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Web Design Styles and Design Recommendations: Balancing Aesthetics and Usability

Exploring How Classic and Modern Design Styles Influence User Experience to Develop Balanced Web Interfaces

Bachelor's thesis in Computer science and engineering

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Abstract

This project explores different characteristics of classic and modern web design, and how it affects user experience. The web design recommendations presented in this project are intended to support designers and businesses in merging classic and modern design styles. Usability testing, expert interviews, and thematic analysis was performed, and three websites were developed: one with a classic design, one with a modern style, and a third hybrid version that integrates elements from both approaches. The project was limited to front-end development for desktop use, targeting Swedish adults aged 19–30. Comprehensive accessibility measures were excluded, and SEO testing focused on differences between styles, rather than optimization. The results show that the classic design was valued for its familiarity, clarity, and efficiency, while the modern design stood out for its visual appeal, engagement, and immersive qualities. The hybrid solution, guided by the developed web design recommendations, effectively integrated the strengths of both styles, resulting in a balanced and user-friendly interface. These findings suggest that blending classic and modern design principles can enhance user experience without compromising aesthetics, offering practical guidance for those seeking to create accessible and engaging web interfaces.

Sammandrag

Detta projekt undersöker olika kännetecken hos klassisk och modern webbdesign, samt hur dessa påverkar användarupplevelsen. De webbdesignrekommendationer som presenteras syftar till att stödja designers och företag i att kombinera klassiska och moderna designstilar. Användartester, expertintervjuer och tematisk analys utfördes, och tre webbplatser utvecklades: en med klassisk design, en med modern stil, samt en tredje hybridversion som integrerar element från båda tillvägagångssätten. Projektet begränsades till front-end utveckling för datoranvändning och riktade sig till svenska vuxna i åldern 19-30 år. Omfattande tillgänglighetsåtgärder exkluderades, och SEO testning fokuserade på skillnader mellan stilar snarare än optimering. Resultaten visar att den klassiska designen uppskattades för sin igenkännbarhet, tydlighet och effektivitet, medan den moderna designen utmärkte sig genom sitt visuella uttryck, sin engagemangsnivå och immersiva egenskaper. Hybridlösningen, baserad på de framtagna webbdesignrekommendationerna, lyckades integrera styrkorka från båda stilar, vilket resulterade i ett mer balanserat och användarvänligt gränssnitt. Dessa resultat tyder på att en sammansmältning av klassiska och moderna designprinciper kan förbättra användarupplevelsen utan att kompromissa estetiken, och erbjuder praktisk vägledning för den som vill skapa tillgängliga och engagerade webbgränssnitt.

Contents

1 Introduction

The field of web design has undergone significant transformation over the past decades, shaped by technological advancements, changing user expectations, and evolving aesthetic trends [1]. As the internet has matured into a central platform for communication, commerce, and information sharing, the design of websites has grown increasingly important for both user satisfaction and business success [2]. Today, a website is often the first point of contact between a user and an organization, making its design not only a matter of visual appeal but also of *usability*, *accessibility*, and trustworthiness [3].

Historically, web design practices have emphasized functionality, clear structure, and user-friendly navigation [4][5]. These principles form the basis of what can be referred to as *classic* web design, characterized by familiar layouts, visual hierarchy, and consistent user interface elements [5]. Such designs prioritize efficiency, reducing cognitive load and enabling users to find and interact with content with minimal effort [5]. More about this project's definition of classic web design in Section 4.1.1.

In contrast, *modern* web design has emerged alongside advances in *front-end* technologies and design tools, allowing for more expressive, interactive, and dynamic user experiences [2]. This style is often associated with minimalistic aesthetics, bold typography, extensive use of animations, and innovative layout structures, as further defined in Section 4.1.2 [6][7]. While these elements can enhance brand identity and emotional engagement, they can also pose challenges to usability, especially for users who are more accustomed to conventional interaction patterns [8]. Therefore, the shift toward visually driven, animated, and exploratory design has created tension between innovation and usability [5][9]. As a result, designers and developers are increasingly tasked with the challenge of delivering websites that are both visually appealing and easy to use.

Visual aesthetics are a fundamental part of modern user experience, influencing not only usability but also emotional engagement and product perception. Research shows that users form aesthetic impressions of interfaces within milliseconds, which can shape their judgment of trust, usability, and overall satisfaction [10]. Motion design, through transitions, animations and dynamic feedback, could enhance this by guiding attention and reducing cognitive load, making interfaces feel more intuitive and engaging [11].

Lewis and Sauro discuss the shift from classic usability engineering, which emphasizes efficiency and task completion, to modern *User Experience* (UX) approaches that place greater emphasis on emotional and affective factors such as users' satisfaction, trust and enjoyment [12]. This transition shows that usability is no longer just about how well something works, but also about how it feels to use, taking into account users' emotions and overall experience, which aligns with the expectations of contemporary web environments. As Norman emphasizes, aesthetically pleasing designs evoke emotional responses and are often perceived as more functional, reinforcing the idea that good looking things often seem to work better [13]. This connection between aesthetics, usability and desirability highlights why modern web design increasingly relies on visual and interaction asthmatics as key elements of product success.

