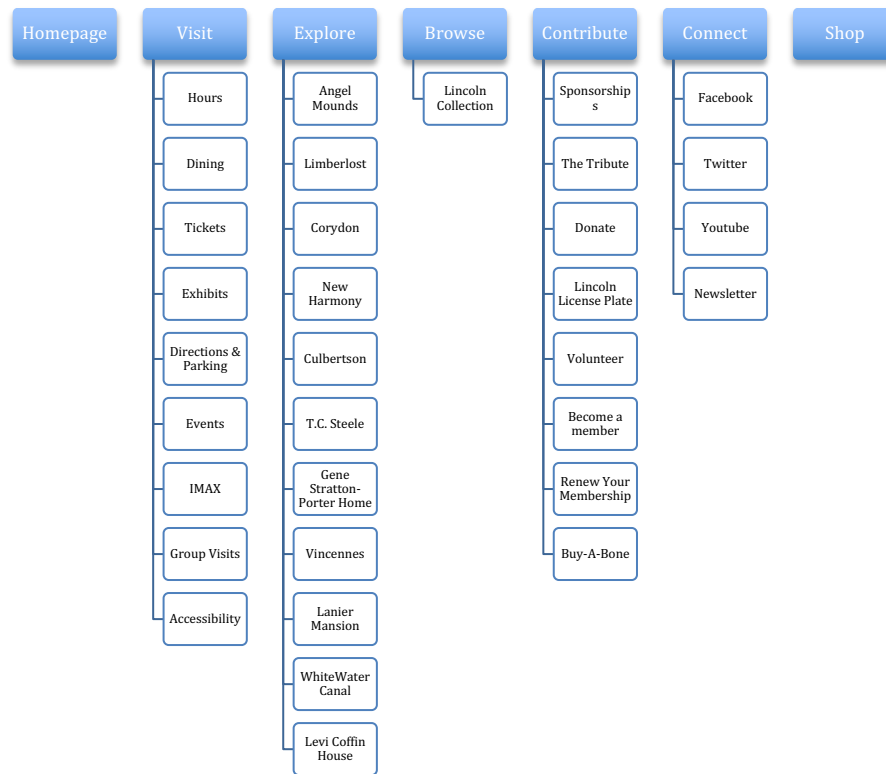*Logical Evaluations of Usability in UX*

By Chad Jordan - November 16th 2015

Walkthrough & Analysis: The Indiana State Museum.

Sitemap & Executive Summary:

Homepage

Visit
- Hours
- Dining
- Tickets
- Exhibits
- Directions & Parking
- Events
- IMAX
- Group Visits
- Accessibility

Explore
- Angel Mounds
- Limberlost
- Corydon
- New Harmony
- Culbertson
- T.C. Steele
- Gene Stratton-Porter Home
- Vincennes
- Lanier Mansion
- WhiteWater Canal
- Levi Coffin House

Browse
- Lincoln Collection

Contribute
- Sponsorships
- The Tribute
- Donate
- Lincoln License Plate
- Volunteer
- Become a member
- Renew Your Membership
- Buy-A-Bone

Connect
- Facebook
- Twitter
- Youtube
- Newsletter

Shop

The Indiana State Museum website provides some information regarding certain events and newsletter information and a few activities. My process in this website is to provide a Cognitive Walkthrough and Heuristic Analysis of the overall site including the aspects that worked and the other areas that did not.

Summary of Findings:

1) The search function does not work
   - When searching for keywords, the background goes white as if it's broken.
   - The search results take the user to arbitrary locations on the website that are not even pertinent to the search criteria.
   - During the background change to white, the remaining hyperlinks at the top of the page go invisible since they were white, to begin with.
2) The homepage is essentially empty
   - After the navbar, the user is given the ability to scroll, when there is no need to scroll because there is nothing else on the page.
   - When the user scrolls too far, the page gets cut off by a separate, strange gray overlay/background that is confusing, distracting, and poorly written in terms of the code.
3) The contact page is not a true contact page

- Only provides general information such as website URL, phone number, and physical address.
- A functional contact page has a *'text area'* and *'send'* button for inserting and sending a message regarding specific questions that are otherwise not available on this website. The phone number does not guarantee that someone will be available to assist and this form of contact page, is most likely going to create frustration with the user.

4) Accessing Tickets
- Ticket information is available in various locations
- Purchasing/Ordering tickets on the website is not able to be done, it always throws an error
- A Side-Nav with non-related information shows up on error page.

5) Accessibility for the disabled
- There is only a disclaimer and a contact by the name of Tom Jennings that is mentioned but no information regarding locations of wheelchair ramps, handicapped parking, or other accessibility to meet ADA requirements.

6) Signing up for the newsletter
- This was done with ease and provided no problems.

7) Food Options for people with allergies
- There were a few findings regarding food with gluten free options
- Other options seemed to be mindful of allergies
- Some deli foods could be modified to fit a person's needs better

8) Information on distance for traveling
- The mini-map provided does not help the customer to find the best route to the museum
- The other option is to click on a link that opens up google maps which only means the user has to put in more information and try to find it themselves rather than being provided more detailed information.

9) Gathering information on specific calendar events.
- The users click on another day on the calendar, and the square goes completely black, making it impossible to see the day of the month.

This process requires a few different tasks while on the website:

1) Signing up for a newsletter to stay in touch
2) Finding the schedules of events to know what dates to visit the museum
3) Ordering tickets for different family members of different age ranges
4) Information about accessibility for the disabled
5) Food options for customers with allergies
6) Traveling directions for the location of the museum

Required Tasks for Accessing Directions:

1) First, the user will click *'Visit'* on the homepage which will expand a submenu that will provide the option for *'Directions and Parking'*
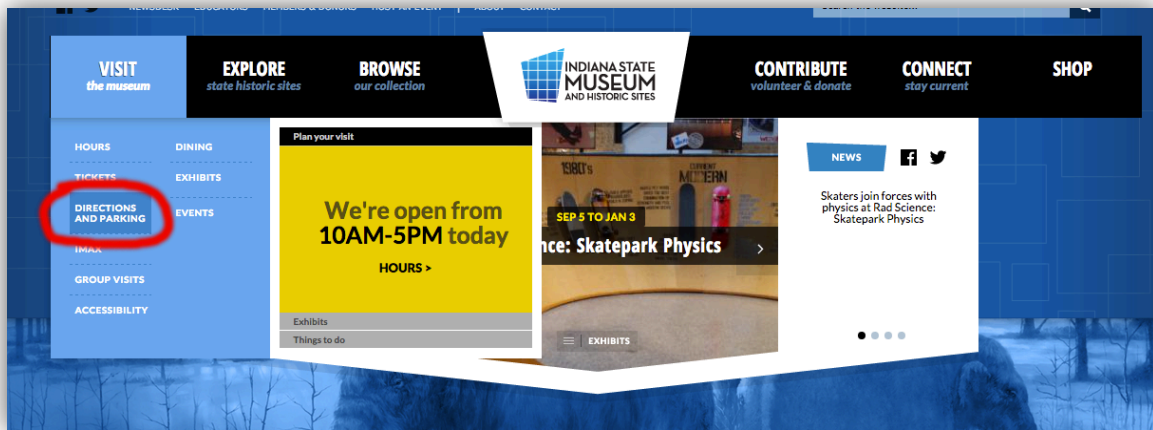
2) The user is then redirected to a section that provides a mini-map and arrow link to google maps. This is the extent of the information for directions that is provided for the user.
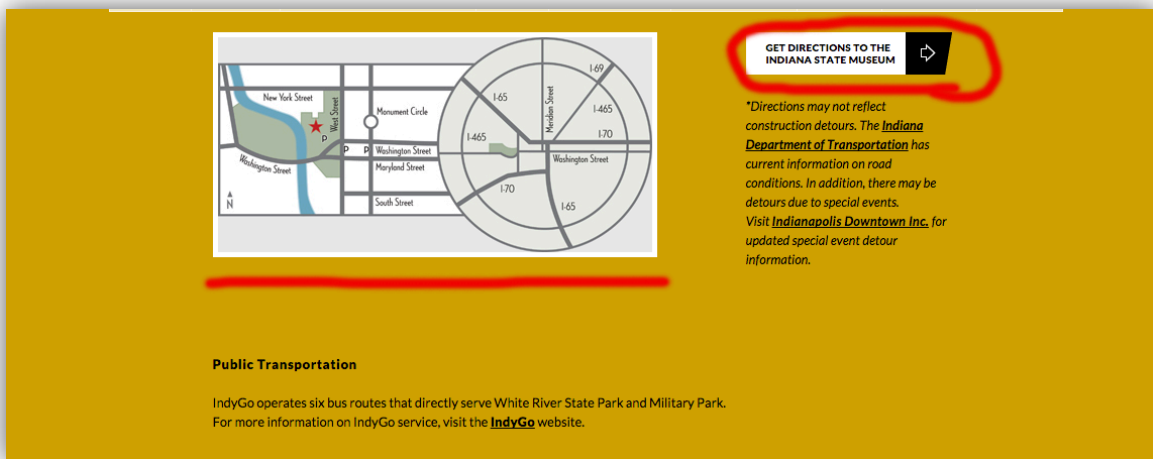

Additional Thoughts on this Task:

One of the big issues with this format is that the user will struggle with understanding the map that is provided. It's not really instructions to the area, it's more about showing a generalized location of where the museum is currently sitting, not how to get there, and the details of the map are mediocre at best. If the user clicks on the arrow, all it does it redirect them to google maps which isn't very helpful. It's a lazy approach for the museum to not provide more useful data or information about how to get to the museum and instead expecting the user to do more of the work and typing to try and find out how to get there.

Required Tasks for the Newsletter:

1) For the first time visiting the website, the consumer will want to gather more information about the website and remain current with updates and information.

