Shedding light on the hidden barriers in

Shedd Aquarium's purchasing pathway.

Team KelpDesk's Insights from 16 Eye-tracking Tests

May 07, 2025



a × Pratt

KelpDesk





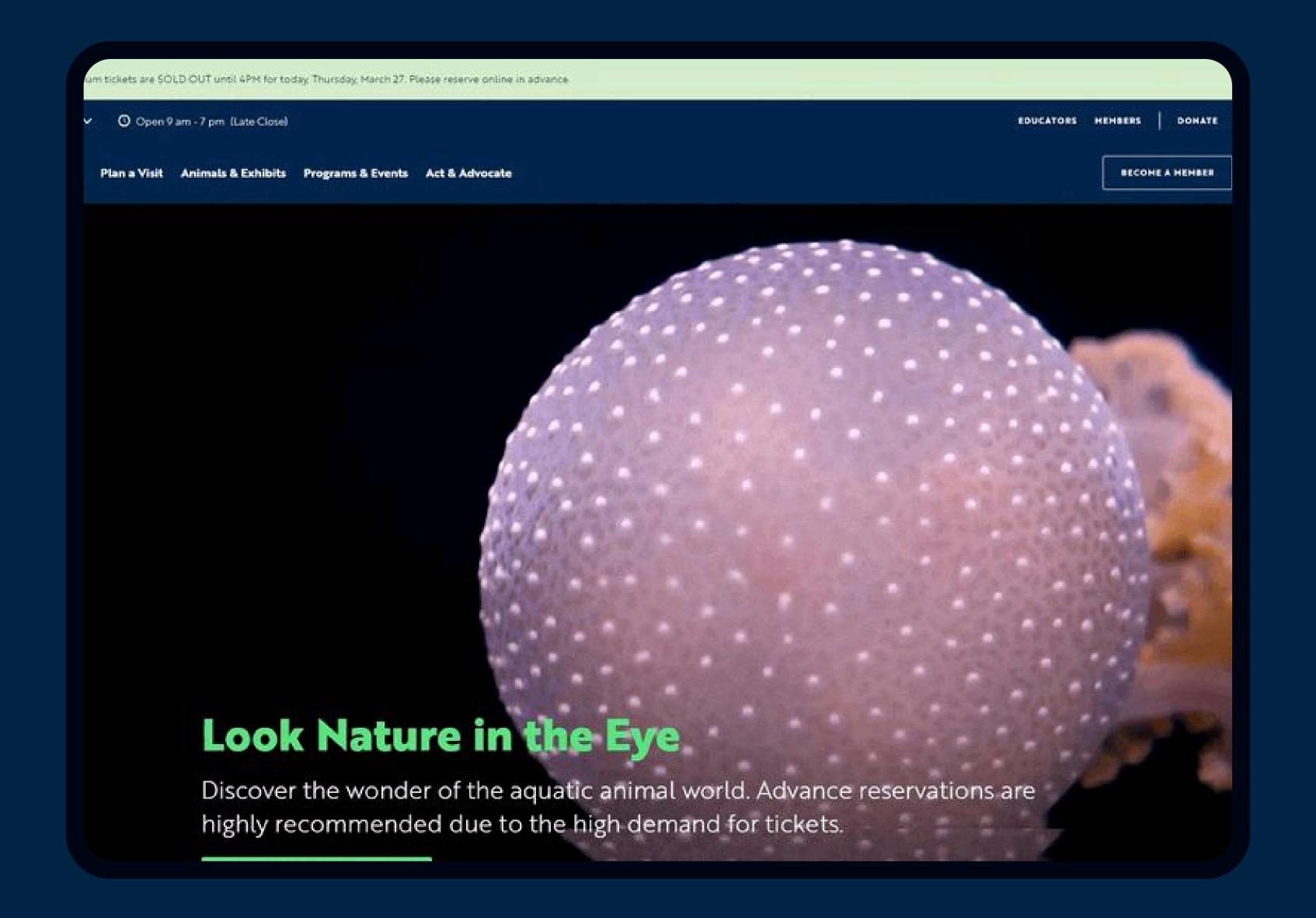
Hridya



Iris



Saskia



Surface-Level Findings

A Quick Look at What We Uncovered and Our Solutions

93.75%

Users Got Stuck Navigating the **Payment Process**

Solution: Give users more autonomy to move back-and-forth and save their progress during these actions

87.5%

Users Struggled to Make Decisions on certain screens

Solution: Make the UI elements and text content more easily digestible to reduce cognition overload

93.75%

Users Felt Confused With Pricing

Solution: Display the prices upfront and highlight the prices visually so that they are easier to process

Agenda

- 1 Defining the Journey
- 2 Diving Into Research
- 3 Surfacing Key Issues
- 4 Anchoring What Comes Next



Brief Intro

Client: Shedd Aquarium

Focus: User experience on ticketing purchase pathway for individual and family visitors

Login/ General/ Date Time Ticket Quantity Add-on Check-out Guest City Pass Field trip Selection Selection Selection Selection Selection Confirm

Our Research Question

How might we make a better Shedd Aquarium's ticket purchasing process for individual and family visitors to better support their visits?

Deconstructing the question



Visual Design

How does the use of visual indicators impact the task completion?



Content Clarity

Do users easily understand and differentiate ticket categories?



Mobile Experience

How do mobile users interact with the system compared to desktop?



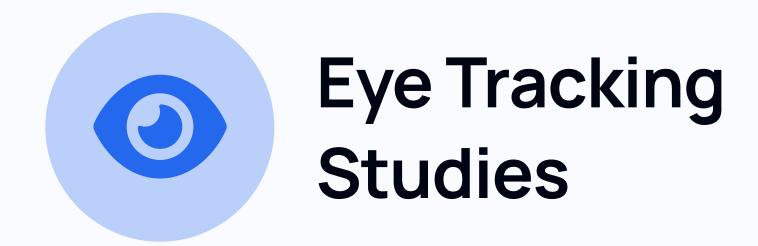
Process efficiency

How does the number and sequence of steps impact decision-making?



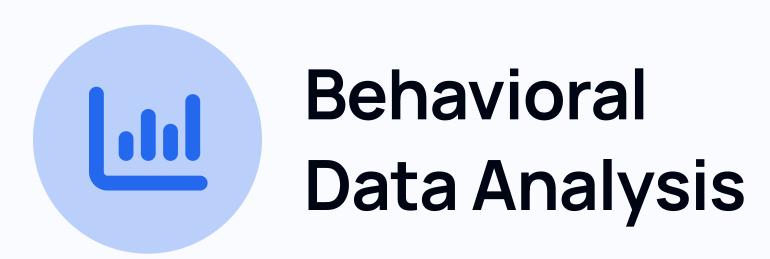
Research Methodology

Methods and Tools



16 Eye Tracking Usability Sessions

- Pre-Test Demographic Survey
- 9 Desktop and 7 Mobile Eye Tracking Test
- Post-Test Feedback & Pattern Analysis



Shedd Aquarium's GA4 Dashboard

- Analysed visit trends and user pathways
- Identified high-friction touchpoints
- Cross-referenced with observed behaviours

Pre-Interview Analysis

Audience Overview



Age Group

18-35



Long-term Relationship

27%



Parent or Caregiver

27%



2nd Language English

18%



Regular Cultural Site Visitors

80%

Frequency of visits varied regardless of personal traits.*

*read more in <u>appendix</u>

Post-Interview Analysis

Ease of Use Score

100

69.4

Functional but with room for improvement

Our average System Usability Scale (SUS) Score of 69.4 suggests borderline usability*

*read more in <u>appendix</u>

Interview Analysis

What worked well

14/16 users

Easily found the "get tickets" button

7/7

7/9

"I was looking for where to buy tickets and it was right there on the homepage."

11/16 users

Used green buttons to complete the task

5/7

G 6/9

"I clicked through (using the green button) just to get through this page."

10/16 users

Found guest checkout useful and reassuring

5/7

5/9

"I didn't want to give my information so I continued as guest"

*read more in appendix

Interview Analysis

Where users faced friction

15/16 users

Got confused by inconsistent pricing

6/7

9/9

"I understood the pricing map a bit, but there's no key or labels to double-check anything."

15/16 users

Got stuck due to unfamiliar navigation

7/7

9 8/9

"If none of these dates work for me, I can't close the window. That's annoying."

14/16 users

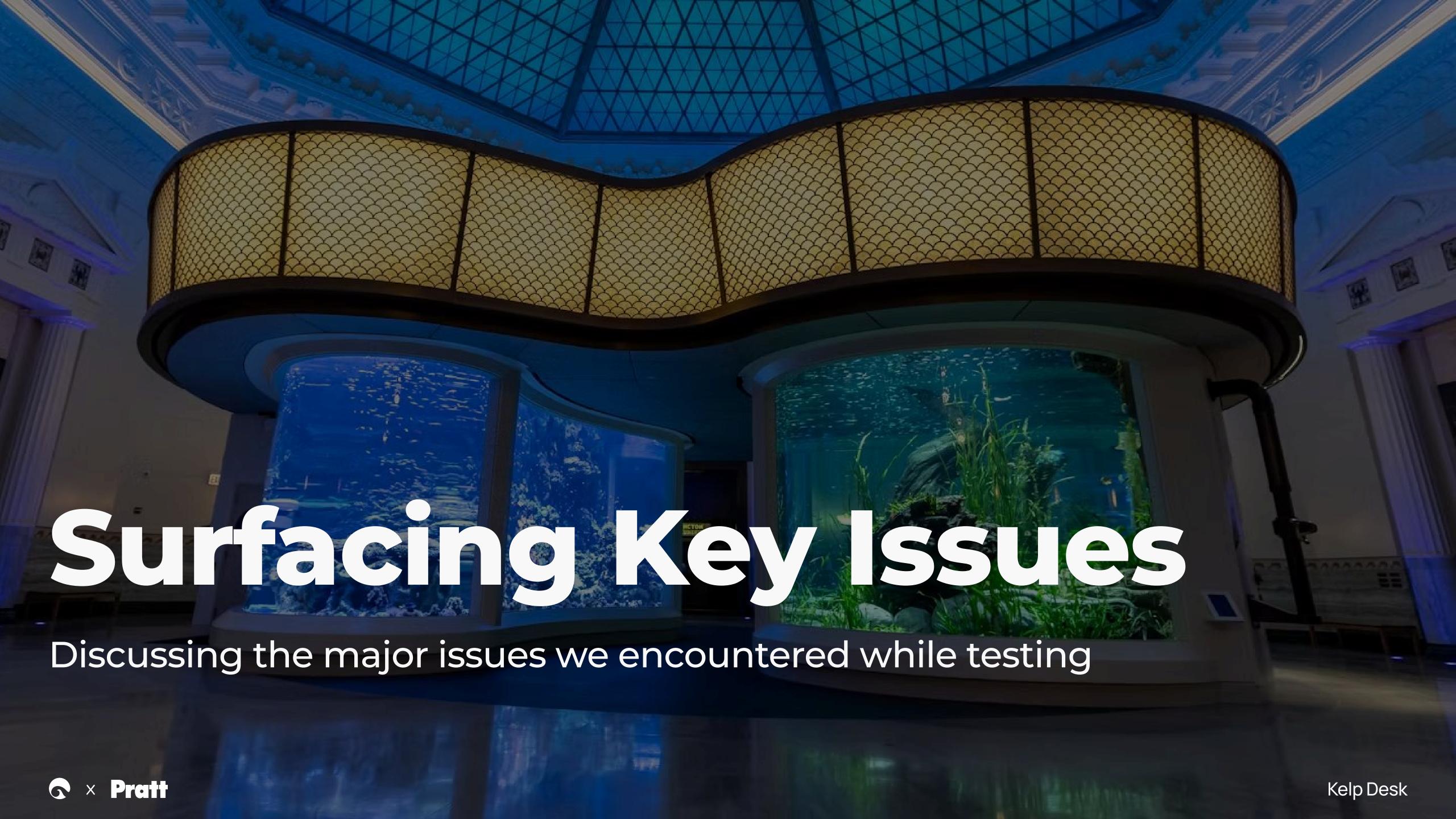
Hesitated at calendar, time and add-on pages

7/7

7/9

"There was so much information to scan and understand after selecting a day"