However, an overemphasis on visual aesthetics can introduce usability challenges. While aesthetics contribute positively to user perception, excessive focus on appearance may undermine clarity, accessibility, and overall usability. Recent academic studies have increasingly examined how modern web design elements, such as dynamic visuals, unconventional layouts, and interactive features, affect UX and usability [14][15][16]. For instance, Jankowski et al. investigated the relationship between visual intensity and user conversion rates. Their findings demonstrate that although visually rich elements can increase user attention, excessive use may lead to negative user reactions, highlighting the importance of a balanced design approach [15].

Other studies emphasize that visual aesthetics primarily influence user evaluation through the emotional pleasure they evoke, rather than through direct improvements in usability [14]. This suggests that even when a website is perceived as visually appealing, it may not enhance task

performance or satisfaction if usability is compromised. Furthermore, research distinguishes between expressive aesthetics, which promote creativity and novelty, and classical aesthetics, which emphasize clarity and order [17]. While expressive elements can enhance enjoyment, they may reduce process efficiency, in goal-oriented contexts. These insights underscore that modern design elements are most effective when aligned with the website's context and purpose, reinforcing the need for balance between visual appeal and functional clarity.

Comparative analyses between classic and modern web designs remain limited. While, creative, unconventional websites can be more visually engaging and memorable, deviations from established layout and interaction patterns may increase cognitive load and lead to user frustration. This highlights the value of familiar design conventions in promoting intuitive interaction.

Overall, classic web design principles have laid the foundation for usability and functionality, while modern web design has evolved to meet the complex demands of today's users, integrating aesthetics, and user engagement. However, research directly contrasting these styles is still limited. To address this gap, our work aimed to explore the differences between the styles through design, development, and testing, guided by the characteristics of the chosen target user group as described in Section 2.5. This process resulted in a hybrid website and web design recommendations that support intuitive, visually engaging, and user-centered web design.

1.1 Purpose and objectives

The purpose of this project was to investigate how different web design styles, specifically classic and modern, affect user experience. Additionally, it explored whether a combination of their respective strengths can lead to more effective design solutions. Balancing usability with aesthetic innovation has become an increasingly relevant challenge. Classic web design prioritizes structure and clarity while modern web design emphasizes visual expression, interactivity, and brand identity [2]. This project addresses this challenge by examining the impact of each design style, and identifying opportunities for integration.

To guide this project, the following objectives were established:

- Identify the defining characteristics of classic and modern web design, including their respective strengths and limitations.
- Design and develop two websites, one in a classic style and one in a modern style, to serve as concrete representations of each approach.
- Evaluate user experience through qualitative user testing, focusing on usability, clarity, engagement, and overall perception.
- Develop web design recommendations and a third website, supporting the integration of classic and modern elements into a cohesive hybrid approach.

Ultimately, the findings aim to inform future web design strategies by offering actionable web design recommendations that help balance usability with aesthetic appeal.

1.2 Scope

To ensure feasibility within the given time frame, several limitations were established for the project. The development of the websites focused exclusively on the front-end, to allow for a more focused evaluation of how design interfaces influence user experience, without the added complexity of *back-end* development.

The websites were designed to sell a product, providing user actions that made interactions easier to evaluate during testing. Young Swedish adults, aged 19–30, were selected as the target audience, which informed purposeful design decisions and enabled focused, efficient testing within the project's time constraints.

The websites were developed specifically for desktop use, with mobile implementation and testing intentionally excluded in order to limit the time and resources required to design, implement, and evaluate across multiple devices. General accessibility best practices were considered, however specific accommodations for users with motor or cognitive impairments were not implemented due to limited expertise, testing options, and time.

Search engine optimization (SEO) testing tools were used to assess three technical aspects of the websites; how well search engines could *crawl* and *index* their content, as well as overall *page speed*. No actual optimization was performed, as general SEO best practices do not reflect the differences between the web design styles. However, page speed was included, as it remains relevant due to modern websites reliance on dynamic and visual elements.

These limitations defined the scope of the project, ensuring a structured and focused process while still providing valuable insights and practical design recommendations.

1.3 Thesis outline

This thesis is structured as follows:

- **Introduction** – Introduces the background and motivation for the project. Presents the purpose, research objectives, scope, and briefly describes the structure of the thesis.
- **Theory** – Introduces the theoretical foundation of the project, covering core concepts in UX, accessibility, SEO, classic and modern web design styles.
- **Tools and methodology** – Describes the tools used during development and overall methodology.
- **Preliminary study** – Describes the process of defining classic and modern web design styles, and establishing the working definitions for the project. Additionally, presents the results of a user survey, gathering insights from the target audience, to inform later design decisions.
- **Design and development process** – Outlines the iterative design and implementation process. Introduces the fictional company, functional requirements, and prototypes. Describes the development and review of two websites, based on modern and classic styles. Details the user testing process, thematic analysis, and SEO evaluation. Explains how findings informed the creation of web design recommendations. Concludes with the development of a hybrid website, applying these recommendations to combine modern and classic elements.
- **Results** – Presents the final hybrid website and web design recommendations.
- **Discussion** – Reflects on the project's methodology, design choices, and results. It evaluates the qualitative testing approach, user selection, and design limitations, and briefly considers the implications for SEO and the developed design recommendations. The section also discusses theoretical and practical contributions, ethical considerations, and the applicability of the findings across different contexts. It concludes with suggestions for future research.
- **Conclusion** – Summarizes the main contributions of the project, highlighting key takeaways.