2) Once they are on the website, search for keywords in the navbar for the obvious, desired results such as a newsletter. In this case, the consumer would click the connect button in the navbar to stay current. While the user hovers over the button, a sub-navigator pops up, but once you click it, you are then taken to a different page where you are given the option for the newsletter.
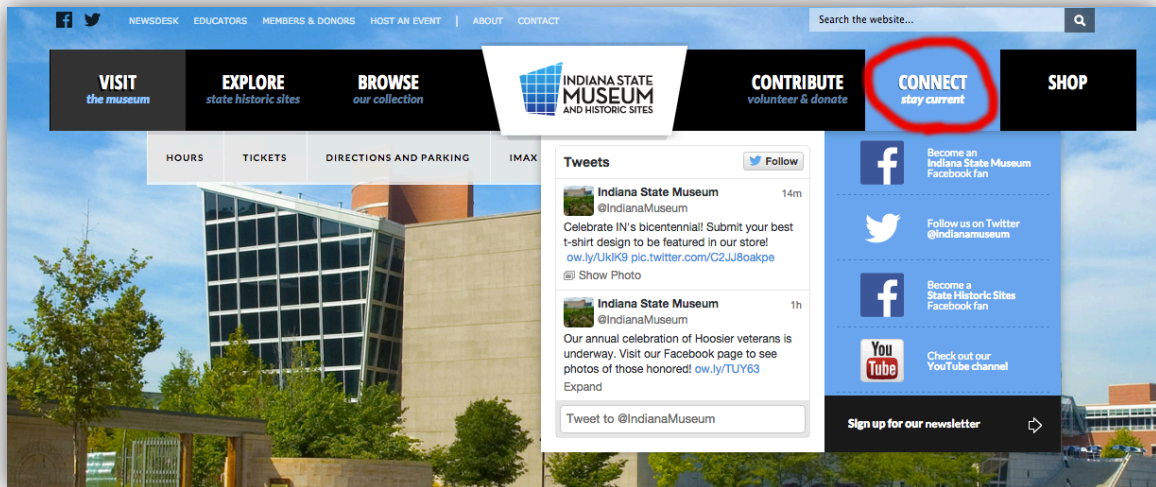
3) Since the newsletter is what the consumer wants, they would click newsletter to sign up to remain current. This screenshot demonstrates the next step.
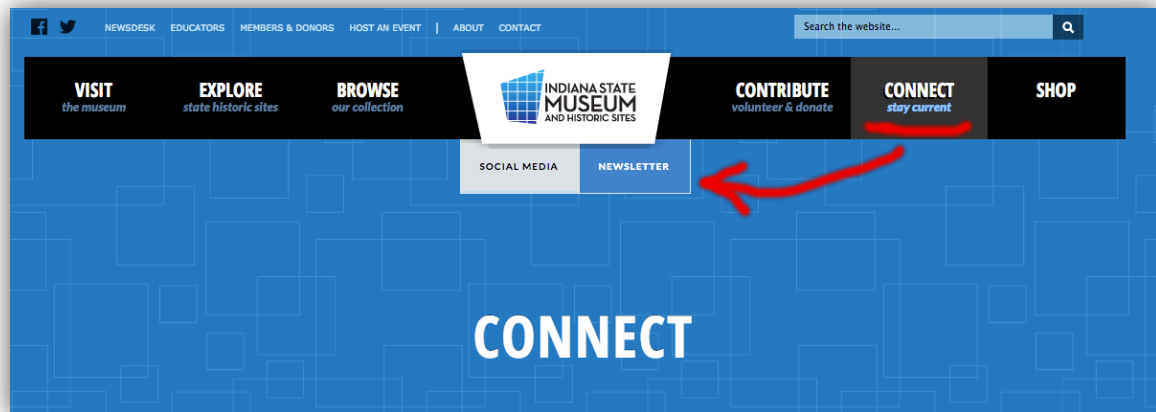
4) The next step is very straightforward. The page requires the consumers name, email address, and password then clicking submit. Once this information was in, they will be automatically connected to receive the museum's newsletter. The following image displays that.
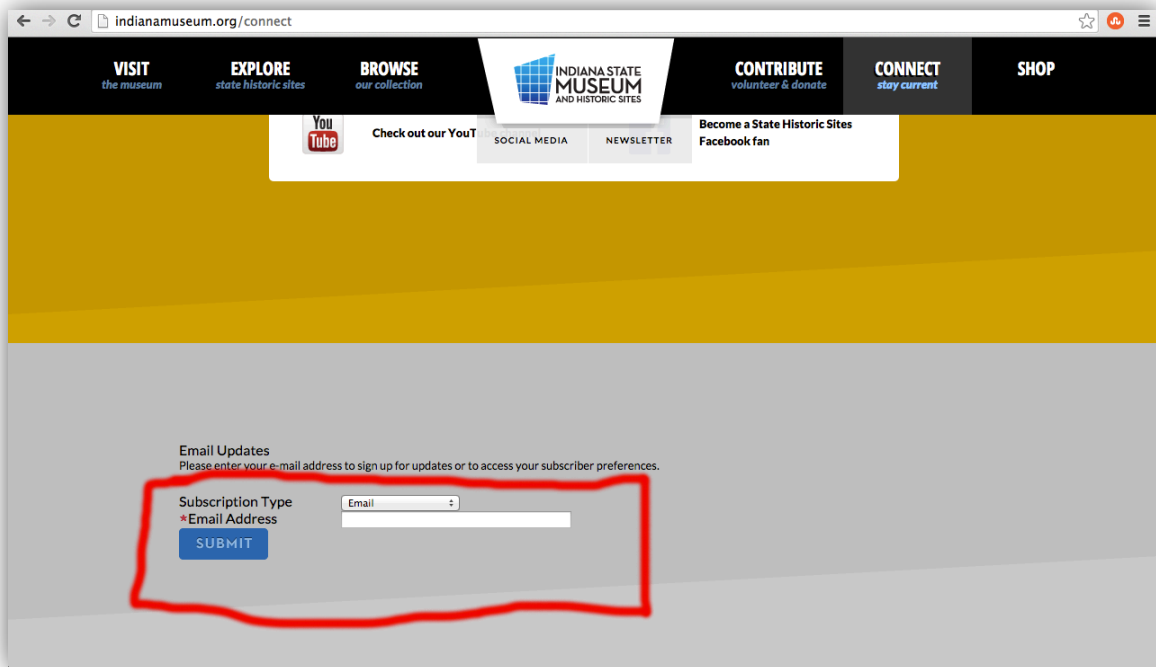
5) Once the email confirmation comes through, the user will not have to activate anything, it will already be completed and the email just notifies them of the completion of the task.
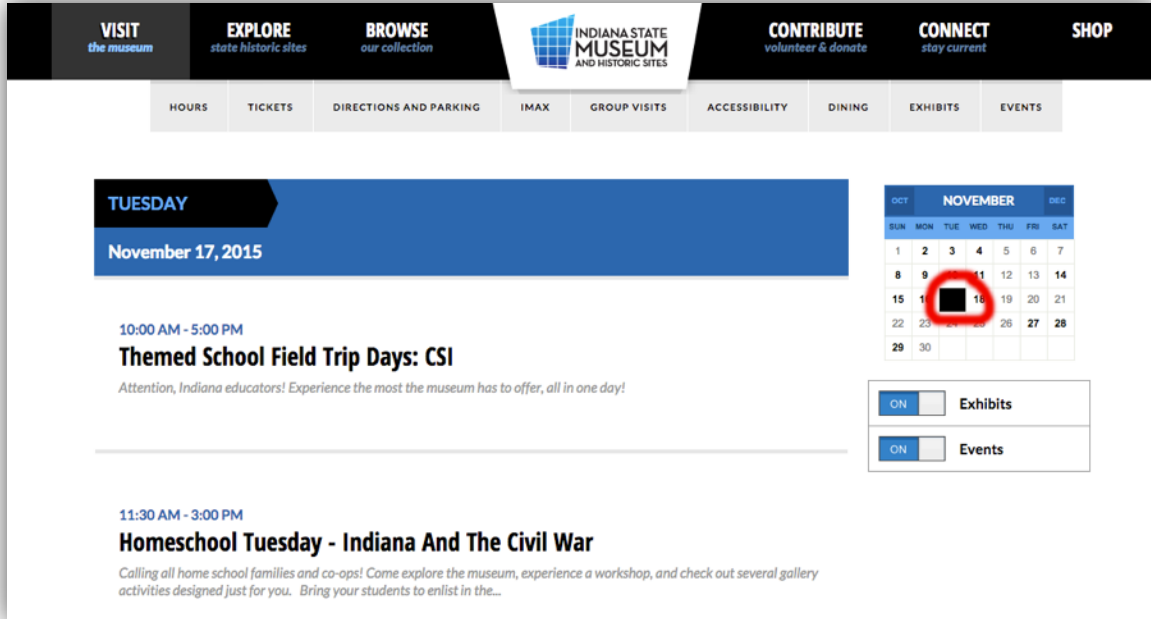
Additional Thoughts on this Task:

This was not a difficult task to carry out. The process was very straightforward and it functioned the way that it was supposed to. The consumer should have little to no difficulty performing this particular task.

Required Tasks for Finding Events:

1) While the consumer is searching for information, they may be very interested in finding events that they can get involved with in a particular date range.

2) On the homepage, the user can click on 'Visit' and then go to 'events' in the submenu section. After that, there is a mini calendar that dynamically loads and alters various events based on the days that the consumer will click on. This image is an example of this:
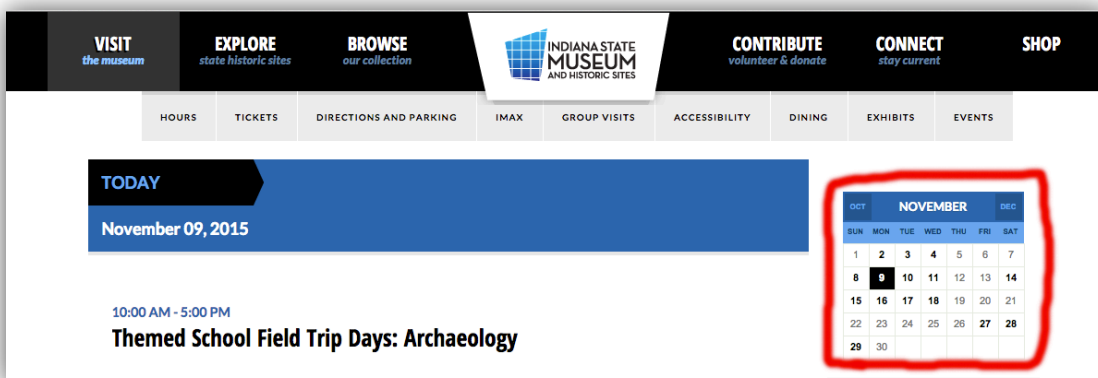
3) At first the consumer is able to click the different days and receive updated search results. However, while doing so, the number on the days is automatically blacked out when they are clicked on. This image displays this mistake:


4) The events can be located and filtered, but the numbers are blacked out which takes away not only functionality but also a positive user experience.