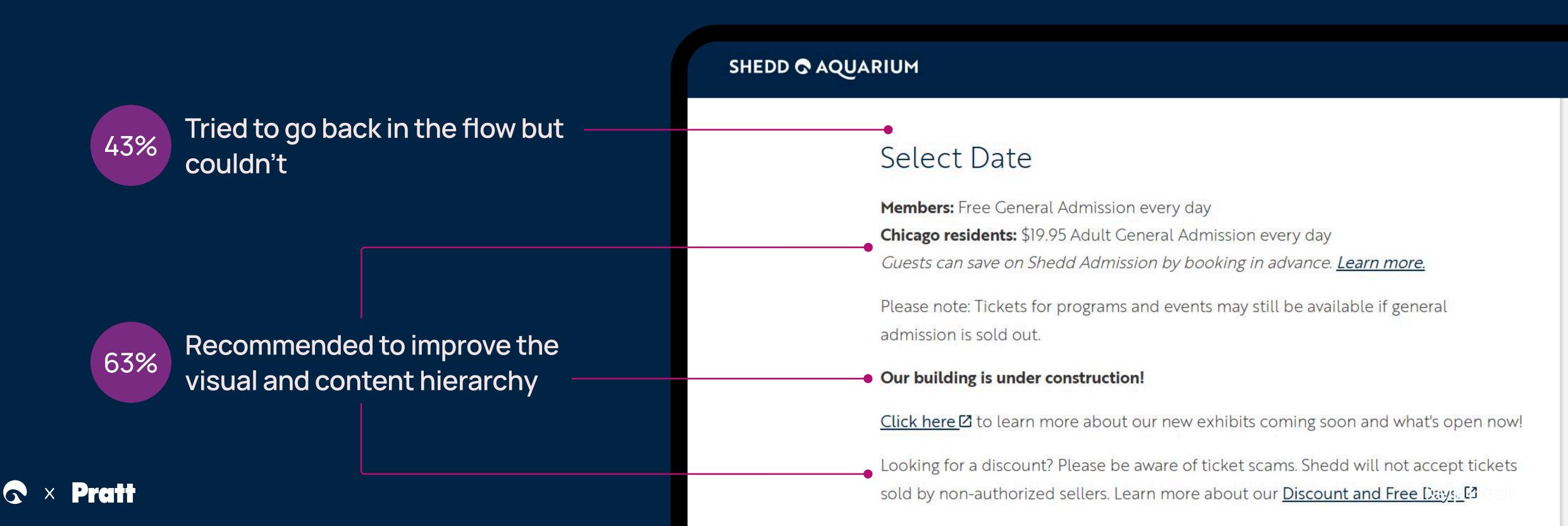
*read more in appendix



Severity: Medium

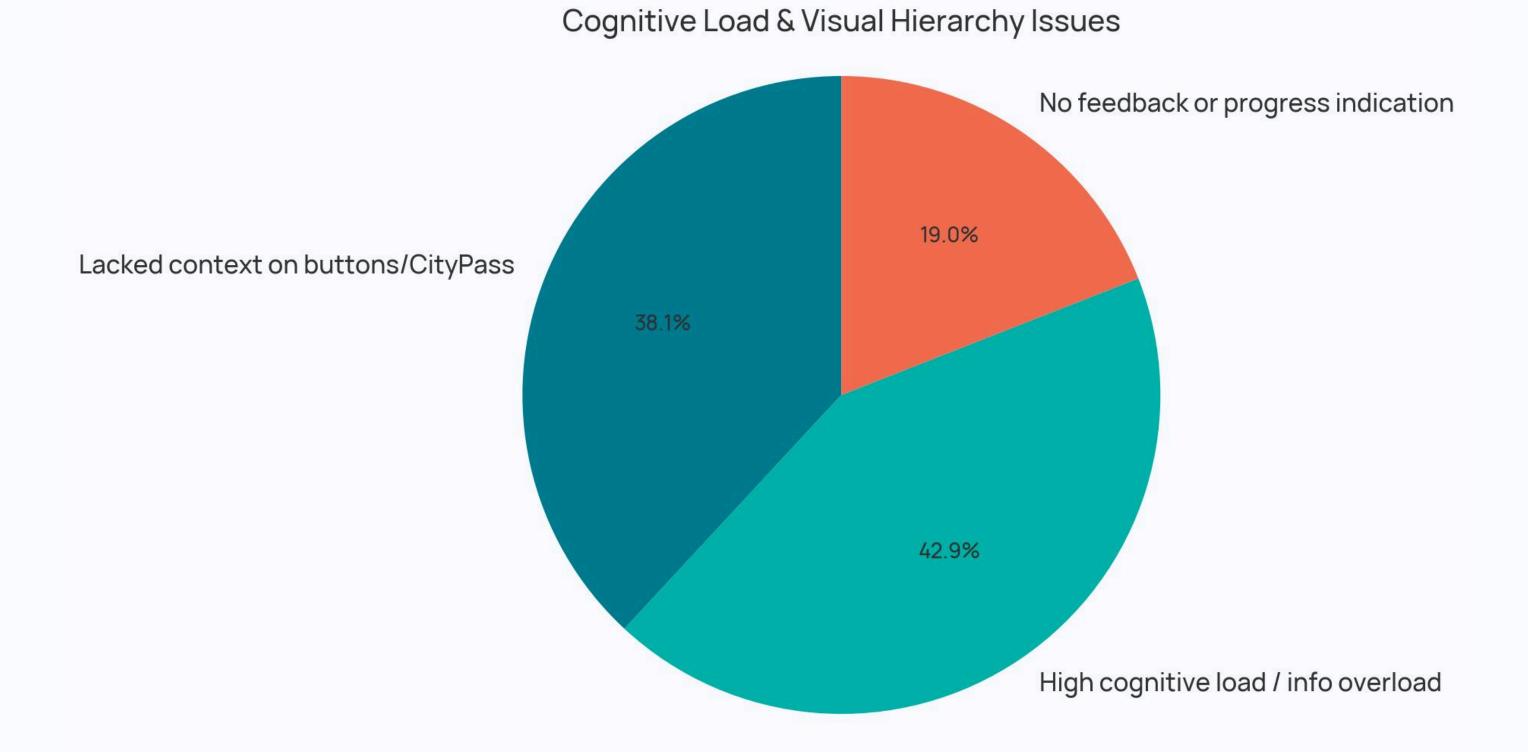
Users Felt Trapped in a Rigid Flow With No Autonomy to Navigate

Lack of feedback, unclear buttons, and no way to move back led to frustration and dropoff, especially when information was dense.



Navigation Cognitive Overload

According to our interviews, around 42.9% of participants encountered information overload and 38.1% of them were confused by the lack of context of the CityPass

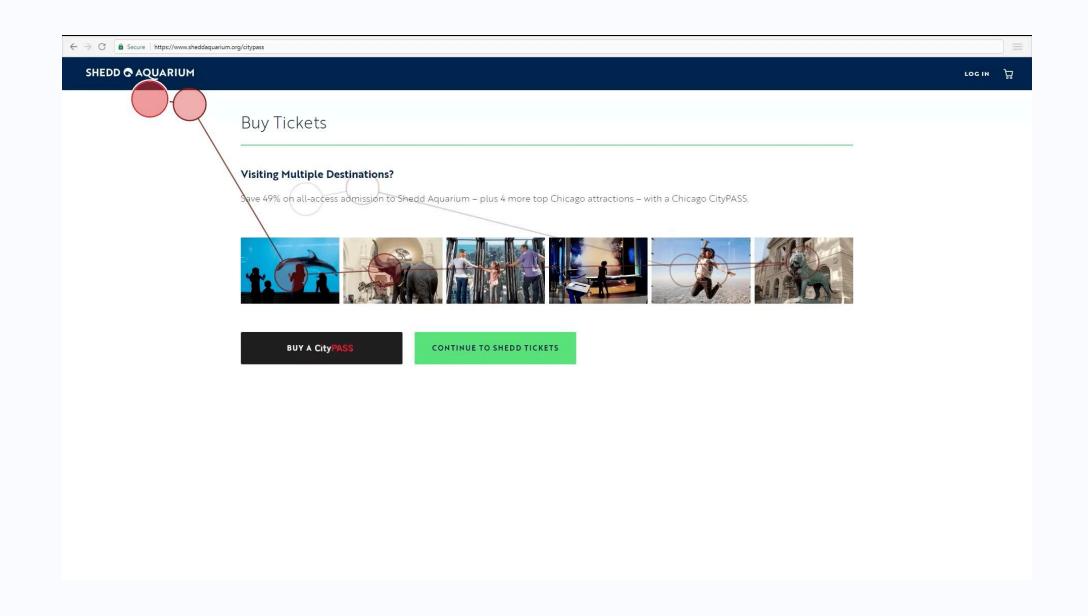


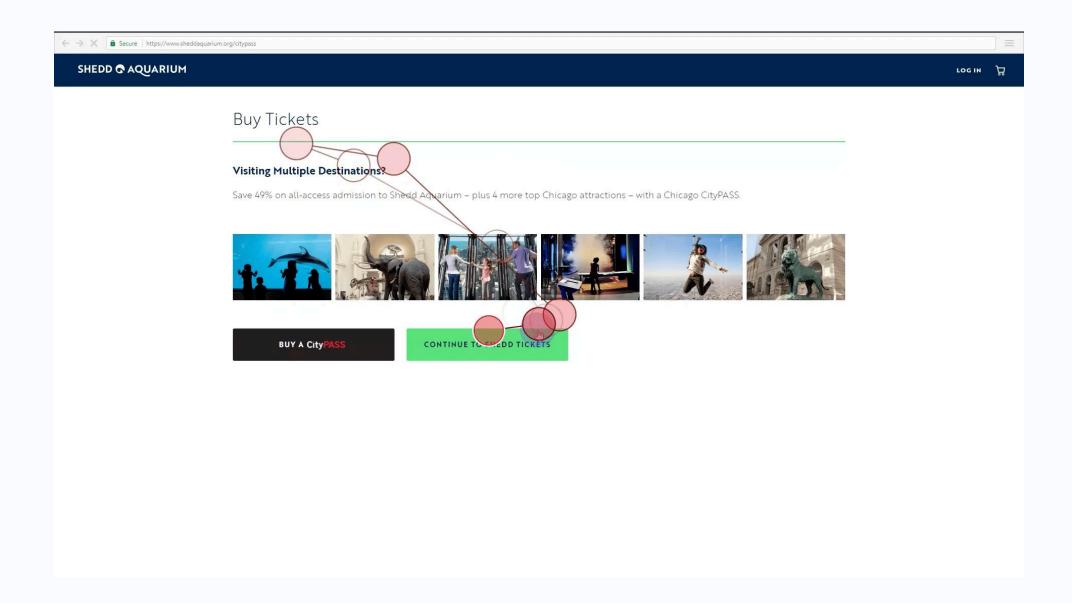
"If none of these dates work for me, I can't close the window. That's annoying."

-Participant explaining frustrations with the lack of navigation buttons

Navigation Freedom to go back-and-forth

Users want the freedom to go back and forth but find out that there isn't any navigation buttons.





Navigation Recommendation Including Navigation Buttons

What we saw:

Users actively relied on the "Back" button during the ticketing flow and got confused with the irregular positioning of the green buttons

Clear, consistent navigation reduces cognitive load and builds trust

- Consistent placement of next buttons
- Back buttons throughout the flow
- Additionally: An interactive sticky stepper with more information about the ticket, admission, etc.