2 Theory

This chapter presents the theoretical foundation of the project, detailing UX concepts, accessibility, and descriptions of web design styles similar to classic and modern web design. Additionally, search engine ranking and SEO is explained, and finally the characteristics of the chosen target audience.

2.1 User experience fundamentals

UX refers to a user's overall interaction with a product, website, or system, encompassing satisfaction, perception, and emotional response [18]. Tidwell conceptualizes UX as a two-step process: first, identifying users' goals, and second, designing solutions that feel familiar through established *patterns* [5]. Garrett similarly defines UX as the real-world experience of users engaging with a product [19].

UX design is a process focused on creating digital experiences that prioritize usability, accessibility, and efficiency [20]. By employing research, *wireframes*, and *prototypes*, UX designers develop intuitive interfaces that enhance both functionality and user satisfaction.

The *User Interface* (UI) is a critical component of UX design, which consist of the visible and interactive elements of a system, such as screens, buttons, and navigation components [18]. UI design plays a crucial role in shaping the user experience by providing a clear and efficient way for users to interact with a system.

2.1.1 UX principles, design principles and patterns

UX principles are general guidelines for designing a positive user experience, applicable to any interaction with a product or service, not just digital interfaces [5][21]. These principles are often based on psychology, usability research, and human behavior [21][5][22]. There are numerous lists and different variants of these principles [21][23]. The book *Design of Everyday things* by Don Norman, contains the following list of seven fundamental principles [21]:

1. **Discoverability:** Users can see what actions are possible.
2. **Feedback:** The system responds clearly to user actions.
3. **Conceptual model:** The design matches how users think it works.
4. **Affordances:** Features suggest how something should be used.
5. **Signifiers:** Cues indicate where to act.
6. **Mappings:** Controls correspond naturally to their effects.
7. **Constraints:** Limits prevent incorrect use.

In the context of interaction design and UX, *design principles* are a subset of UX principles that focus specifically on the design of digital products such as websites, apps, and software [24][25]. Although the terms are often used synonymously, UX principles guide the overall user experience across all touchpoints, both physical and digital, while design principles address the usability and accessibility of digital interfaces. They provide practical, actionable guidance for UI and interaction design, covering areas such as visual hierarchy, and user control [26][25][27].

Lastly, design patterns are recurring solutions to common problems in interface design, such as a *hamburger menu* or *back-to-top* pattern for navigation, or a *frequently asked questions* (FAQ)

section to format data [28][29][5]. They offer practical frameworks for addressing challenges in specific contexts and help ensure consistency and familiarity across digital products [5]. Rather than prescribing exact implementations, patterns provide flexible, proven approaches that can be adapted to various needs and design goals.

2.1.2 UX Laws

UX laws are principles derived from psychology, cognitive science, and human behavior that help designers create more intuitive and user-friendly experiences. These laws explain how users perceive, process, and interact with digital interfaces, guiding UX designers in making informed design decisions [30].

UX laws can be categorized into four main groups: *heuristics*, *Gestalt principles*, *cognitive biases*, and *design principles* [30]. Heuristics are rules of thumb that simplify decision-making and improve usability. *Jakob's Law* states that users expect a website to function similarly to others they have used, promoting familiarity and reducing the learning curve [31]. *Miller's Law* suggests that people can hold only 7 ± 2 items in their working memory, emphasizing the need for simplicity in information presentation [31].

Gestalt principles describe how the human brain organizes visual elements for better comprehension. Designers use principles such as *proximity*, *similarity*, and *continuity* to structure content in a way that enhances clarity and usability [5][30]. Gestalt principles are often seen as design principles.

Cognitive biases influence how users interpret and interact with interfaces, while design principles help optimize the effectiveness of digital interfaces [32]. The *Aesthetic-Usability Effect* states that users perceive aesthetically pleasing designs as more functional and user-friendly, reinforcing the importance of visual appeal in usability [30].

2.2 Accessibility standards

When creating website it is encouraged to follow established guidelines to meet diverse user needs [33]. *Web Content Accessibility Guidelines* (WCAG) 2.1 is a recognized standard for accessibility, designed to improve the implementation of web content to ensure it is accessible to people with disabilities [33].

Accessibility is based on four core principles, presented in the list below, that enable users to access and interact with web content [34]. These principles are essential for creating digital environments usable for everyone, and form the foundation for web accessibility standards [33].