Additional Thoughts on this Task:

Even when the consumer refreshes the screen, they are still unable to see the numbers reappear from the highlighted black box. It would be much better if the box was a different color and also transparent rather than a black outline. The user may be able to locate different events on specific days, but they will have to be mindful of the black box that covers up the days that they click on when wanting to see different events.

Required Tasks for Ordering Tickets:

1) When trying to order tickets for the family members of different age ranges, if the users clicked on the tickets button in the submenu section, they would then scroll down and and click on the 'Purchase Tickets Online' button shown below but then only to be re-routed to an error screen on the next page (shown in image below).
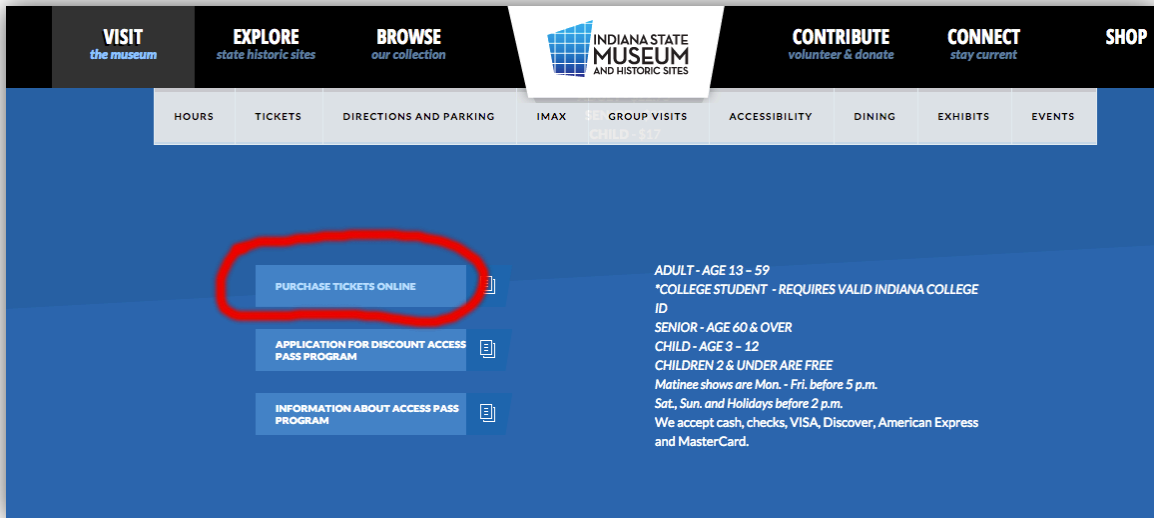
2) The consumer is brought to the following error screen instead:
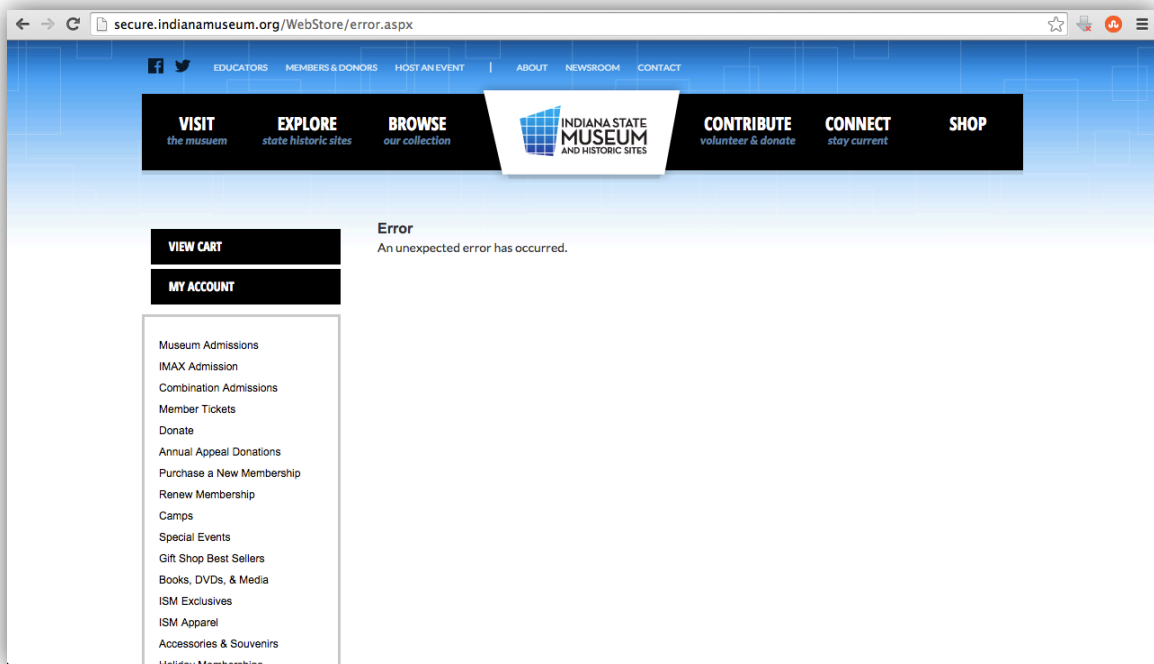
3) At this point, the user will have to go back to the home screen to try to locate the tickets.