Users have high cognitive loads to understand the different ticket options

Severity:

Medium

Different pages of add-ons and must-see tours, long information for each section

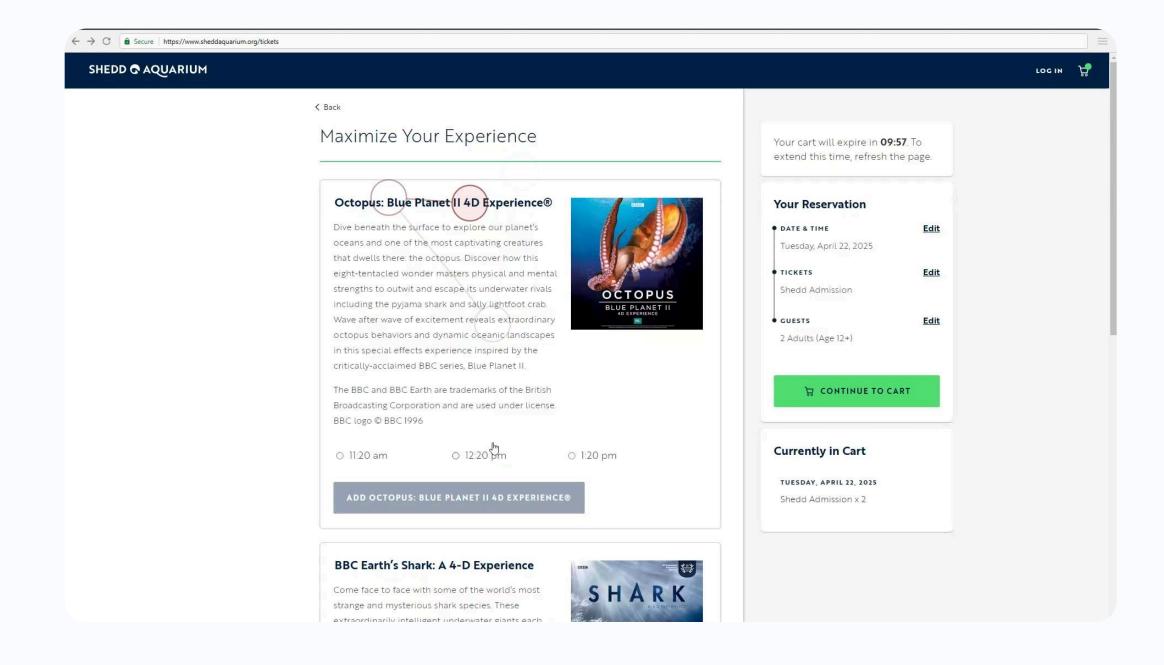
12 pm (Enter between 12 pm and 12:30 pm) Non-Chicago resident: \$40.20 Adult, \$30.20 Children 1 pm (Enter between 1 pm and 1:30 pm)
Non-Chicago resident: \$40.20 Adult, \$30.20 Children Tried to go back to the general 2 pm (Enter between 2 pm and 2:30 pm) 56% Non-Chicago resident: \$38.70 Adult, \$29.20 Children ticket page to double-check after finding add-ons on the 3 pm (Enter between 3 pm and 3:30 pm) Non-Chicago resident: \$38.70 Adult, \$29.20 Children next page SELECT SHEDD ADMISSION Ignored the Must See Tour 43% because of the hidden position-**Must See Tour** V **Night Dives: Illinois Resident Free Evenings** ~ • × Pratt

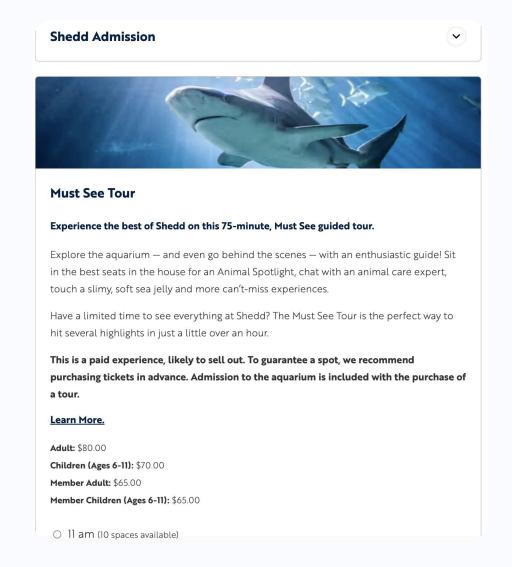
Add-ons

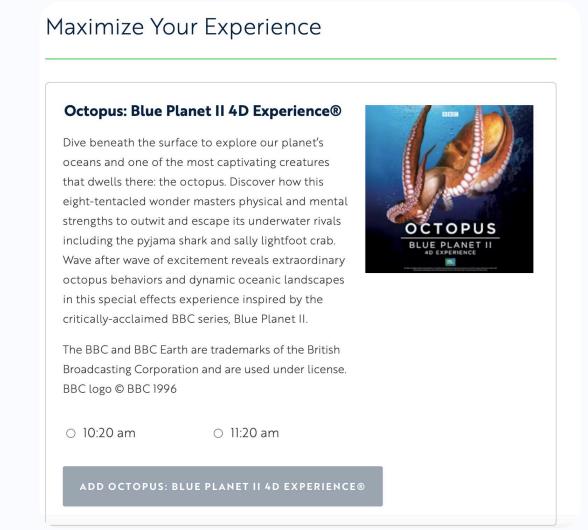
Confusing introduction of "Must-see tour" and add-ons

Placement of the add-ons: "Must see tour" is placed under the "General admission", while the "add-ons" are placed at the next page.

Visitors ticketing flow got disrupted as they took time understanding the different options.





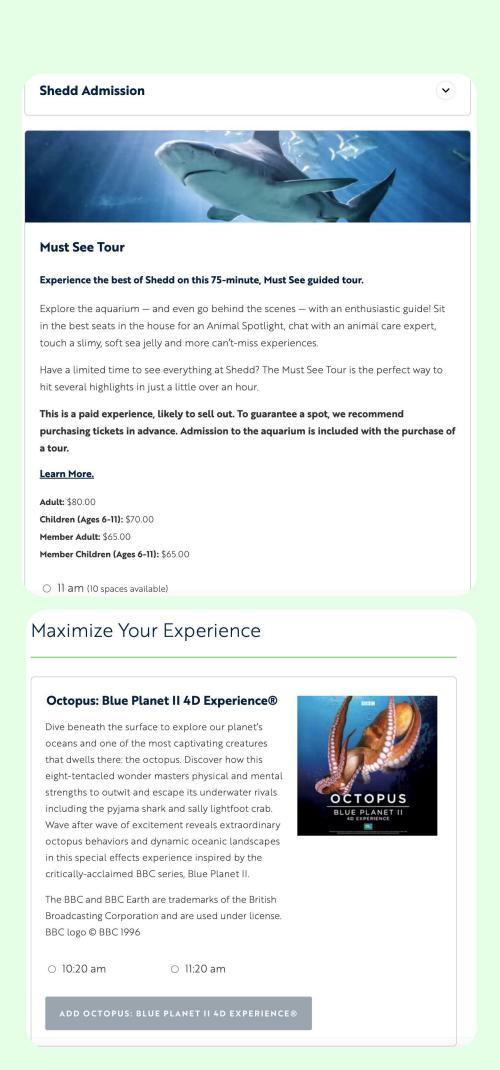


Actually when I saw the add-on page after seeing the general tickets and must see tours, I got confused. I don't clearly know the difference, it would be helpful if the website can show the info more clearly and effectively.

- Participant

Add-ons Recommendadtion Rename and combine the sections to enhance clarity

- Rename "Must See Tour" as "General Tickets with Exclusive Tour" to let the visitors know what's the difference between general tickets and tour tickets
- Combine the General Ticket page and the Add-on page, and use accordions
- Add a comparison sheet or short explanation on the different types of tickets



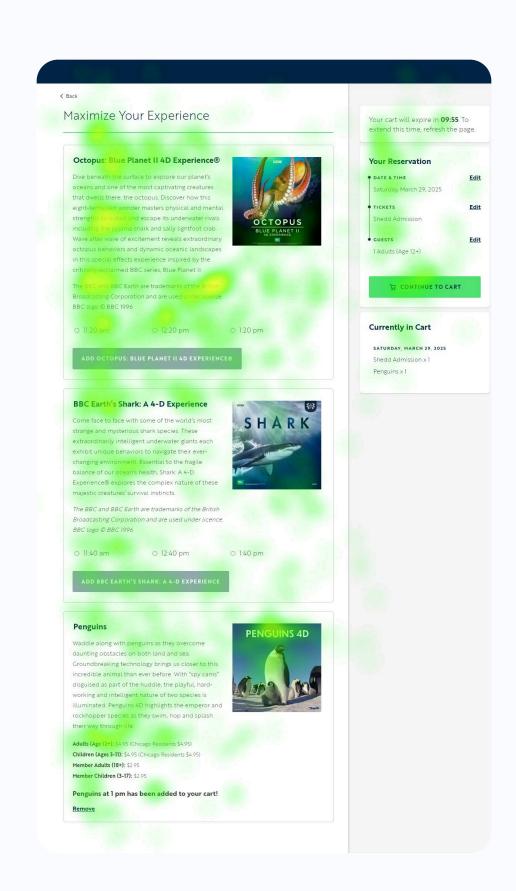
Add-ons

High cognitive load for browsing add-ons descriptions

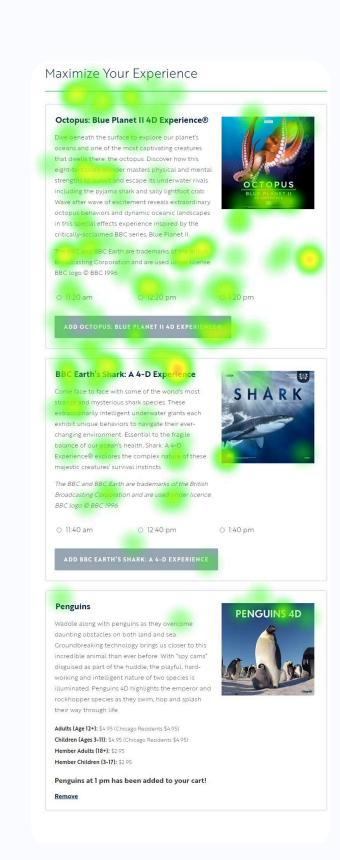
Too much information: Many users took a long time read through and process these information.

Extra scrolling down step: Users might fail to find the right add-on without scrolling down.

The high cognitive load plus with the additional process for users might cause a big business loss.



Too much info to read



Failure on finding add-on because of not scrolling down

Add-ons Recommendadtion Using keywords and short descriptions on add-ons

- Shorten the descriptions to make all of the add-on options appear on the screen
- Using accordion on each add-on to make the users browse the options at one glance

Users Struggled to Make Confident Decisions on the Calendar & Time Pages

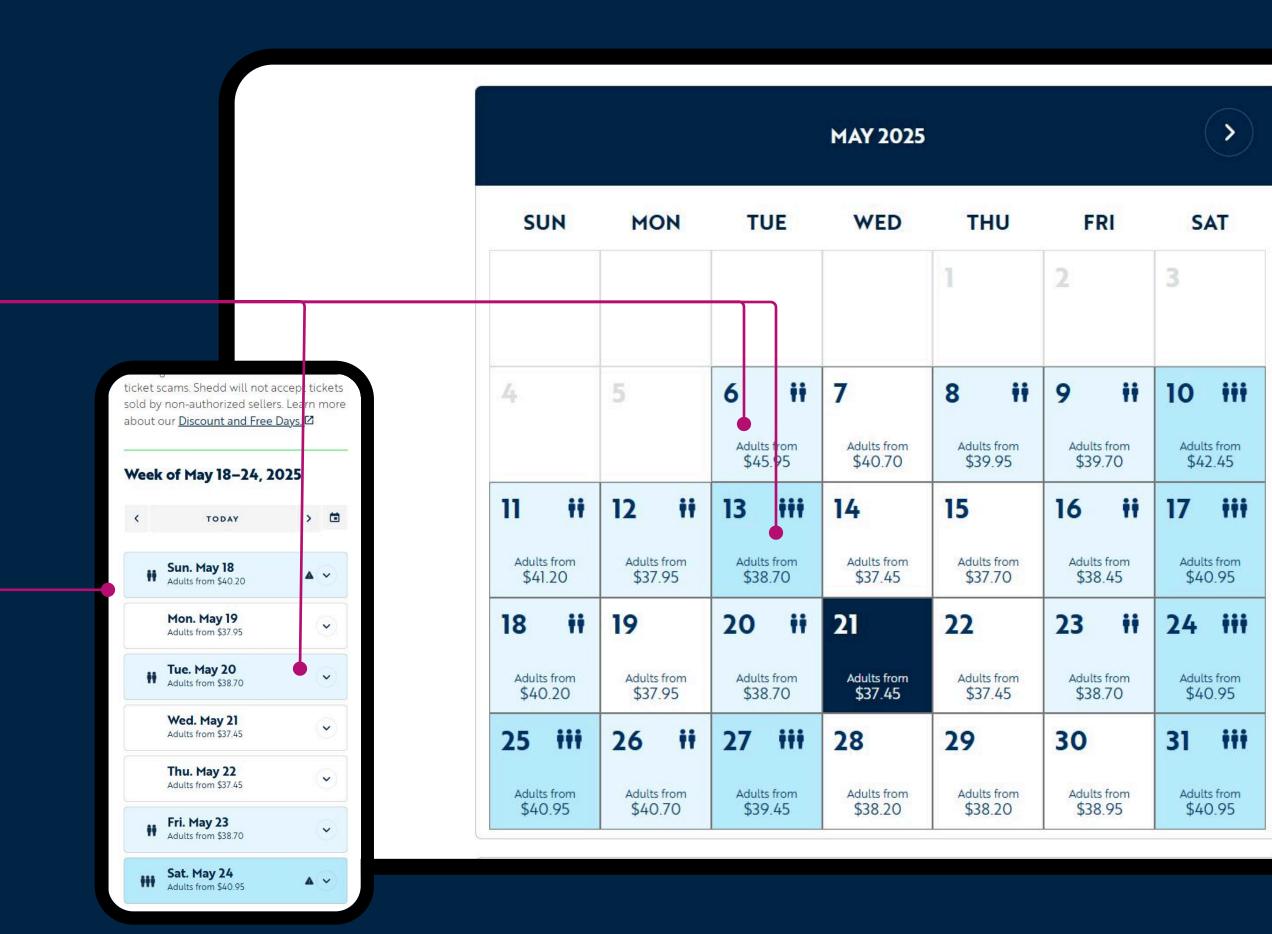
Severity:

Medium



Confused by color and icon 56% systems without a legend

Unfamiliar with Calendar Ul 43% on mobile devices

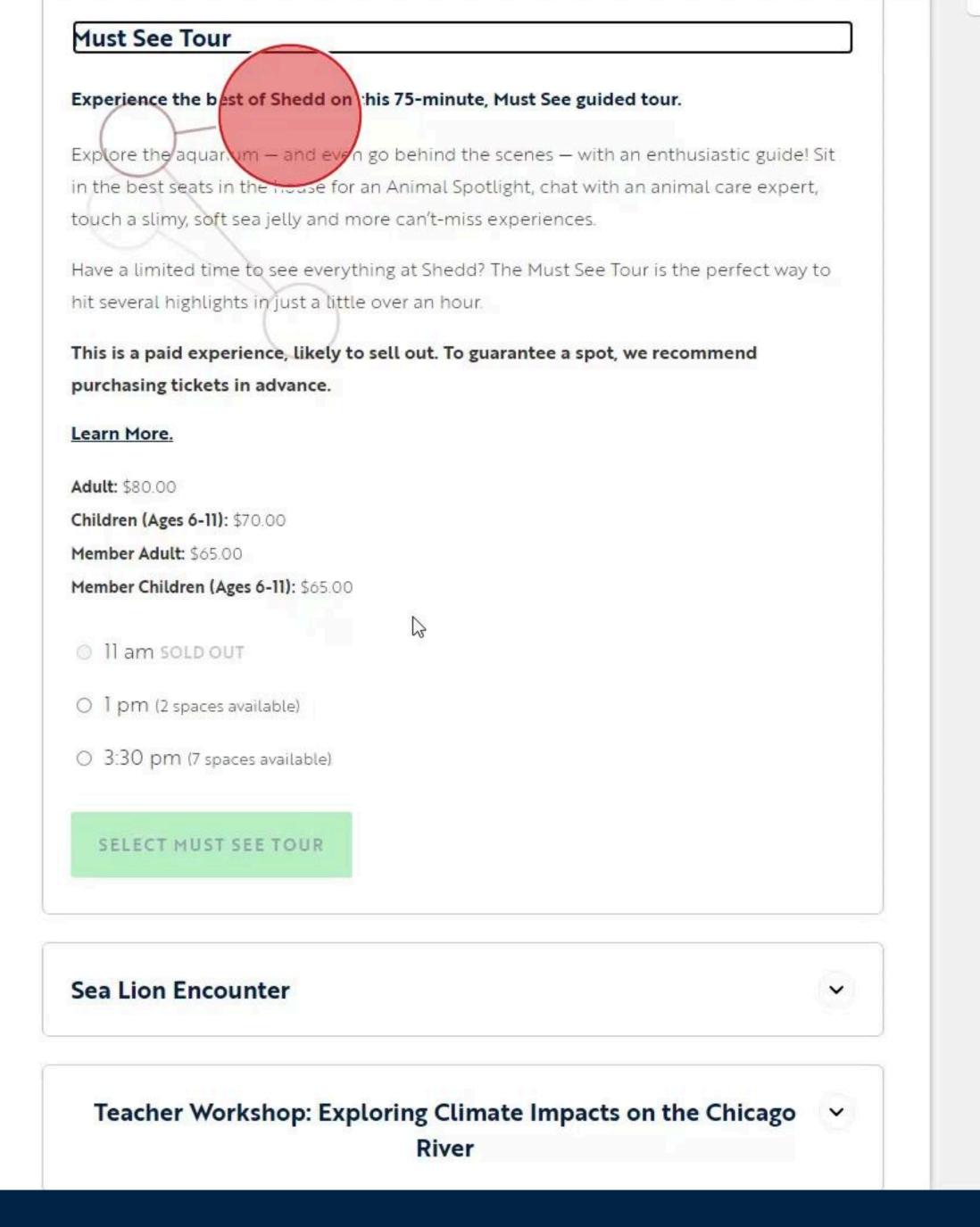


Calendar & Time Users didn't just glance, they lingered.

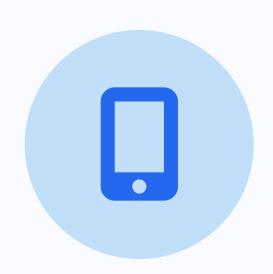


Time Slot screen had the

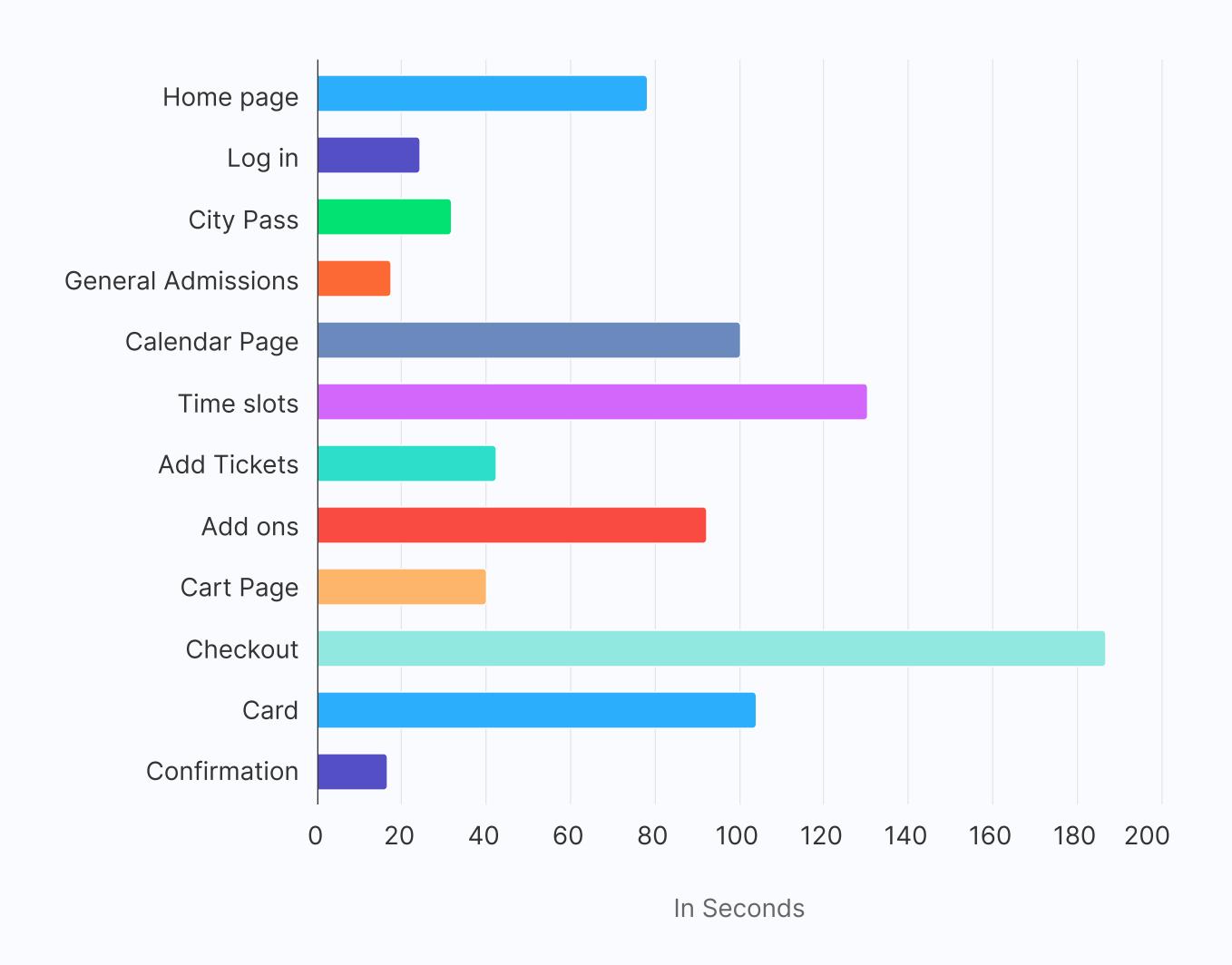
- highest fixation count (243,000ms)
- total fixation time (624 fixations)



Calendar & Time Users didn't just glance, they lingered.



Calendar + Time Slots were the **2nd and 3rd longest time spans** in the flow.



"I didn't understand what the colours were or what all the text about holiday period or discount periods were. It did not stand out."

- Participant remarks post-interview after successfully purchasing ticket

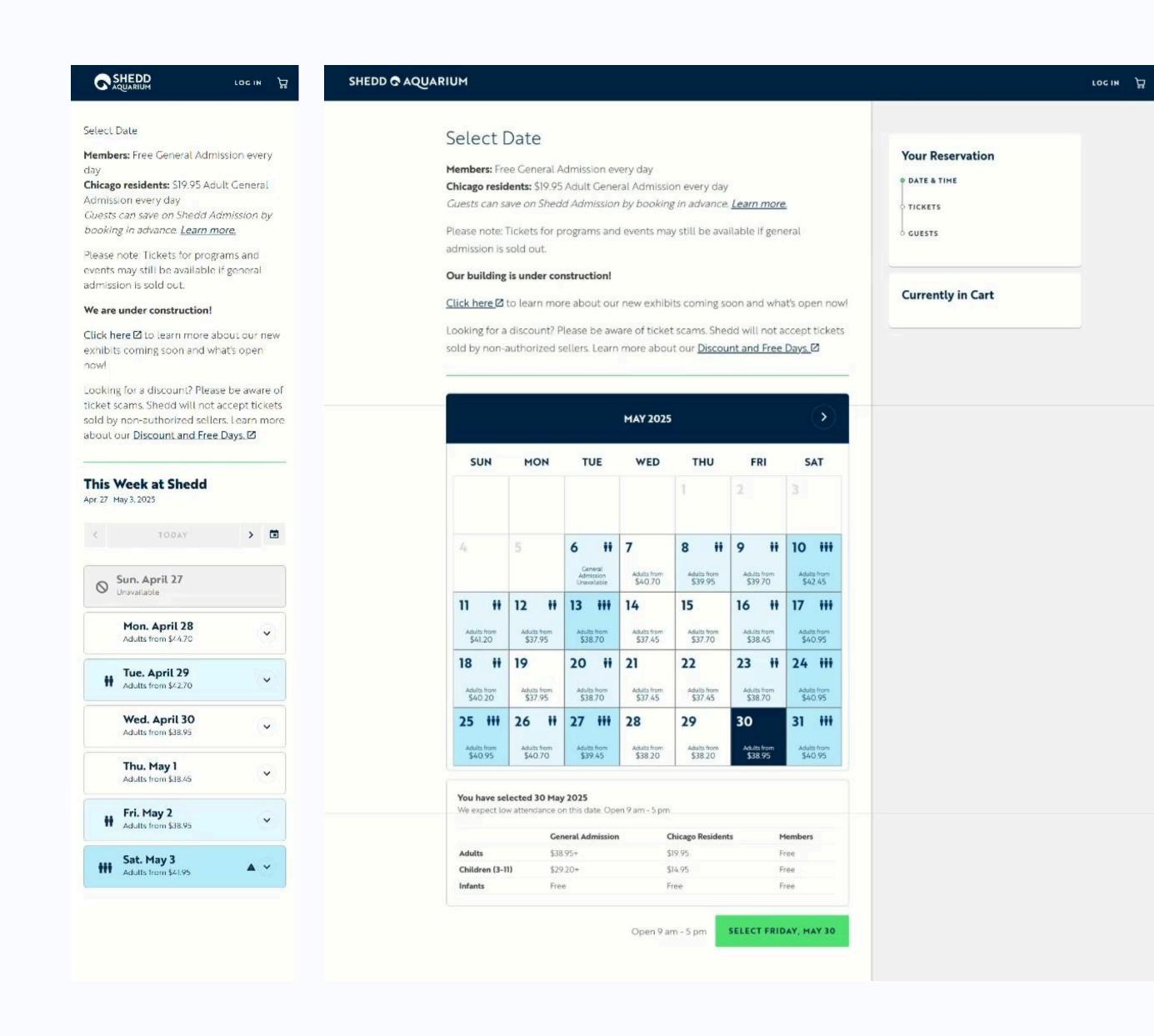
Calendar & Time

Users Worked Hard Just to Understand the Calendar

Users were still figuring out what everything meant, which led to decision fatigue.