- **Perceivable:** Users must be able to perceive content. Therefore, information and interface elements should be presented in a manner that supports effective comprehension [35].
- **Operable:** The interface must not require interactions that a user cannot perform. All user interface components and navigation must be functional and accessible to users [35].
- **Understandable:** The system must be intuitive, enabling users to understand both its content and functionality. The interaction with the UI must be clear and easy to understand [35].
- **Robust:** To ensure long-term usability, the content must be sufficiently robust to remain accessible as technology evolves [35].

2.2.1 Design thinking for accessibility

Design thinking is a non-linear, iterative process used by teams to gain deeper user insight, identify challenges, reconsider problems, and explore innovative solutions through prototyping and testing [34]. Applying design thinking to accessibility represents a forward-thinking approach that encourages the development of meaningful, novel solutions [34].

Accessibility is often addressed late in development, resulting in suboptimal solutions for both designers and users [34]. In contrast, a design thinking approach integrates accessibility throughout the entire process, promoting inclusive, user-centered solutions [34].

2.3 Search engines & SEO

A search engine displays results as a list of websites known as *Search Engine Results Pages* (SERPs), which is typically divided into two groups; *paid search advertising* and *organic results* [36]. What websites are included in the SERPs are based on a process of crawling, indexing, and *ranking*, done by automated bots called *crawlers*. The crawlers crawl the internet by following links between pages. They then index, or parse, the website content and store it in data centers [36][37].

The ranking of the SERPs are based on *relevance*, referring to how well the content matches the search query, and *importance*, reflecting how frequently other websites reference the page [36]. When a user submits a query, complex algorithms evaluate hundreds of factors to assess both relevance and importance. Ultimately, it is the combination of these factors that determines the order of the SERPs [36].

SEO is a digital marketing technique that aims to improve a website's SERP ranking [38]. This can be achieved through technical optimizations, such as using semantic HyperText Markup Language (HTML), proper use of HTML *tags*, ensuring sub-pages are crawlable, and improving page speed [39][40][36]. It can also be supported by optimizing website content through keyword research to align with market search trends and user demand [36].

SEO is an important consideration in web design, as both the choice of design elements and their implementation in code can significantly influence a website's search engine visibility [41][36][39]. Since certain design features are more common in specific design styles, the selected design direction can substantially impact the site's reach [42].

2.4 Contrasting two approaches to web design

This section examines two contrasting web design approaches commonly observed in practice. One emphasizes stability, familiarity, and usability by following established design conventions [43]. The other focuses on innovation, visual aesthetics, and alignment with current design trends [44].

2.4.1 Classic web design

Conventional, *classic*, and *timeless* are all terms often used to describe a design approach that embraces principles proven to be effective over time [43][45][7]. Users tend to rely on habit and familiarity, making websites that follow established patterns predictable and easy to use [43].

Websites following this style tend to feature similar and predictable layouts, such as grid structures, fixed navigation bars, and clear content hierarchies, which are placed in familiar positions on the

pages [43]. These elements contribute to an intuitive and accessible user experience for a broad audience [46]. These designs also sustain longevity by prioritizing practicality and usability [7].

This approach typically avoids dynamic elements such as animations or complex visuals. Instead it favors a *two-dimensional* layout with straightforward interactions, emphasizing efficient navigation, functionality, and readability over creative expression [4]. Such websites are often described using terms like *flat*, *static*, *content-first* or *task-first* design. While flat design is sometimes associated with modern aesthetics, it originally refers to the absence of depth and glossy textures, evolving in response to earlier *skeuomorphic* and realistic design styles [47]. These styles remained influential in early twenty-first century interfaces, as seen in examples like Apple's bookshelf-inspired digital libraries or glossy rounded buttons. Static design can be used to describe interfaces where layout and elements remain fixed [48]. Meanwhile, content-first and task-first design approaches prioritize the user's goal, accessing content or completing tasks, over visual embellishments, technical complexity, or device-specific adaptations [49][50].

Overall, the main idea is to create UI's prioritizing content clarity and functionality. Although convention oriented design may be seen as less exciting or even outdated, particularly among younger audiences who may prefer trendier designs, it remains usable for large audiences because of its stable and predictable nature [44]. For example, websites like Wikipedia and IKEA reflect these qualities through their structures and user centered functionality, as illustrated in Figures 1 and 2.

Figure 1: Wikipedia homepage, showcasing an example of classic characteristics. https://en.wikipedia.org/wiki/Main_Page (2025)

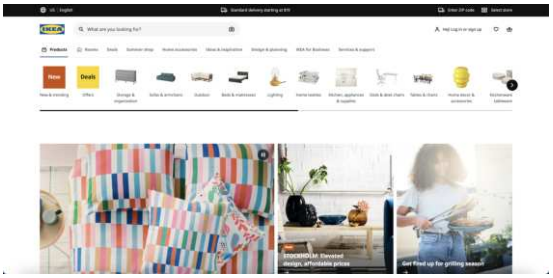

Figure 2: IKEA homepage, showcasing an example of classic characteristics. https://www.ikea.com/ (2025)

2.4.2 Modern web design

The constrasting style is often described using terms such as *trendy*, *modern*, and *dynamic* [44][51][52]. This approach incorporates contemporary visual styles, animations, *three-dimensional* (3D) elements, and new technologies to create visually engaging and interactive user experiences [53][6].