4) Once the user clicks 'Visit' in the navbar, the next section is under the 'events' button in the submenu which provides the following screen:
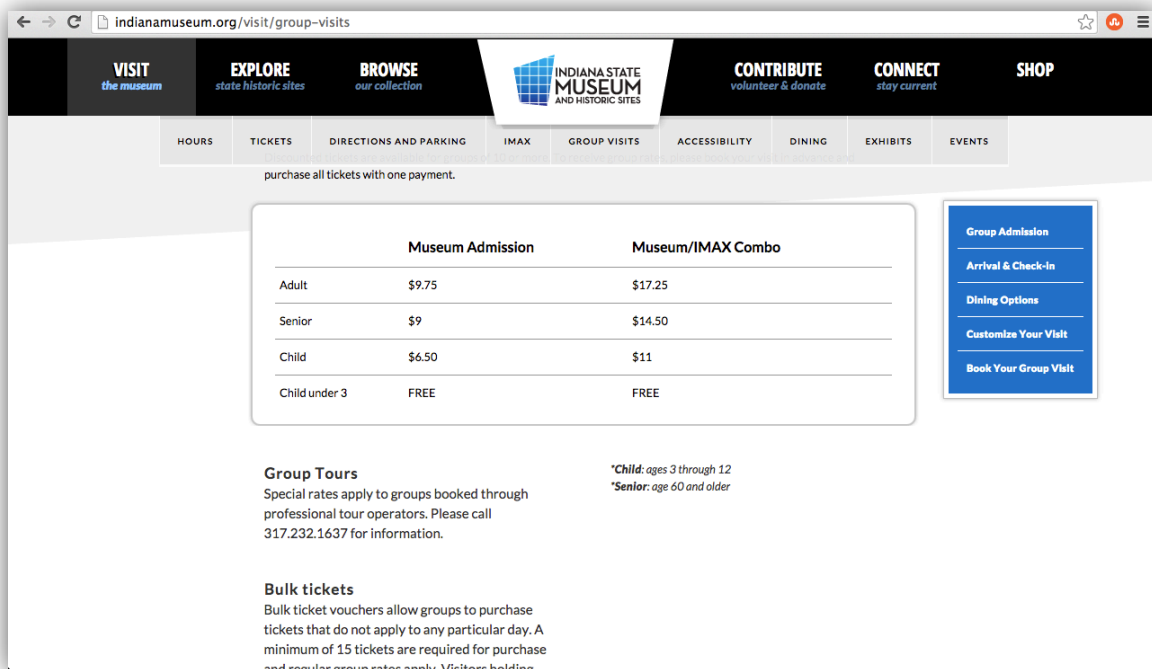
5) The user will be able to find ticket information for admission for various age ranges which is good, but they will still not be able to order the tickets because every time this is attempted, the error page appears.
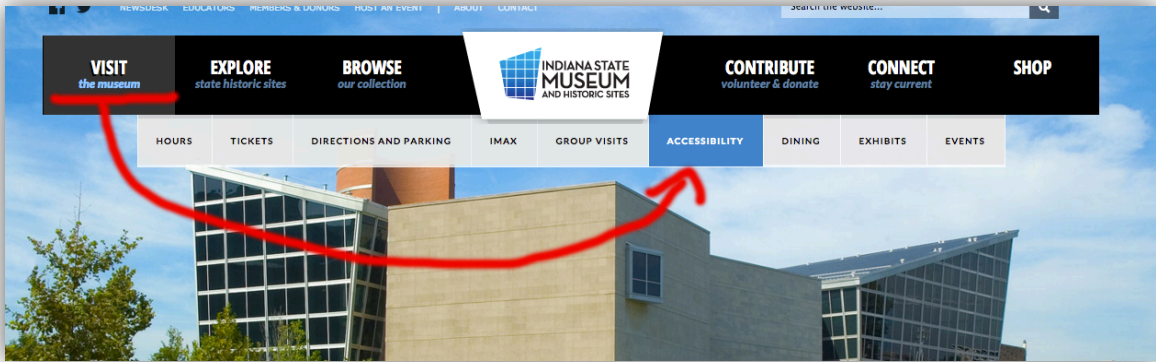
Additional Thoughts on this Task:

The first problem with this error, is that the functionality is stopped when the consumer is not able to perform the required tasks that they are needing to do on the website.   The image below displays this repeated error no matter how many times they try to repeat the required action. This will not only rob the user of a functional usability experience, but it will cause confusion as they will have to search around more, uncertain of where to complete the task. I wasn't sure why it brought me to this page. If a part of the website is not properly working, it is vital that this is fixed so the users can perform the needed tasks.

There will also be more confusion with the appearance of the side nav bar that pops up on the error page. It was showing up with 'View Cart' when there was currently nothing to add to my cart. This will only further separate the user from the overall experience on the website. There was a lot of unwanted and unneeded whitespace on the page that could have been filled with something else for website navigation or accessibility, but there wasn't.

Required Tasks for Determining Accessibility:

1) The user would click on 'Visit' on the left-hand side of the navbar, which would then provide the 'Accessibility' option in the sub-nav section.
2) The next step would involve clicking 'Accessibility' to figure out what they have to offer for the disabled.

3) Once the user clicks on 'Accessibility' they are brought to the following page:

The Indiana State Museum provides reasonable modifications to ensure it does not discriminate on the basis of disability in admission to, access to, or operation of its programs, services or activities.

Questions, concerns, complaints or requests for additional information regarding the ADA may be forwarded to the ADA Coordinator:

Tom Jennings
650 West Washington Street
Indianapolis, IN 46204

Phone: 317.650.9584
TDD: 317.234.2447

Website
Mobility
Hearing
Vision
Families
General Amenities

Findings on this Task:

The problem here is that there is no other information that the user can find about accessibility. There is only a general statement about how the museum does not discriminate against anyone with disabilities to access the facility. There was no other information about access that could be found about this process of accessibility. The confusion that comes from this is that the user will once again not receive the required information that they are looking for. This will leave the consumer questioning the museum's integrity and desire to address this issue of accessibility for the less fortunate or disabled.

Required Tasks for Researching Food Allergies:

1) The consumer knows that they need to find a restaurant or other facility in the area or in the museum that is mindful of food allergies for their children. The first task is clicking the 'Visit' button on the navbar and then the submenu provides another button for dining shown here:
2) Once on the page, the consumer has two primary options, the Farmers
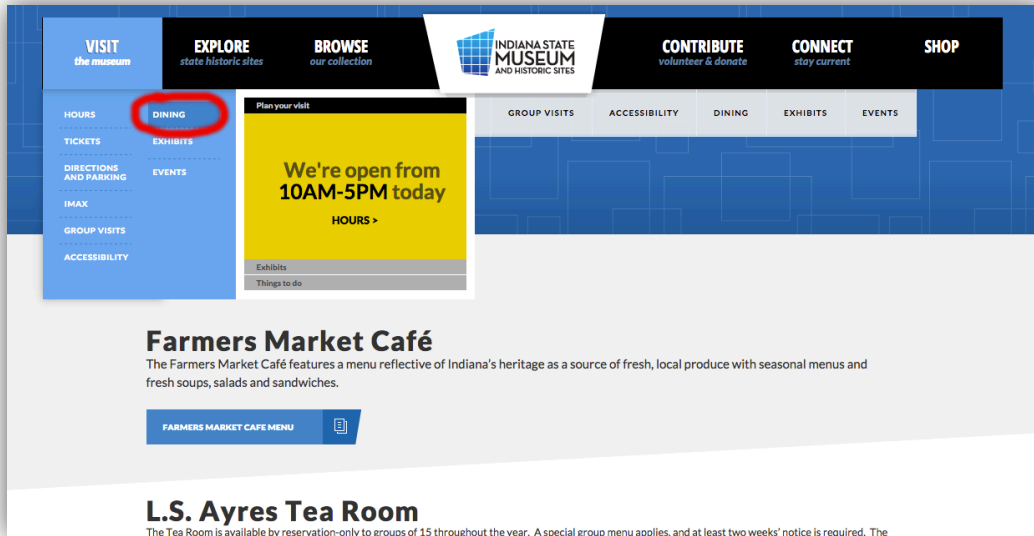
Market Café and L.S. Ayres Tea Room. The Farmers market café provides gluten free options which is important for people who may have a gluten intolerance and most of their food consists of sandwiches so it's easier to modify what can be served and removed from the food. The menu opens in a new tab and clearly states what food has gluten free options too:

The L.S. Ayres Tea Room provided a lot of options of food as well but had more than just deli focused food:

Additional Thoughts on this Task:

The Farmers Market Café opens in a new tab, whereas the L.S. Ayres Tea Room opens on top of the existing site which means whatever activity is taken place, you cannot just close out, but go back to previous page, versus just being able to close the window on the Farmers market menu and resume right where you left off. Not only does this take away from the users convenience, but also consistency of the website which is never good. Websites always need to focus on consistency for the users experience.   As for the food, I would not say that there are a lot of options for the users who are inquiring about this information, but the options that are available are not bad. The consumer should be able to find these options with very little work. Navigating to the dining options will not be difficult and the pdf format provides a clear idea of what food options are available.