They are hesitating, circling, and checking

"I also didn't look into any of this. It seems like too much."



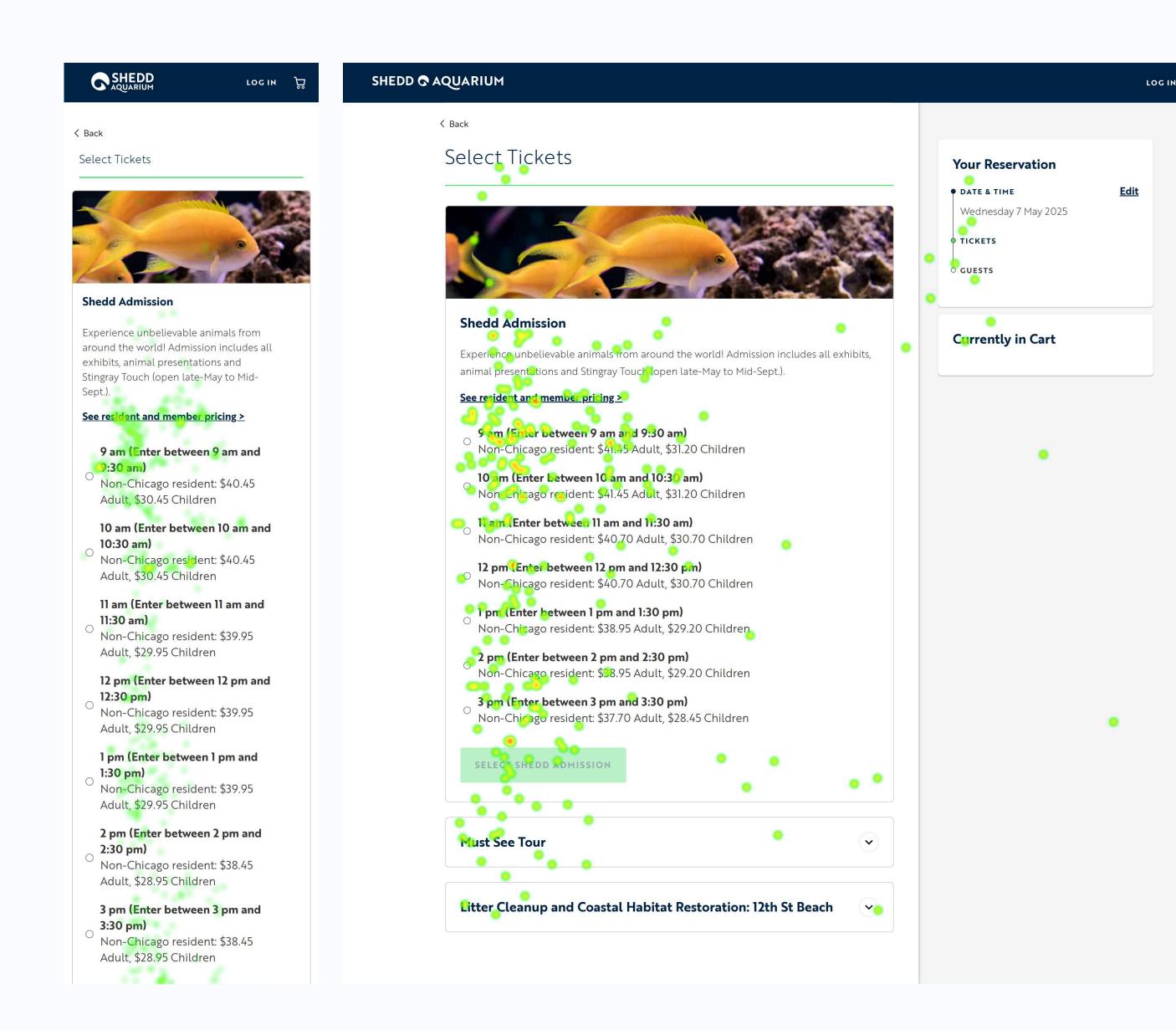
Calendar & Time

Cognitive Exhaustion Hits by the Time Slot Page

After putting in all the effort on the calendar, users skimmed the time slot page.

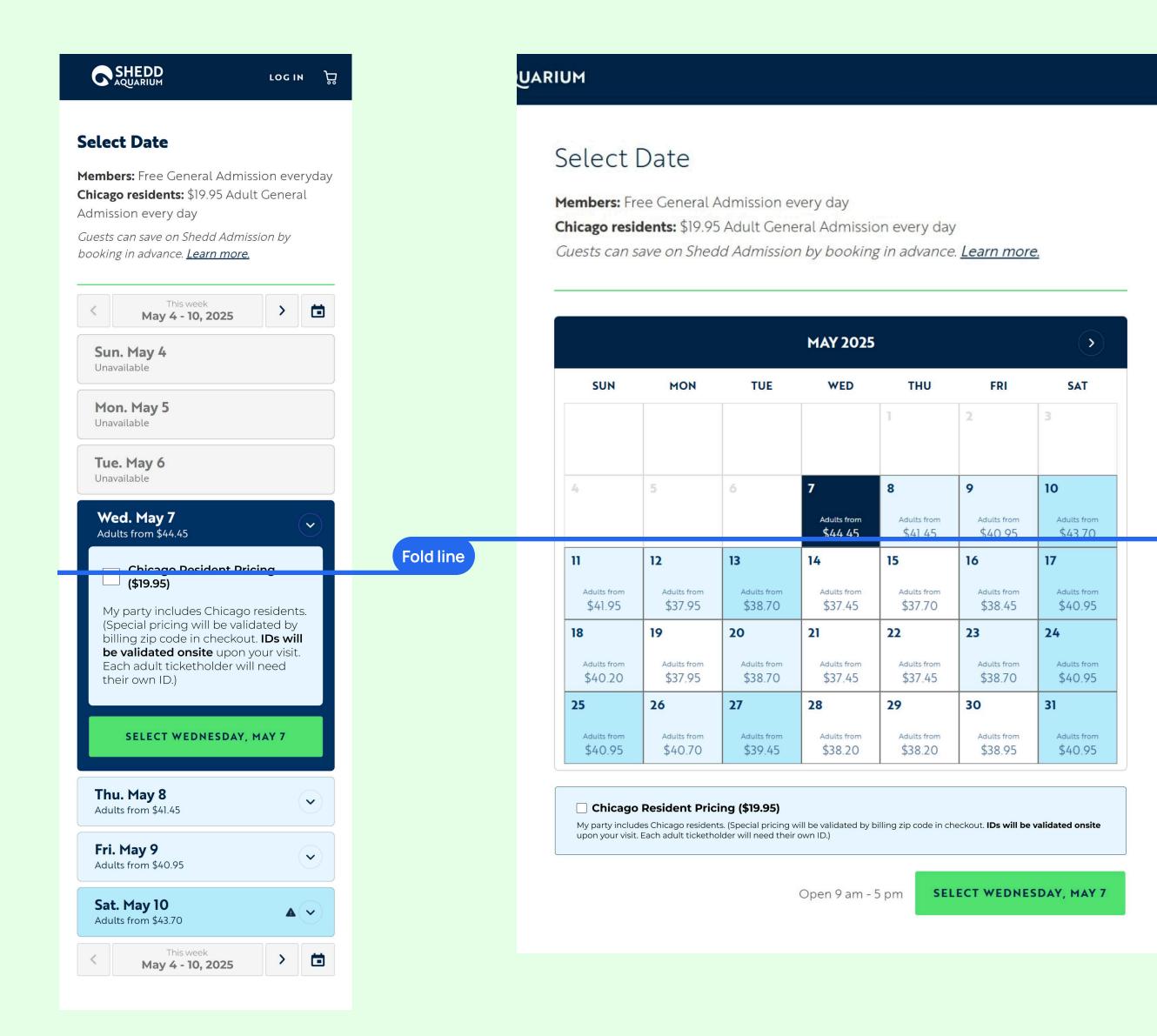
Quick scrolls meant missed price changes, limited comparison, and little rechecking.

"That's why it was a very quick scroll through."



Calendar Recommendation Minimise Content To Reduce Processing Time

- Calendar appearing above the fold draws immediate attention
- Dynamic pricing on the Time Slot page is more effective than a static table
- Removed content should be displayed in the homepage and login pages



Severity: High

Users Encountered Variable Prices Too Late in the Flow

This delays key decisions, contributes to drop-off, and creates a missed revenue opportunity.

MAY 2025 ii 10 iii 18 Adults from \$40.20 25 **†††** 26 **Shedd Admission** Adults from \$40.95 Adults from \$40.70 Experience unbelievable animals from around the world! Admission includes all exhibits, animal presentations and Stingray Touch (open late-May to Mid-Sept.) See resident and member pricing > 9 am (Enter between 9 am and 9:30 am) O Non-Chicago resident: \$47.95 Adult, \$35.95 Children O Non-Chicago resident: \$47.70 Adult, \$35.95 Children O Non-Chicago resident: \$47.70 Adult, \$35.95 Children

94%

Unclear about pricing between date and time steps

Pricing Transparency Chicago resident pricing vs variable pricing

- Visit more
- Pay more per ticket
- convert less

Fixed

Variable

Total revenue

Total revenue

600k

835k

Site Visitors

Site Visitors

91k

145k

Conversion rate

Conversion rate

4.7%

3.1%

Ticket Cost

Ticket Cost (avg)

\$19.99

\$41

(range ~\$37 - \$46)

*All data represents March 1 - March 31, 2025 from Google Analytics

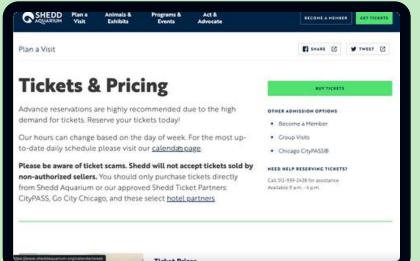
Pricing Transparency Too many clicks

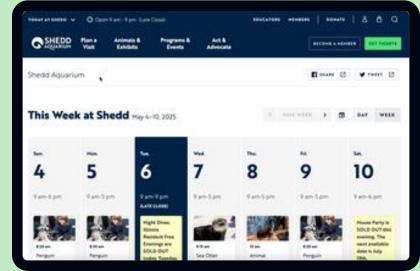
Out-of-towners need to navigate 4+ more screens than Chicago residents. To these users, the cost of visiting Shedd Aquarium feels hidden and obscured.