Unlike classic design, which emphasizes functionality and familiarity, this approach prioritizes aesthetics and storytelling [54]. Modern websites often feature bold visuals and typography, unconventional layouts, and experimental navigation [54][6]. However, these websites may also incorporate minimalist design characteristics, including a flat design, restrained color palettes, selective use of graphics, and intentional whitespace [55]. This can be seen in the Belgian website, Tuinen in stijl, shown in Figures 3 and 4.

This design approach often disrupts common design conventions in favor of interactive and visual experiences [44]. Popular web design trends tend to focus on user engagement through various interactive elements [53]. These include *scrolling animations* that reveal visuals as users scroll, *gamified elements*, which are components inspired by games, and *micro-interactions*, which are small animations triggered by actions, such as hovering [53]. Websites featured on platforms such as Awwwards (2025, https://www.awwwards.com/), exemplify this approach. For instance, Utsubo combines visuals and storytelling to create an immersive design experience, as seen in Figure

5 and 6.

Figure 3: Tuinen in stijl homepage, showcasing a minimalistic, trend oriented website. https://www.tuineninstijl.be/ (2025)

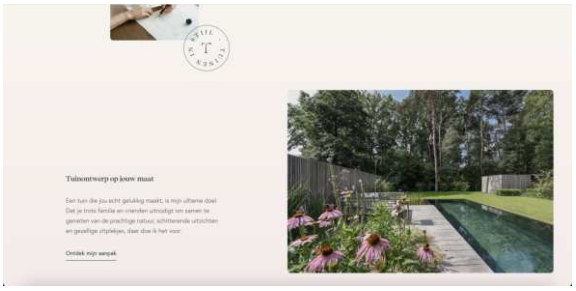

Figure 4: Tuinen in stijl page, with a spinning animation, unconventional structure, and whitespace. https://www.tuineninstijl.be/ (2025)

Figure 5: Utsubo homepage, showcasing an example of modern characteristics. https://www.utsubo.com/ (2025)

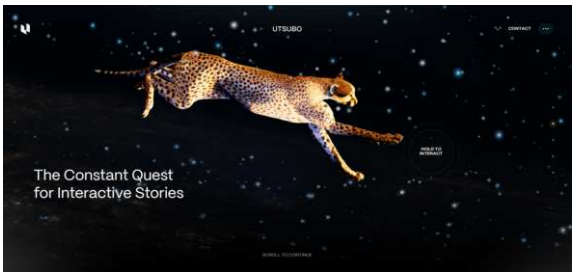

Figure 6: Utsubo page, when scrolling to explore showcasing a immersive experience. https://www.utsubo.com// (2025)

While trend oriented websites can deliver engaging and memorable experiences, they may also challenge user expectations. Highly experimental navigation or excessive visual effects can sometimes hinder usability, distracting users from the content [44]. Therefore, the success of this approach often depends on balancing innovation with familiarity.

2.5 Target user group: young Swedish adults

Understanding the habits and preferences of the chosen user group is crucial for effective web design. The following section outlines how the selected user group interacts with websites, highlighting their behaviors, challenges, and expectations.

Young adults aged 19-30 represent a user group that has grown up with consistent exposure to the internet at home and in public places [56]. This has resulted in them generally being digitally native navigating web pages with ease and comfort [57][58]. However, even though this demographic is comfortable navigating the internet, they are far from technical experts [56]. Many have only enough knowledge to navigate standardized websites with recognizable design patterns and have little knowledge of how web pages are made [57].

When young adults visit websites, they usually already have their desired task in mind, resulting in them preferring sites that offer simplicity and ease of use, letting the user fulfill their task as quickly as possible [57]. Thus, elements that reduce simplicity, such as auto playing video, audio, or complex interfaces that require learning, frustrate this user group [59]. This preference for simplicity leads many to avoid interfaces with elements that they perceive as unknown for fear of

wasting time [57].

The preference to work quickly and move fast through different interfaces makes this user group especially error-prone [57]. If they do not perceive any immediate payoff for their effort, they usually skip all detailed instructions and pass over areas that appear too difficult or bothersome to use. This lack of patience for learning new interfaces results in this user group resolving issues through trial and error [57]. When their competence is challenged, they tend to develop a reduced interest in figuring out how a new website works.

Their favorite websites offer simple, clean designs that incorporate recognizable patterns [57]. These patterns allow them to navigate websites intuitively without any trouble or errors. The appreciation for interactive content exists, but mainly when it serves a useful purpose, plays a role in an entertainment experience, or does not reduce the functionality of the website [57]. Websites designed with overly elaborate layouts that distract from usability serve little purpose for this user group.

3 Tools and methodology

This chapter presents the tools and methodology used throughout the project to support the research, design, development, and evaluation of the two distinct website styles. It outlines the technical tools and frameworks that were used throughout the process, followed by a description of the research approach, design methodology, and testing procedures.

3.1 Tools

This section outlines the key tools and frameworks employed during the design, development and testing of the websites. Each tool was selected to ensure an efficient, collaborative, and structured workflow throughout the project.