Heuristic analysis:

I'm providing my feedback based on the following 10 Heuristics:

Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within a reasonable timeframe.

Match between system and the real world

> The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

User control and freedom

> Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

Consistency and standards

> Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

Error prevention

> Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

Recognition rather than recall

> Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

Flexibility and efficiency of use

> Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

Aesthetic and minimalist design

> Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

Help users recognize, diagnose, and recover from errors

> Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

Help and documentation

> Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

The following heuristics include a rating system of severity based on how badly the users experience and tasks will be affected by the broken portions of the website. This rating system works on the following 5 numbered system:

1/5

The lowest rating to be the least concerned about the user being affected.

2/5

A rating based mostly on esthetics, and probably not too much to be concerned about the tasks being affected.

3/5

A rating that has a much better chance at misleading and confusing a higher percentage of users who visit the site. This level of concern for esthetics also means that the mistakes that were made are far more obvious and poorly executed.

4/5

A rating that definitely needs to be addressed as most users would be affected and unable to perform certain tasks that most websites should be prepared for.

5/5

The user will have no chance at completing the most vital tasks required by the website and will drastically affect the most important purposes of the website.

Global Issues:

1) The search bar does not function properly as the user will search for a keyword such as 'food' and will be given strange search results that are not relevant to the search criteria at all. This image is an example:
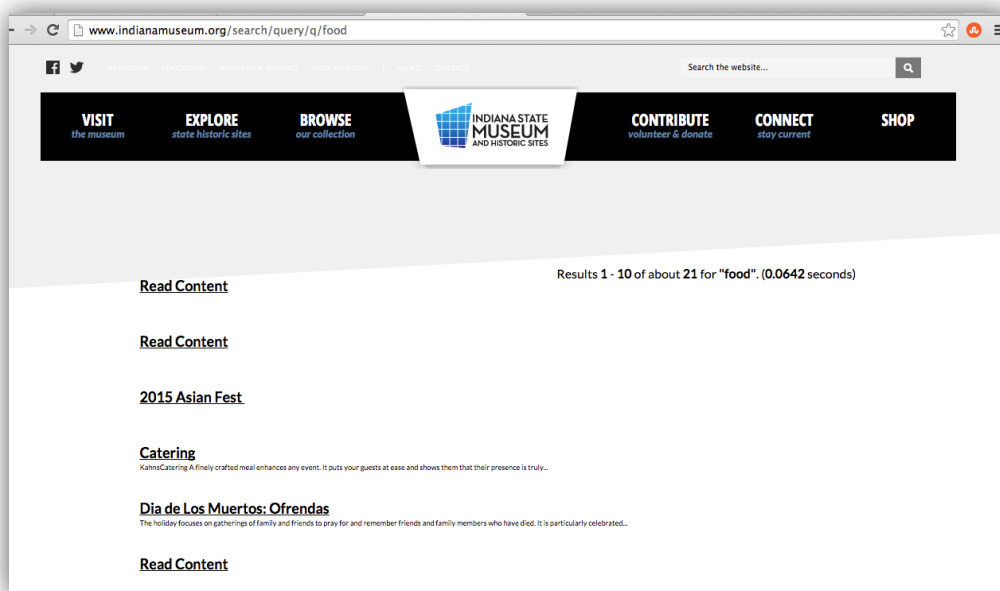
Consensus:
The severity level of this is fairly high because functionality is one of the most important key factors of a website that needs to be considered first. The alternative is that the consumers will have to manually search more on the website for what they are trying to find. The other odd reaction to this is the background going white which causes a real problem for the other hyperlinks that are already white, especially if the user scrolls down the page, it will then be impossible to read them at that point.
Severity rating: 4/5

Heuristics Violated:

Help users recognize, diagnose, and recover from errors
Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

Flexibility and efficiency of use
Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

Error prevention
Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

Consistency and standards
Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

Recommendations:
There are two issues here and they make up a complete overarching problem regarding both front-end and back-end portions of the website. It would be best to hire someone to write a proper search engine for the back-end that allows the consumer to receive accurate results as well as making sure the webpage does not turn white when the page loads the results for the front-end.

2) There is a lot of unused space being exposed throughout this website. For websites, it's generally understood that they will be a little more condensed and the purpose of this is because unused space has no purpose on websites.

The following screenshots are one of the pages where the user can just keep scrolling and there is nothing provided underneath the nav section:
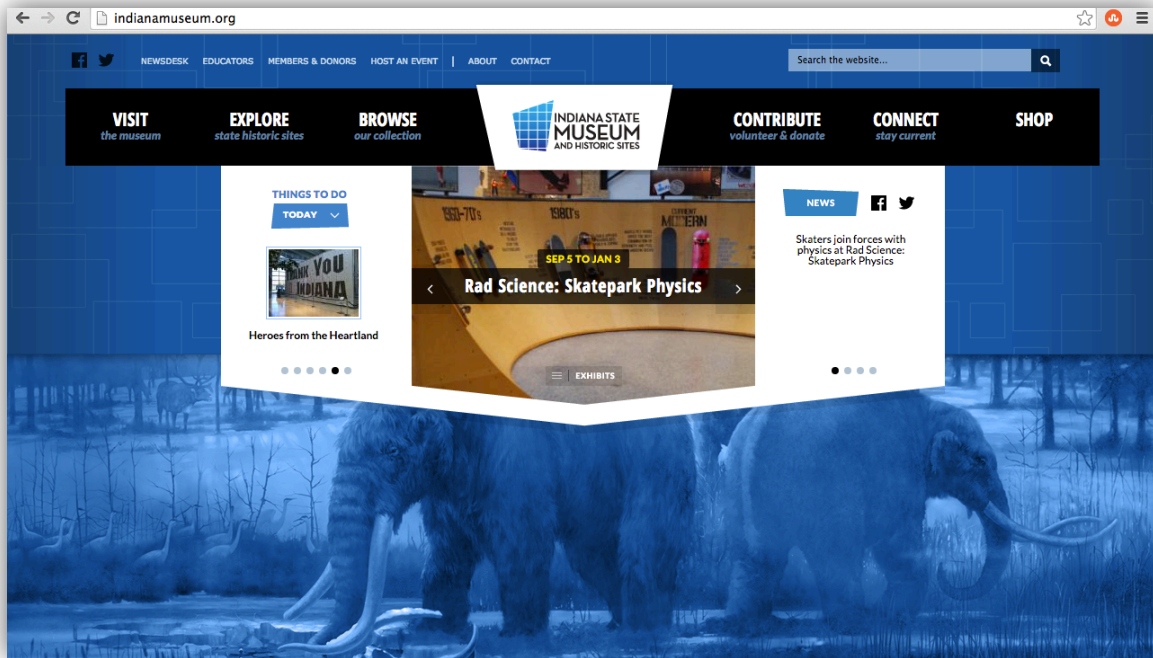