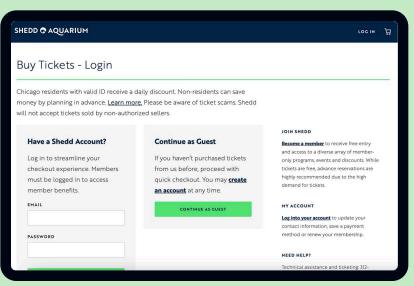


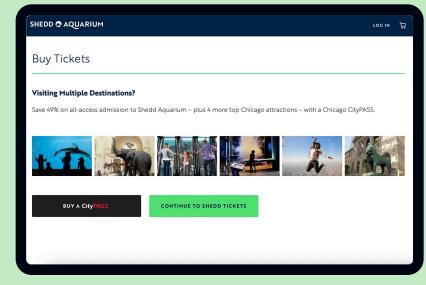


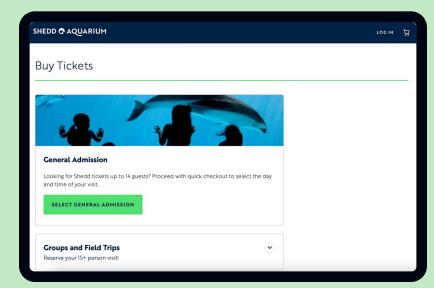


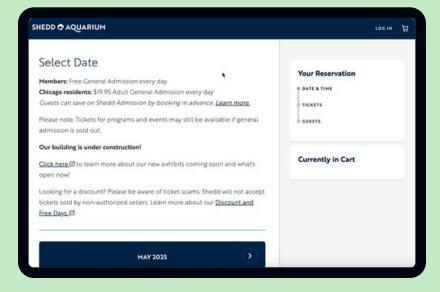


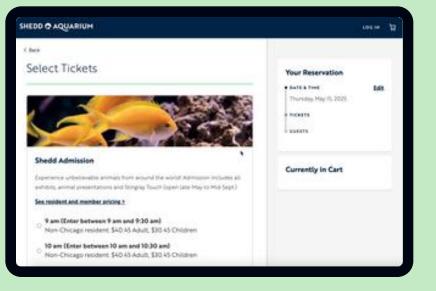






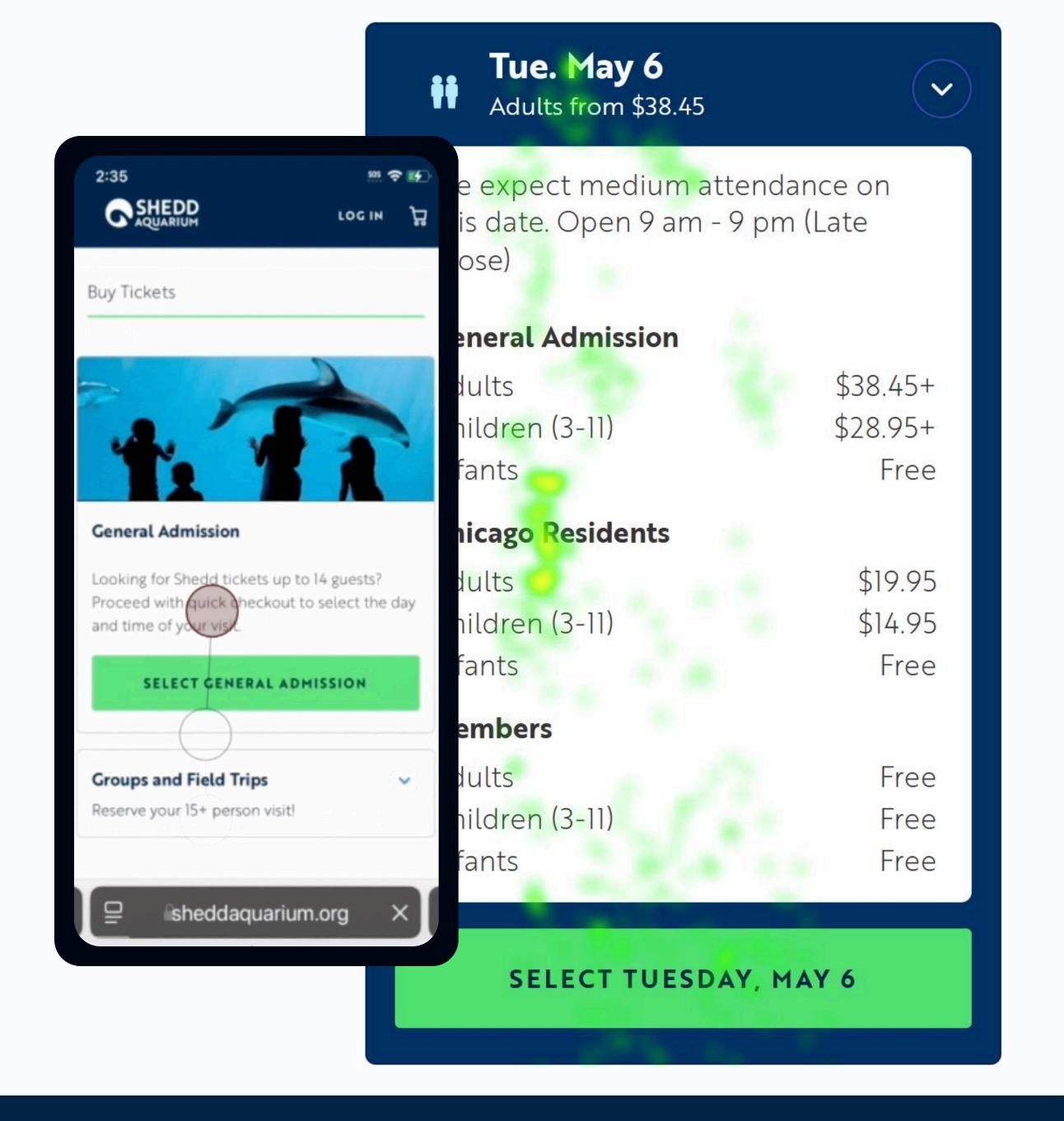






Pricing Transparency When prices are shown but they aren't noticed.

Visual attention is scattered and attention is never focused on the various costs.

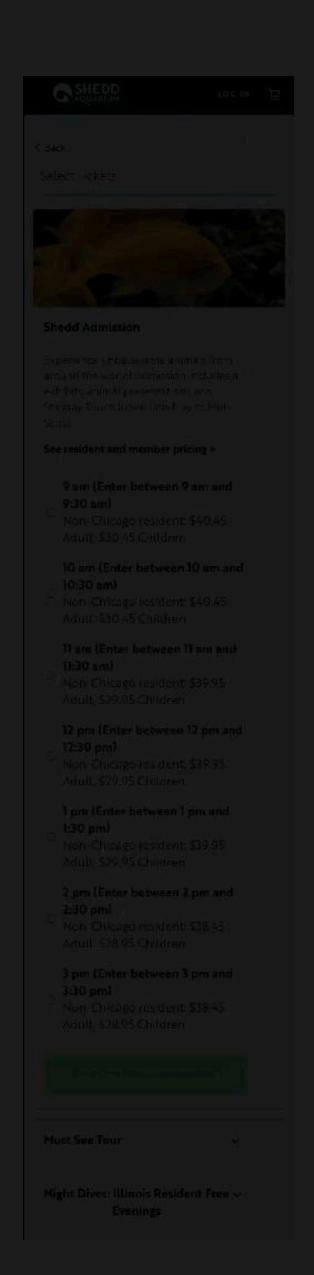


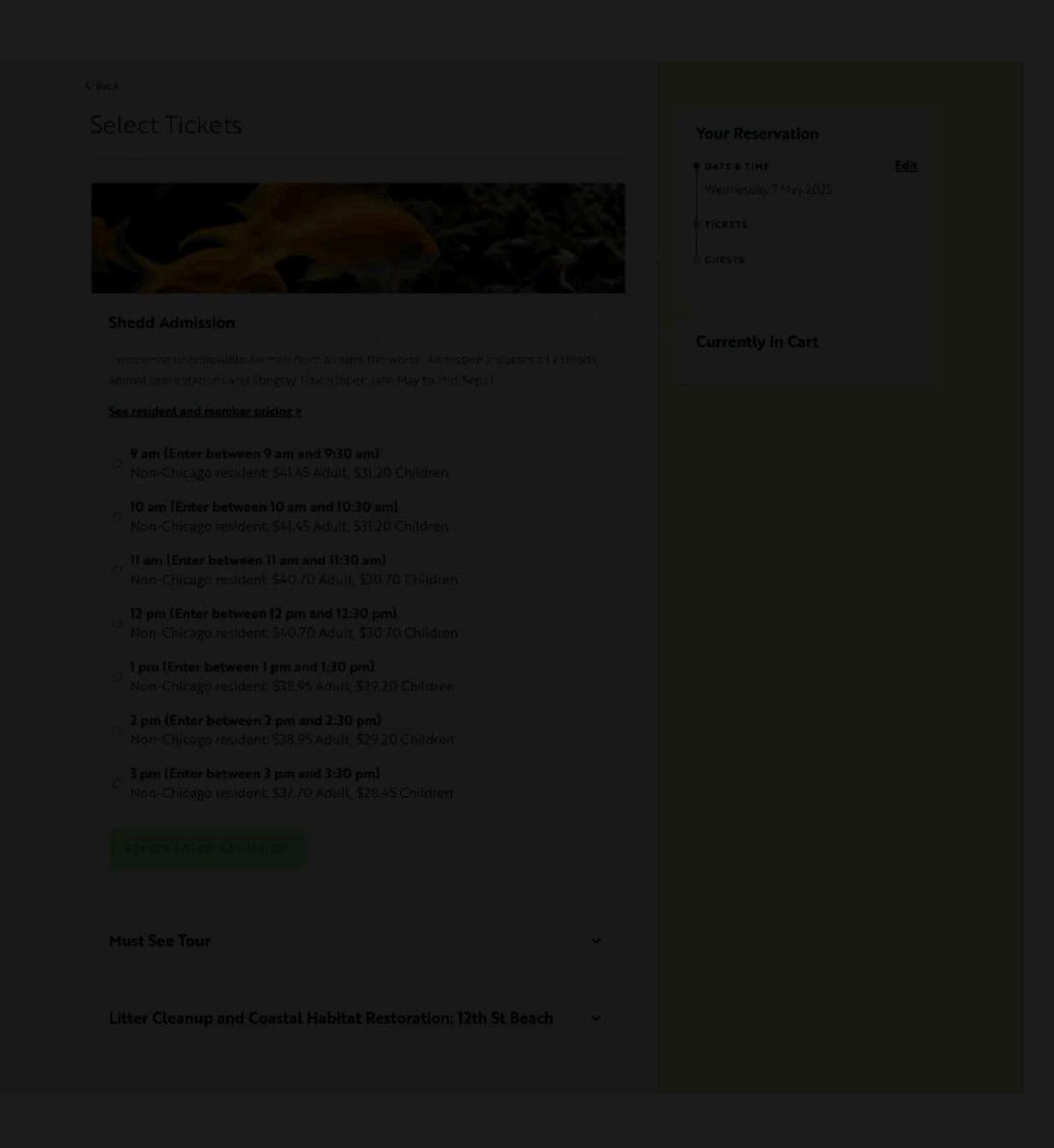
I picked \$38, but then the next screen says \$41. I'm like... wait, what's going on

- Out-of-state participant, Mobile

Pricing Transparency Eye tracking shows users don't notice the prices

Most users scan the page but don't fixate on the price.





Pricing Transparency Recommendation Visual & Content Hierarchy

There was so much information to scan and understand after selecting a day.

- Out-of-state participant, Mobile

Shedd Admission

Experience unbelievable animals from around the world! Admission includes all exhibits, animal presentations and Stingray Touch (open late-May to Mid-Sept.).

See resident and member pricing >

- Non-Chicago resident: \$44.95 Adult, \$33.70 Children
- 9 am (Enter between 9 am and 9:30 am)
- Non-Chicago resident: \$44.95 Adult, \$33.70 Children 10 am (Enter between 10 am and 10:30 am)
- Non-Chicago resident: \$44.20 Adult, \$33.20 Children 11 am (Enter between 11 am and 11:30 am)
- Non-Chicago resident: \$44.20 Adult, \$33.20 Children
- 12 pm (Enter between 12 pm and 12:30 pm)
- Non-Chicago resident: \$42.20 Adult, \$31.70 Children 1 pm (Enter between 1 pm and 1:30 pm)
- Non-Chicago resident: \$42.20 Adult, \$31.70 Children 2 pm (Enter between 2 pm and 2:30 pm)
- Non-Chicago resident: \$40.70 Adult, \$30.70 Children
- 3 pm (Enter between 3 pm and 3:30 pm)

SELECT SHEDD ADMISSION

Anchoring What Comes Next

Recommendations and further testing suggestions

What if we showed the price earlier?

Test whether placing a pricing calendar in the 'Plan Your Visit' page improves transparency and reduces low-intent funnel entry.

Hypothesis

If dynamic pricing is visible earlier in the flow, fewer visitors will be entering the flow to price check.