Figma[1] was the primary design tool, used for creating both interactive prototypes and developing a *mood board* for the fictional company. Its wide range of design features and support for real-time collaboration made it well suited for team-based work and iterative design.

The development environment was based around GitHub[2], Next.js [3], and Tailwind CSS[4]. GitHub was used for version control and team collaboration, enabling efficient code management and tracking of changes. Next.js, a React-based framework, was used for its built-in performance optimizations, support for server-side rendering, and intuitive file structure. This contributed to faster development. Tailwind CSS, a utility-first Cascading Style Sheets (CSS) framework, facilitated rapid UI development with consistent design patterns and maintainable markup.

To implement modern, interactive elements, GreenSock Animation Platform (GSAP)[5] and Framer Motion[6] were used for animations, such as text transitions and entrance effects. GSAP is a high performance JavaScript animation library, ideal for smooth and complex timeline-based animations across browsers. Framer Motion, designed specifically for React[7], was chosen as it offers a declarative approach to animations and is easily integrated into component-based development for gesture-based and layout animations.

For 3D visual elements, Three.js[8] and Blender[9] were utilized. Three.js, a JavaScript library built on Web Graphics Library (WebGL), was used for render interactive 3D graphics directly in the browser, including the creation of a 3D cube visual implemented in the project. To facilitate integration with the React-based development environment, React Three Fiber[10], a React renderer for Three.js, was employed, along with React Three Drei[11], a helper library providing pre-built abstractions and utilities to simplify common tasks. Lastly, Blender, a professional grade 3D modeling and animation suite, was utilized to design and animate custom 3D models, which were exported and integrated via the Three.js ecosystem.

To evaluate crawling, indexing and performance, a set of freely available online SEO tools was used. The tools SEObility[12], SEO Site Checkup[13], Small SEO Tools[14], and Sitechecker[15] were

[1] https://www.figma.com
[2] https://github.com/
[3] https://nextjs.org/
[4] https://tailwindcss.com/
[5] https://gsap.com/
[6] https://motion.dev/
[7] https://react.dev/
[8] https://threejs.org/
[9] https://www.blender.org/
[10] https://r3f.docs.pmnd.rs/getting-started/introduction
[11] https://drei.docs.pmnd.rs/
[12] https://freetools.seobility.net/en/seocheck/
[13] https://seositecheckup.com/
[14] https://smallseotools.com/website-seo-score-checker/
[15] https://sitechecker.pro/on-page-seo-checker/

selected due to their accessibility, ease of use, and ability to provide quick, relevant insights without requiring extensive setup or technical integration. Additionally, Google PageSpeed Insights[16] was chosen for its reliable performance metrics, measuring the delay until content is displayed on page load. While these tools were free, they were also sufficient to meet the project's scope and objectives, making them practical and efficient choices within the given constraints.

3.1.1 Markup languages

HTML was used to define the structure of web content, while CSS was applied for styling elements not handled by the Tailwind CSS utility framework. JavaScript and TypeScript were utilized to add interactivity and dynamic functionality for the websites, with TypeScript improving code reliability through static typing and better development tooling.

3.2 Methodology

The project was structured into four main phases:

1. Preliminary study - Section 4
2. Creating the two websites - Section 5.1
3. Testing - Section 5.2
4. Development of web design recommendations, and a hybrid website - Section 5.3

The aim was to investigate how different web design styles affect user experience, by iteratively developing and evaluating two distinct prototypes.

3.2.1 Preliminary study

The project began with a preliminary study, aimed at defining and distinguishing the concepts of classic and modern web design. This phase provided the theoretical foundation for subsequent design decisions. In parallel, user research was conducted in order to gain a deeper understanding of user expectations. A digital survey, combining open- and closed-ended questions, was distributed to young Swedish adults between 19-30 years old. The primary focus was intended to collect qualitative insights regarding design preferences and perceived usability among the target audience. This input was intended to complement the literature findings and inform the initial design direction.

3.2.2 Creating the two websites

The development process was both iterative and exploratory. It began with *brainstorming* and to use generative *artificial intelligence* to conceptualize a fictional company, providing context for the designs. Functional requirements were defined, followed by the creation of a mood board and a *graphical profile* to guide the visual identity of both websites.

[16] https://pagespeed.web.dev/

Initial design explorations involved *throwaway prototyping* in the form of paper sketches and *low-fidelity wireframes*. These helped rapidly test layout ideas for the classic website.

For the modern website, a more dynamic and narrative-driven approach was adopted. *Storytelling* and *customer journey mapping* was used to imagine and describe UX across the site. This methodology facilitated the exploration of animation sequences and layout variations, focusing on emotional impact and visual flow. Rather than creating full-page *mockups*, smaller sections were initially prototyped individually and later combined into cohesive layouts.

The design was implemented using a *waterfall approach*, comprising two iterations, as the project's well-defined requirements enabled a straightforward, sequential development process. The first iteration was the development of *Minimal Viable Products* (MVP) of each website, which was evaluated by the team through a MVP review, to identify areas of improvement. The second iteration addressed the feedback from the MVP review and finalized the websites.