This first image is not that bad. I understand the background image being shown off, but as the user begins to scroll further down, it becomes an unnecessary and bad practice. As we see with this next image, there is more open space and nothing else to click on.
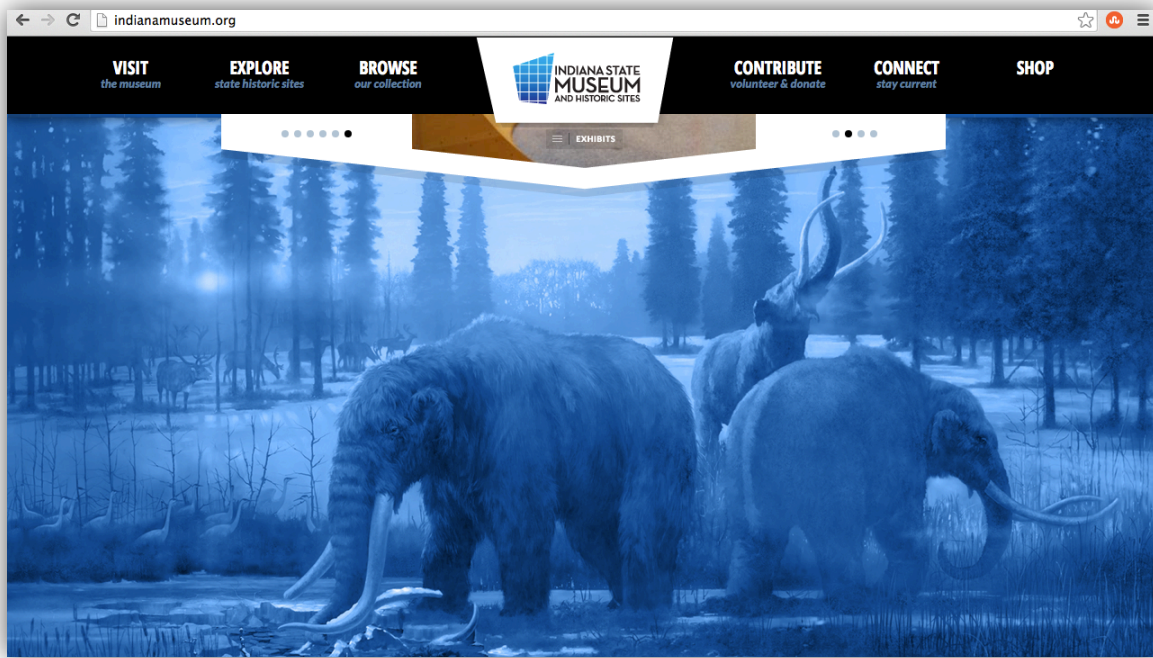
In this next image, we see a completely empty page with nothing but the nav bar space being taken up and no other links or information being provided.
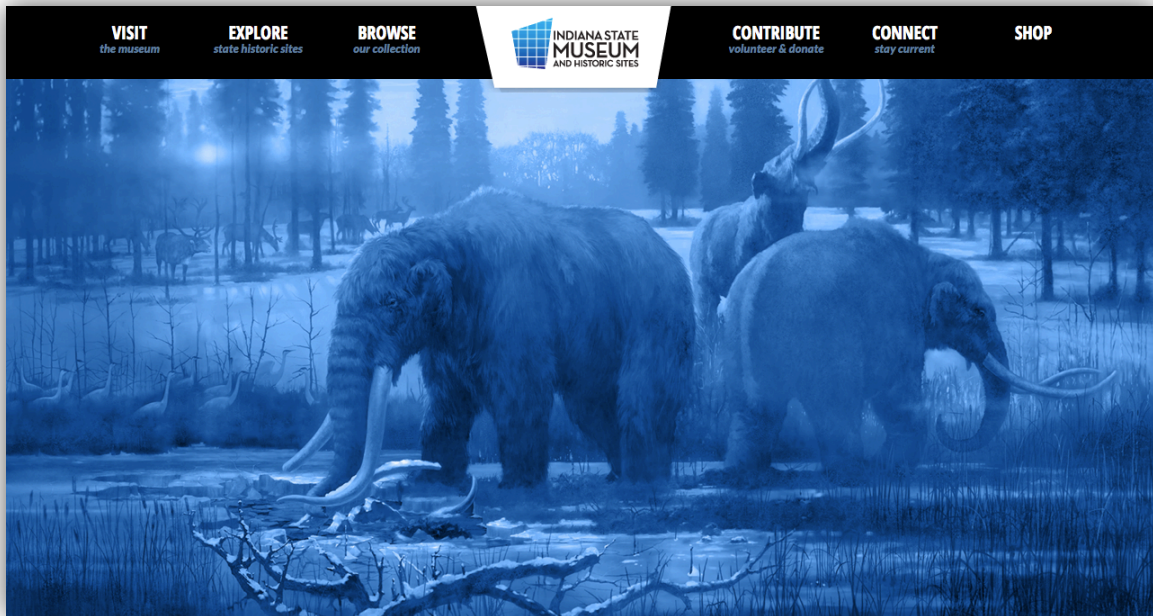
What's worse is if you scroll a little more, the page begins to reveal a strange gray overlay section at the bottom of the page. It's almost as if the end of the div was reached and someone did not consider the div size the same as the picture, which only gives a confusing cut-off point with a large gray background and nothing else. There is also no consistency with a footer on the website as it only displays on certain pages which is an inconsistent design, and distracting.

Consensus:

This is very unprofessional for a website to overlook. All of this space being taken up is unnecessary and unwanted, but I think the gray strip at the bottom of the page is even worse. It's beyond the scope of the unused picture area and heads into the negative section off of the website! This is a poor design and execution, but it does not technically rob the user of functionality, it's just very poorly designed which can be a slight distraction.

Severity rating: 3/5

Heuristics Violated:

Aesthetic and minimalist design
Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

Visibility of system status
The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

Consistency and standards
Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

Recommendations:

The "developers" of this website should not be creating sections where there is a lot of whitespace. It damages the user experience and can cause frustrations in the consumer if it is not fulfilling the needs of the purpose of visiting the site. If too many pages are like this, then people who are less experienced with web browsers may even feel lost. There needs to be more consistency with footers so that there is a way to re-navigate back with ease.