This creates both a better user experience and further enhances and adds clarity to funnel analytics.

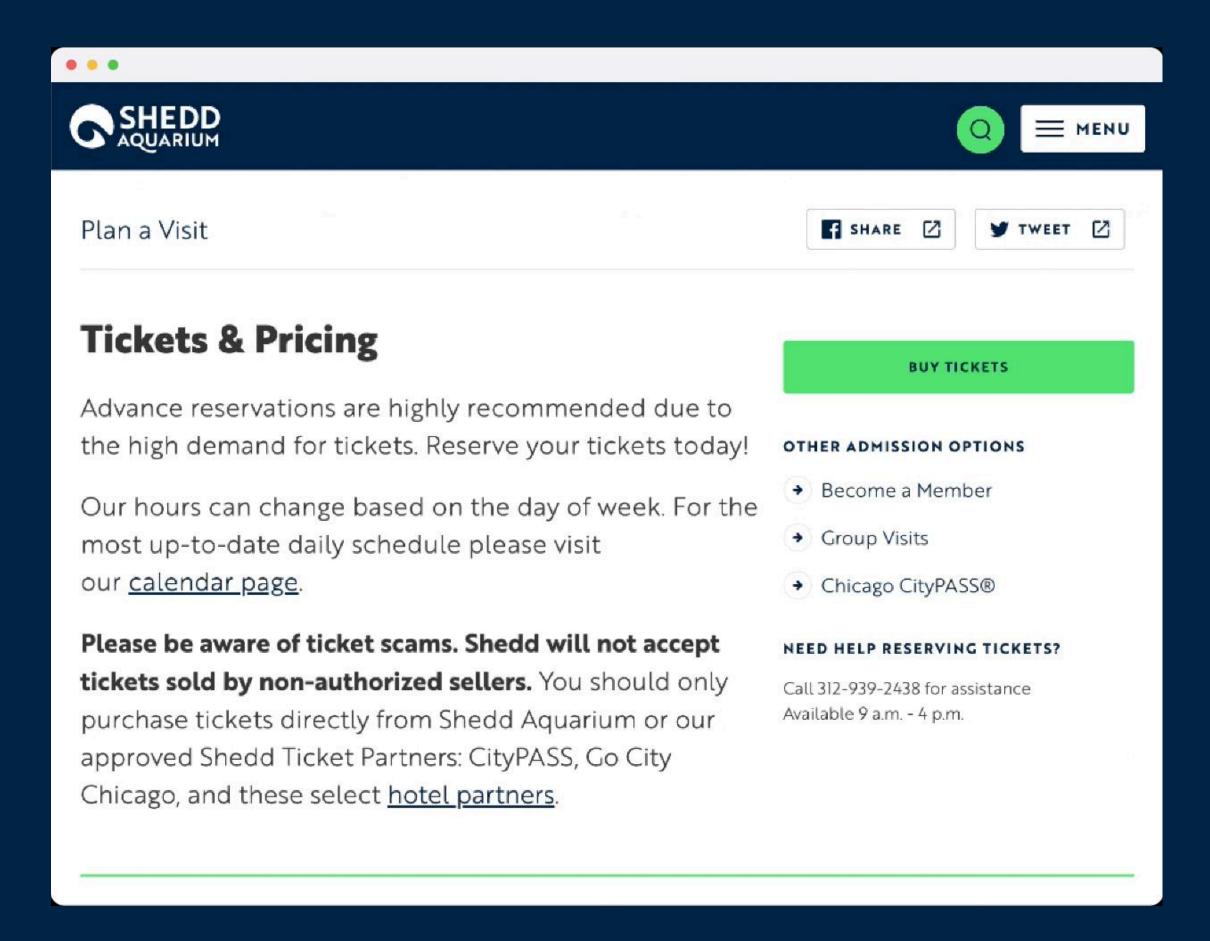
Key Metrics

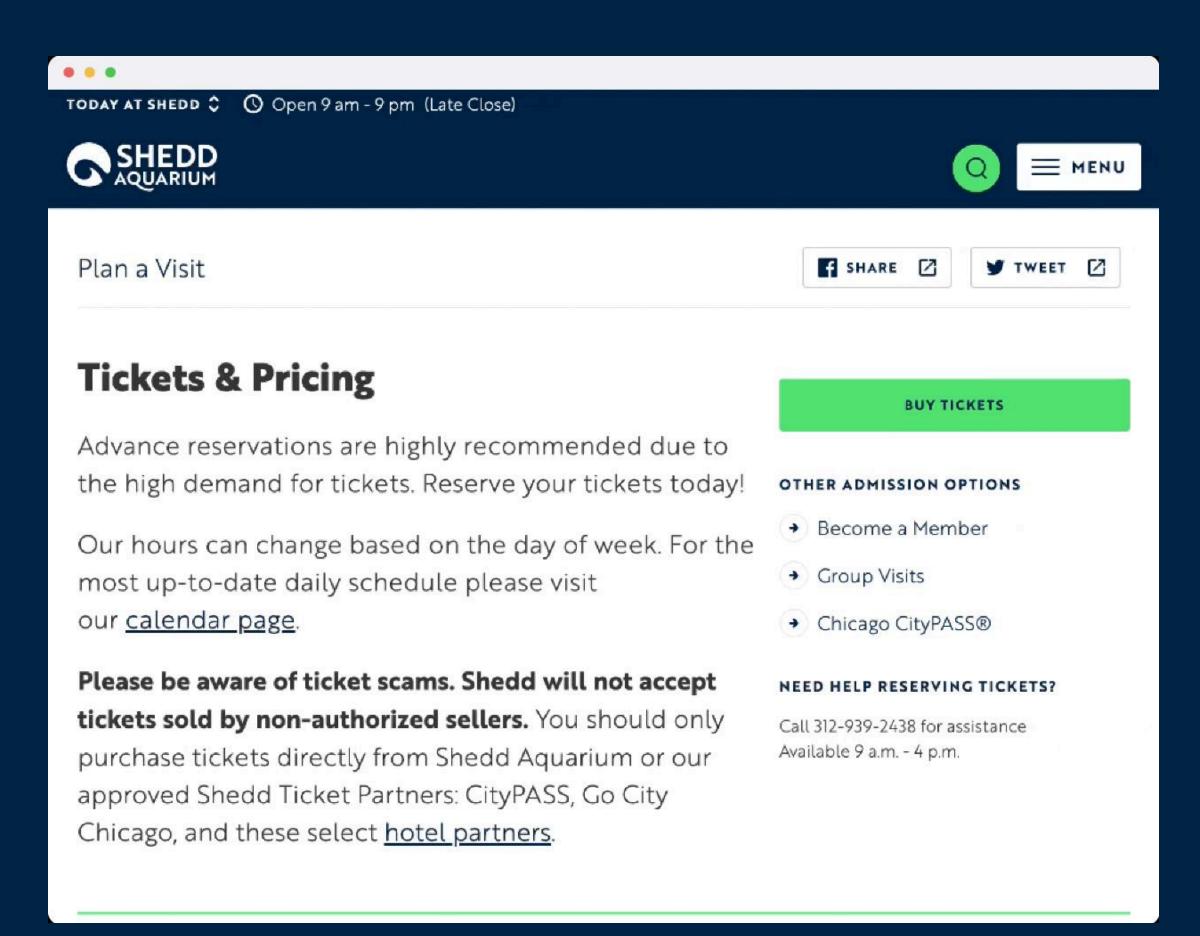
Reduction in funnel entry from "Plan Your Visit" page.

Secondary Metrics

- Price calendar interactions (clicks, opens, scroll depth)
- Drop-off from calendar page (if still entered)
- Average session duration for non-IL users
- Bounce rate change on pricing section

AB Testing





Control Variant

AB Testing

Goal

Improve price visibility early in the journey to reduce funnel noise and increase purchase clarity.

Timeframe

4 weeks

Control

No changes

Variant B

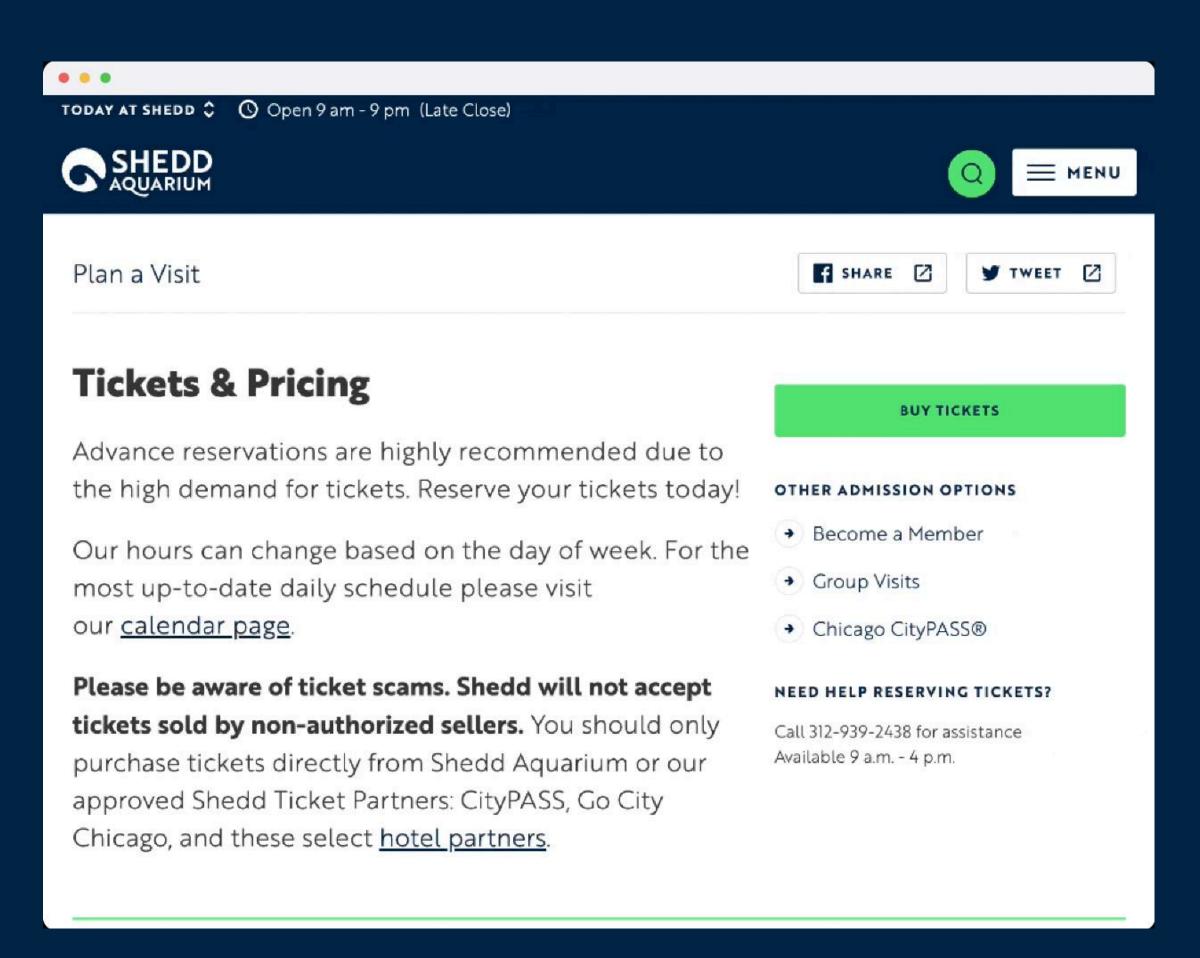
Add the dynamic price calendar to the "Plan Your Visit" pricing page.

Audience

Tested Users: Non-Illinois visitors

A/B split within the out of state visitors only

Illinois visitors excluded as they represent fixed pricing.



Variant

Continuing Research Strategy

Whether this A/B test confirms or challenges our hypothesis, it opens the door to more intentional, insight-driven optimization.

Continuing Strategy If the variant improves clarity or conversion.

A successful result signals that transparency drives both confidence and cleaner analytics.

- Price calendar interactions (clicks, opens, scroll)
- Drop-off from calendar page
- Average session duration for non-Chicago Residents
- Bounce rate change on pricing section

Continuing Strategy

If the test doesn't move the needle.

- Pricing transparency may still matter
- Explore other ways to address transparency:
 - tooltips, collapsible sections, simplified copy.
- Consider more testing:
 - both navigation, and the steps with high points of friction.
- Continue to use qualitative data to help identify blind spots.