3.2.3 Testing of the two design styles

User testing

To evaluate and compare the two website versions, user testing was conducted using a *within-subject* approach [60]. Each user tested both versions of the websites. To mitigate order effects, users were split evenly, with half beginning with the modern website, and the other half with the classic version. Building on the objectives, questions for the user test were developed. In addition to questions guiding users through all the pages, specific tasks were designed to complete. Each test session followed a *think-aloud protocol*, during which test users completed the set of predefined tasks while verbalizing their thoughts [61]. This method was chosen so that the users would share their thoughts and ideas while exploring the website. Lastly, the user tests was concluded with an interview, consisting of open-ended questions, gathering additional insights.

Testing was conducted in pairs, each consisting of a moderator and a note-taker. Data was gathered through note-taking and processed using *thematic analysis*, to identify recurring patterns and user insights. Thematic analysis is a qualitative method used to identify and explore recurring themes in textual data, enabling researchers to organize and describe data in detail and provide insights into users' experiences [62]. The thematic analysis was conducted using the following workflow [62]:

1. Gather all test data in an excel sheet.
2. Find and organize codes by color marking the data.
3. Extract the color marked data and place in their dedicated code groups.
4. Organize codes into appropriate themes.

This workflow ensured a systematic approach, which actively followed the required steps for thematic analysis.

SEO testing

SEO testing was carried out using the tools presented in Section 3.1. For each website, its link was entered into the corresponding tool's online interface, which generated a report outlining key SEO factors. These reports were then examined to identify insights relevant to the project's scope, contributing to the overall evaluation of the web design styles.

3.2.4 Development of the design recommendations

The idea of developing web design recommendations emerged early in the project and was identified as a key outcome. Shaped through an iterative process, the initial thinking was informed by prior design experience, and evolved over time and by relevant literature.

Initial drafts of the design recommendations were shared with team members, and was iteratively refined based on feedback. After user tests and thematic analysis, the development took a more structured and formal path. Ultimately, the design recommendations were primarily based on the findings from the thematic analysis, which provided a strong foundation for the recommendations.

To evaluate the design recommendations, a digital survey was conducted to gather expert feedback from both industry professionals and researchers within the areas of interaction design and software engineering, with the goal to find areas of improvement. It was done to confirm whether the design recommendations are relevant, applicable, and useful in real design processes and current design practices. The survey consisted of seven open-ended qualitative questions, and was accompanied with a close to final iteration of the design recommendations.

3.2.5 Design and development of the hybrid website

The design and web development of the hybrid website followed a similar design and implementation approach as the initial phase, as described in Section 3.2.2. Additionally, 3D modeling and animation were used to produce high-quality visuals that aligned with the overall design direction, and were seamlessly integrated into the final product.

User testing during this phase focused on evaluating and refining the final hybrid design. Some users from the previous user tests returned to comment on the design's evolution, while new users were included to provide fresh perspectives. This phase supported validation of key conclusions the project.

4 Preliminary study

A preliminary study was conducted to inform the design and development of the project. Its primary goal was to define two contrasting web design styles, ensuring conceptual clarity in the absence of standard terminology. The study also explored user preferences related to usability, accessibility, and aesthetics. This section presents the resulting style definitions and summarizes the findings from the user survey.

4.1 Defining classic and modern web design

In order to define classic and modern web design, a range of online sources were read and websites were explored. The search for relevant theoretical works included the usage of Scopus[17], Web of Science[18], IEEE Xplore[19], OpenAlex[20] and Google Scholar[21], as well as keywords such as *web design, web design styles, user design, classic web design, traditional web design, static web design, dynamic web design, modern web design*, and *contemporary web design*. The initial keyword search generated a broad spectrum of academic papers and results. Subsequently, for the selection of quality references, materials were evaluated to ensure they were relevant to the project's scope, featured current information from credible authors within the field, and demonstrated scholarly rigor. Preference was given to peer-reviewed works, or, in their absence, publications frequently cited by other researchers.

However, as academic literature focused mainly on accessibility and usability, it offered limited insight into visual characteristics and distinctions between web design styles. To address this, well-established design blogs and websites were consulted, providing practical perspectives on aesthetic trends and key features of classic and modern web design. These more subjective aspects, often overlooked in scientific research, proved valuable to the project's goals. Furthermore, web design examples were examined to identify consistent visual and structural characteristics. The findings of this research are presented in Section 2.4, discussing different existing web design approaches.

Based on these research findings, two contrasting design approaches were identified from observation of patterns and grouping of common traits. Although no universally accepted definitions fully captured the distinction, two working definitions for classic and modern web design were formulated to ensure clarity and consistency throughout the project. In short, classic design refers to convention-oriented design, while modern denotes trend-driven web design. These definitions served as the conceptual foundation for the subsequent stages of the project.

4.1.1 Project definition of classic websites

In this project, classic design is defined as a style that emphasizes clarity, familiarity, and functionality by following established visual and interaction patterns proven effective over time. Such websites typically feature intuitive navigation, grid-based layouts, structured content hierarchies, and consistent placement of elements like logos and headers. Rather than relying on complex animations or dynamic visuals, they use flat, two-dimensional, and static layouts that prioritize content and task completion. The primary focus is on presenting information in a clear, accessible, and user-friendly manner.