3) The contact page on this website is not a true contact page. The image displayed here shows that there is a lack of functionality but not a complete lack of information for it to serve its purpose.
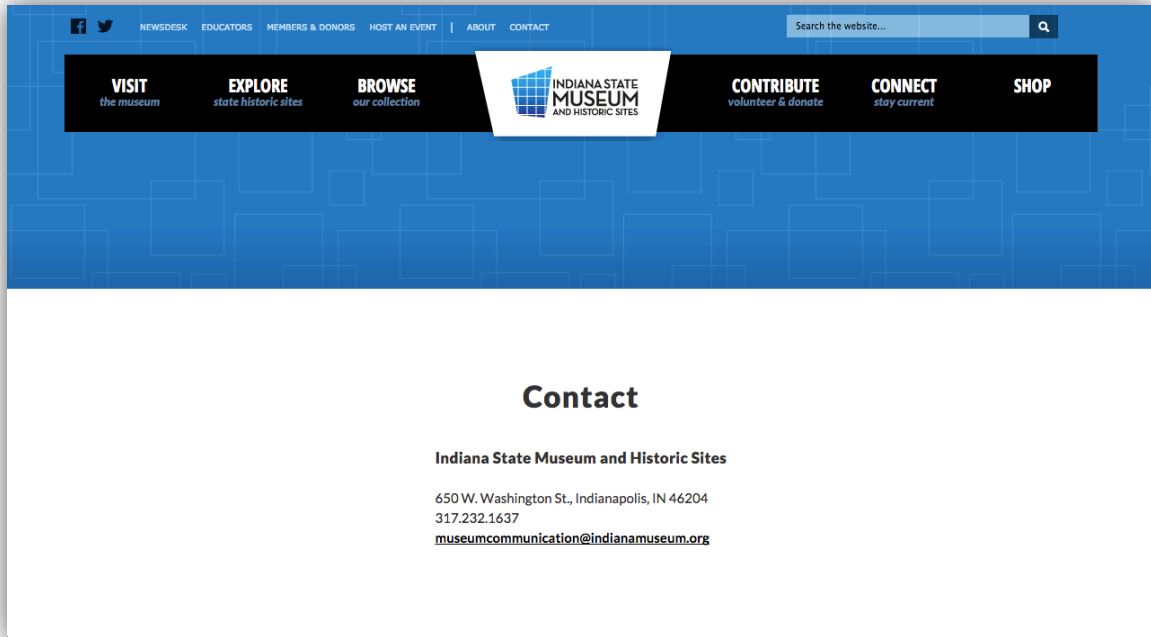
We see here that there is no actual form for the user to fill out. In order to carry out the proper procedures, the user is not supposed to be limited to just receiving some base information, and have no way of asking a specific question and going through the proper channels at the facility. This is another instance where the functionality is removed from the website and the user. The information is so minimal that is loses most of its purpose.

Severity rating: 4/5

Heuristics Violated:

User control and freedom
Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

Consistency and standards
Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

Flexibility and efficiency of use
Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

Recommendations:

It is not as important that a non-business website is without a functional contact page, but when a large scale business is trying to attract consumers and profit, it is crucial to have this type of functionality built into your website. It is essential to integrate a proper contact page that is written as a web application. This will ensure that the website includes more essential functionality that is required for the user to have the proper experience that they should receive.

Task Issues:

1)   One of the task issues was trying to plan accordingly for different events, but the problem was that the calendar of events always blacked out the additional days that the user would click on. This problem removes the ability for the user to clearly see which days they are looking at. Most people will not have a problem if they can look at the other two days before and after the event, as this will help deduct which day is actually blacked out. The problem is that no one should have to run into a problem like that. It's a portion of the website that is broken and should be properly fixed.

Severity rating: 2/5

Heuristics Violated:

Aesthetic and minimalist design
Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

Help users recognize, diagnose, and recover from errors
Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

User control and freedom
Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

Consistency and standards
Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

Recommendations:

The user needs to be able to see which days they are selecting for the events they are interested in scheduling. If this is not fixed, the consumer will still be unable to clearly see what they want to schedule.

2)   Another task issue that I addressed above was a problem with not being able to purchase tickets online. The option is presented to the consumer and in these days of the Internet and computing, everyone should be able to perform these types of tasks for convenience. Unfortunately, the consumers are not able to carry this action out and it is one of the most important functions for a website like this. As mentioned above, when going through the process, the user is unable to purchase the tickets because they are always brought to an error screen so they are unable to order anything online.

Severity rating: 5/5

Heuristics Violated:

User control and freedom
Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

Consistency and standards
Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

Flexibility and efficiency of use
Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

Error prevention
Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

Visibility of system status
The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

Help users recognize, diagnose, and recover from errors

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

Recommendations:

This is a crucial part of the website that must be resolved in order for the consumer to complete the task. If the museum cannot find any developers to fix this on the website so that the consumer can actually order tickets online, then a different system needs to be in place. The best method is to have this function working on the site, as this is a very common piece of functionality today. Otherwise, the consumer should be able to submit a form for ordering the physical tickets to have shipped to their home or picked up at will call. There needs to be an option for the consumers, because they need to know that they will have admittance into the event before they drive there.

3) The next task that the user is to carry out is to find information for accessibility for the disabled. The problem with this task is that there's only a disclaimer and a contact name available. There is no other specific information about locations around the building for accessibility. This does not assist the users in their searching for accessibility.

Severity rating: 4/5

Heuristics Violated:

Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

cognition rather than recall
Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

Recommendations:

The users have no way of finding the information that they need. There is one contact that is provided, but no guarantee that this individual will be available to answer any questions. The proper and relevant information is what is required for this. Providing a visual of images and detailed information would be much more useful than a disclaimer.

4)   The last major problem that I noticed for the user's tasks was to find directions to the museum. There is a very unclear mini-map that is provided but no useful documentation or other directions to the museum. The only other link posted takes the user to google maps where they are expected to find the location of the museum themselves. This only makes the consumer do more work and does not assist with any useful information for the task attempting to be completed.

Severity rating: 3/5

Heuristics Violated:

Help and documentation
Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

Consistency and standards
Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

Flexibility and efficiency of use
Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

Recommendations:

The user is not provided with any helpful information, except with an external application to search for it on their own. This can be resolved very easily by simply adding several directions from major highways such as I69, and I465 coming from several different directions. This, along with a couple of detailed maps would greatly assist the consumers with trying to carry out their tasks.

Final Overall Consensus:

While the website had a couple of good directions to bridge clear, and concise executions for the user, this website has several areas that are in dire need of immediate assistance from developers who understand the needs of the user, and web development consistencies for proper implementation and functionality. When a website goes live to the public, especially one that is designed to work for general public admission, there are zero excuses for this level of oversight. The Indiana State Museum carries a long history to its name, and an organization's website represents the pride of their name and image. This website does not help them in this endeavor and must be remedied immediately in order to provide a functional, and proper user experience to the public.