To summarize

A Quick Look at What The Solutions We Propose

Navigation Improvement

Give users autonomy to move back-andforth with their progress saved

Calendar, Timeslot and Add on

Make the UI and text content easily digestible to reduce cognition overload

Price Tranparency

Display and highlight the prices upfront so that they are non-skimmable

Takeaways & "Thank you's

and some more "thank you's! "Thank you"!

- Users often enter the flow to check prices, not to purchase, distorting funnel accuracy.
- The best user experiences give control to the user. **Clear navigation and progression indicators** are worth pursuing further.
- The current system is doing its job well:
 - green CTAs guide well
 - guest checkout eases friction
 - SUS rating of average (which is good!)
- We aim to support, not overhaul. Shedd has a strong UX foundation and we hope our research contributes and build upon further.





Appendix

Research Findings Demographic Information

Pre-interview, we asked our participants to fill out a survey with basic details and behaviour related to visiting cultural sites.

Visit frequency didn't strongly correlate with age, relationship status, or whether someone worked with children, suggesting aquarium interest may cut across lifestyle types rather than being confined to specific personas.

Participant responses →

Participant	Have you ever lived or visited Chicago?	Do you currently live in NYC?	Complete the sentence (Click all that apply): "I like visiting aquariums so that I can"	Have you ever purchased tickets online for a museum, aquarium, or other cultural sites before visiting?	How frequently do you visit museums, aquariums, and cultural sites?
P1	No	Yes	experience a relaxing environment, Have a unique experience with loved ones	Yes	Only during vacations or trips
P2	Yes	Yes	experience a relaxing environment, See a popular tourist site when visiting a city, Have a unique experience with loved ones	Yes	Several times a year
P3	No	No	learn about conservation efforts, Have a unique experience with loved ones	Yes	Several times a month
P4	No	Yes	experience a relaxing environment, See a popular tourist site when visiting a city, Have a unique experience with loved ones	Yes	Several times a month
P5	No	Yes	experience a relaxing environment	Yes	Several times a year
P6	No	Yes	experience a relaxing environment, Have a unique experience with loved ones	Yes	Several times a year
P7	No	Yes	See a popular tourist site when visiting a city, Have a unique experience with loved ones, Learn about ocean species	Yes	Several times a year
P8	No	Yes	experience a relaxing environment, Have a unique experience with loved ones	Yes	Several times a year
P9	No	Yes	experience a relaxing environment, Have a unique experience with loved ones	Yes	Only during vacations or trips
P10	Yes	Yes	experience a relaxing environment, See a popular tourist site when visiting a city, Have a unique experience with loved ones	Yes	Several times a year

Participant	Do you speak Spanish? And if so, what is your comprehension level?	What is your English Comprehension Level?	What is your relationship status?	Are you a parent, guardian, or someone who works with children?	What is your occupation?
P1	No; I do not speak Spanish	English is my first language	In a long-term relationship	Yes; I work with children	Creative at Apple
P2	No; I do not speak Spanish	I speak English fluently and it is my second language	In a long-term relationship	No, I do not work with or have children	Consultant
P3	No; I do not speak Spanish	English is my first language	Single	No, I do not work with or have children	student
P4	No; I do not speak Spanish	English is my first language	Single	Yes; I work with children	Research Asisstant and teaching assistant
P5	No; I do not speak Spanish	English is my first language	Single	No, I do not work with or have children	Student
P6	No; I do not speak Spanish	English is my first language	Single	No, I do not work with or have children	Graduate Assistant
P7	No; I do not speak Spanish	I speak English fluently and it is my second language	Single	Yes; I am a parent and/or guadian	Full time graduate student
P8	No; I do not speak Spanish	English is my first language	Single	No, I do not work with or have children	Student studying Illustration at the School of Visual Arts
P9	No; I do not speak Spanish	English is my first language	Single	No, I do not work with or have children	Designer
P10	Yes; I have beginner Spanish comprehension skills	English is my first language	In a long-term relationship	No, I do not work with or have children	Marketer

Research Findings System Usability Scale (SUS) Metrics

Post-interview, we asked our participants to rate the usability of the site with a survey.

- 1- Strongly Disagree
- 2-Disagree
- 3- Neutral
- 4-Agree
- 5-Strongly Agree

Our participants told us the following →

I think that I would like to use this website frequently	I found the website unnecessarily complex.	I thought the website was easy to use.	I think that I would need the support of a technical person to be able to use this website.	I found the various functions/ features of the website were well integrated.
1	3	4	1	3
2	2	4	1	4
3	3	4	2	4
5	2	3	1	4
5	1	5	1	5
3	5	4	1	2
3	4	3	1	4
1	1	5	1	3
3	2	4	1	3
2	4	2	1	1
4	3	4	1	4
3	2	3	1	2
2	4	4	1	2

I thought there was too much inconsistency in this website.	I imagine that most people would learn to use this website very quickly.	I found this website very awkward to use.	I felt very confident using the website.	I needed to learn a lot of things before I could get going with this website.	SUS score per participant
2	4	2	5	1	70
1	5	1	4	1	82.5
4	3	1	4	2	65
3	5	1	4	1	82.5
1	5	1	5	1	100
1	5	4	5	1	67.5
2	2	4	3	1	57.5
1	4	1	4	2	77.5
2	3	2	4	2	70
5	3	4	1	2	32.5
1	4	2	4	1	80
4	4	2	4	1	65
4	3	4	4	1	52.5

Research Findings Rainbow Spreadsheet Analysis

Post-interview, we analysed the interview and feedback they provided and made a sheet of all the points that stood out and recorded the interviewee against the feedback

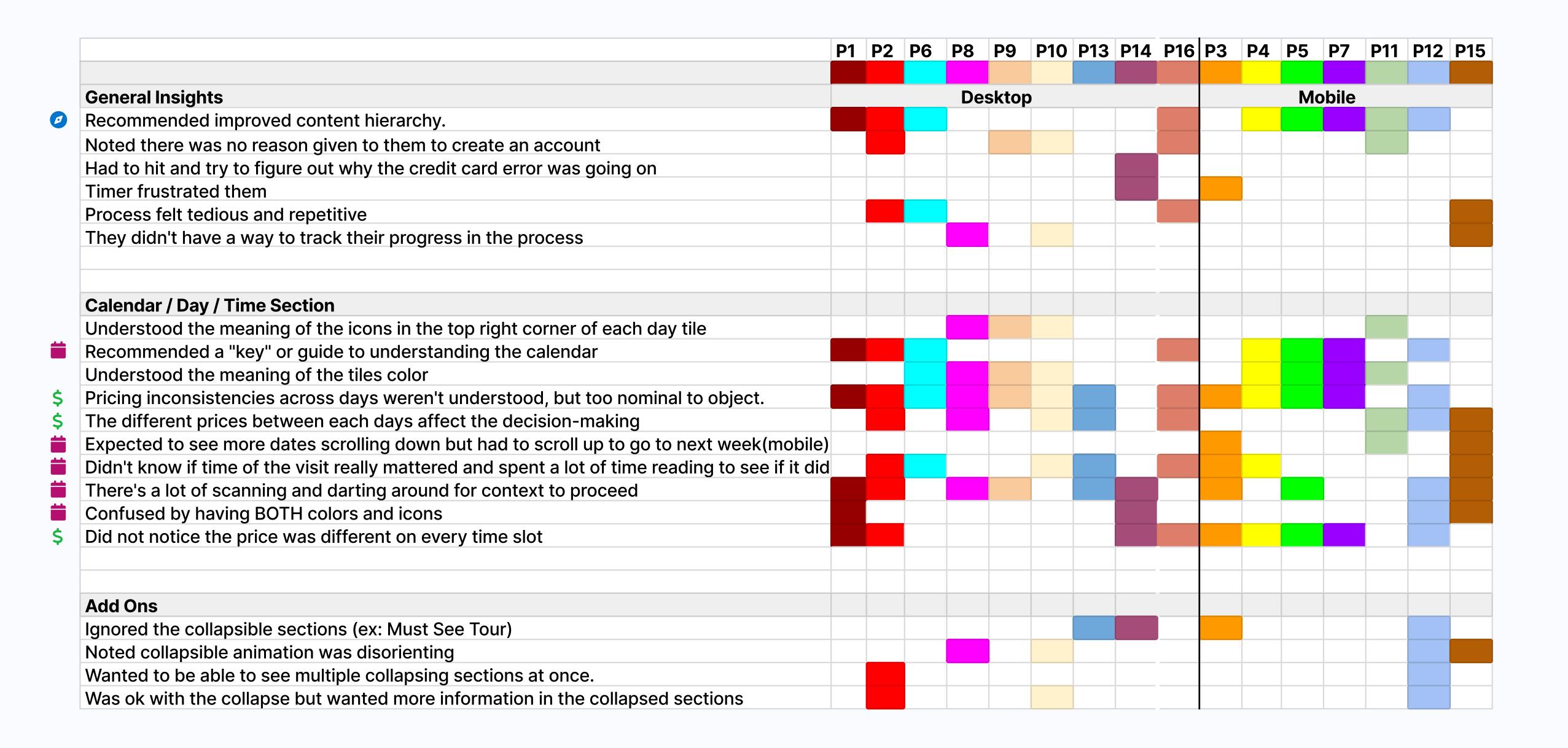
The results were as following →

Legend

- Navigation related issues
- Calendar + timeslot related issues
- \$ Pricing related issues

These issues are looked at in a aggregate perspective in order to address it's severity

		P1	P2	P6	P8	P9	P10	P13	P14	P16	Р3	Р4	P5	P7	P11	P12	P15
	General Insights				De	sktop)						Mo	bile			
	Easily found the tickets button on the homepage																
	Loved the visuals so much that they got distracted from the task																
	Navigated the flow by following the "green buttons"																
	Thought of starting an account made them anxious																
	Felt comfortable that the guest option was there																
	Did not understand what CityPass was, but ignored it and went ahead with the regular flow																
	Felt the "continue to shedd tickets" button didn't give much context, but assumed it was																
	for getting tickets for the aquarium																
	Generally understood what CityPass was, but felt they weren't given much context																
	Felt the images on the CityPass step gave little context or meaning																
•	People who travel to Chicago prefer to get a Citypass ticket																
\$	Concerned about discounts																
Ø	Skipped larger blocks of text																
	Do not clearly understand the difference between "must see tours" and add-ons																
	Completely ignored "must see tours"																
	Event add ons found later in flow than wanted, and concerned about navigating back to																
	ensure ticket time and add on time worked together.	,															
	It wasn't difficult to find the add on																
	Wanted a glanceable overview with collapsible add ons to see them all at the same time.																
	High cognitive load/ roadblock after selecting the Penguin add on																
Ø	(no green buttons, and required to scroll up)																
Ø	The add on confirmation popup disrupted their flow																
	Thought that all the add ons were included along with the ticket																
\$	Unsure on how to find a discount on the final overview screen before purchase																
	Figured that the process was over on seeing Order summary page																
\$	Didn't understand cart summary																
Ø	Wanted to go back mid-flow but couldn't/had to rely on browser back buttons																
Ø	Recommended improved visual/ type hierarchy.																



Issue Analysis Prioritizing issues with RICE Scores

For each insight, we gave a score from 1 to 5 for:

- Reach: How many users will this impact if we fix it? (5 = affects almost everyone, 1 = very niche)
- Impact: How strongly will it improve the user experience if we fix it? (5 = huge positive change, 1 = barely noticeable)
- Confidence: How sure are you that fixing this will make a real difference? (5 = we have strong data/user quotes to back it up, 1 = pure guess)
- Effort: How hard would this be to fix or implement? (5 = very hard/complex, 1 = super easy)

Major Issues	R each	<u>I</u> mpact	<u>C</u> onfidence	<u>E</u> ffort	Score	
Issue # 1: Price transparency	5	5	5	2	62.5	
Issue #2: Navigational issues	4	4	5	2.5	32	
Issue #3: Add ons	3	3	5	1.5	30	
Issue #4: Calendar and Timeslot	5	5	4	3	33.3	
Issue #5: General Admission accordion issue The general and group admission confuses the users as they cannot view it both at the same time	2	5	4	1.5	26.7	
Issue #6: Log In page mostly skipped No incentive for people to log in which is a missed opportunity to keep Shedd on people's radars	4	2	1	0.5	16	