[17] https://www.scopus.com/search/form.uri?display=basic&zone=header&origin=#basic
[18] https://www.webofscience.com/wos/woscc/basic-search
[19] https://ieeexplore.ieee.org/Xplore/home.jsp
[20] https://openalex.org/
[21] https://scholar.google.com/

4.1.2 Project definition of modern websites

In contrast to classic websites, the project defines modern design as a style focused on visual engagement, interactivity, and aesthetic storytelling. These websites often incorporate innovative and dynamic elements, such as complex animations and 3D visuals, to create immersive user experiences. They typically break from conventional structures, favoring creative layouts, bold typography, experimental or restrained color palettes, and strategic use of whitespace to highlight content. The primary goal is to establish strong digital branding and deliver memorable experiences that attract attention and reflect evolving design trends and emerging technologies.

4.2 User survey

To gain a deeper understanding of user preferences and behavior, a digital user survey was conducted as part of the preliminary study. The survey focused on core aspects of website aesthetics, usability, and accessibility, aiming to highlight which features the website target audience find the most valuable in web design. The survey was intentionally kept brief to encourage participation, consisting primarily of questions related to design preferences, which can be seen in Appendix C. In total, 26 people within our targeted audience responded and the findings are summarized in the following paragraph.

The survey responses revealed that target users emphasize the importance of simplicity, speed, and clarity. Preferred features included clean layouts, clear navigation, readable text, and a balanced use of visual media. While the respondents appreciated interactive elements that enhance usability, they were critical of features that introduced confusion, overwhelm or frustrations. Intrusive pop ups, auto play media, or complex navigation systems were mentioned as examples of this. Furthermore users frequently praised, Apple (2025, https://www.apple.com/), IKEA (2025, https://www.ikea.com/), and Wikipedia (2025, https://en.wikipedia.org/wiki/Main_Page) for their intuitive and visually clean designs. These findings align with insights from NNGroup, which emphasize that young users prioritize efficiency and familiarity in digital experiences [57].

The survey findings, together with the user research presented in Section 2.5, provided valuable context for understanding user expectations and frustrations, forming a strong foundation for the projects development.

5 Design and Development process

This section outlines the design and development process, and intermediate outcomes that led to the final web design recommendations, as well as the final hybrid website. It begins with the first web development phase, detailing the design and implementation of both the classic and modern websites. This is followed by a description of the user testing process and the evaluation of the collected data. Finally, the section presents the creation of the design recommendations and the subsequent development of the hybrid website, which also includes evaluation and iteration of both.

5.1 Creating the two websites

The initial phase of the development process focused on the design and implementation of two separate websites, one in a classic style and one in a modern style, centered around a fictional company. This subsection describes the design approach taken for each version and presents the partial outcomes of this phase, namely the completed classic and modern website prototypes.

5.1.1 Fictional company and target audience

In order to create a solid foundation for the project, a fictional company, *deCube*, was created as the basis for both website designs. Developing a fictional company provided a neutral and structured starting point, ensuring that both websites were built under the same conditions and remained consistent. Additionally, it contributed to a cohesive design process, making it easier to make informed decisions regarding both functionality and aesthetics.

The company deCube is a high-end brand, specializing in exclusive decorative cubes made from an innovative space material called *Astrolight*. These cubes, available in three sizes, are marketed as premium interior design pieces, making it essential for both website designs to reflect a luxurious aesthetic.

To guide the design process further, a target audience was defined to align choices with user expectations and preferences. deCube's primary audience consists of mainly young adults, appreciating minimalist, high-quality, and stylish products. As they are most likely familiar with technology, the websites had to provide a user experience that met their expectations in terms of both visual appeal and usability.

5.1.2 Web design requirements

Web design requirements were established to align with user expectations and support the website's objectives. The following list presents the results.

Functional requirements

1. The user should be able to read about the cube.
    1.1. The user should be able to read about the material.
    1.2. The user should be able to read about the purpose of the cube.
    1.3. The user should be able to read about the different sizes of cubes.
2. The user should be able to check out and buy a cube.
    2.1. The user should be able to add a cube to the cart.

2.2. The user should be able to remove a cube from the cart.

3. The user should be able to navigate the website.
4. The user should be able to read about the company.

4.1. The user should be able to contact the company.

Domain assumptions

- **Domain Assumption:** We assume that the user has internet.
- **Domain assumption:** We assume that the user has previous computer and internet experience.

5.1.3 Interface design

After defining the target audience and functional requirements, the group began exploring layout ideas through throwaway wireframing for the classic website. These initial sketches helped visualize structural concepts and led to new design directions. Figure 7 shows a digital version of the final paper wireframe, which served as the visual foundation for the next iteration.

Based on insights from the wireframes, the team transitioned to prototyping in Figma. Approximately 15 mockups were created, exploring different visual styles and layouts. One of these was selected to establish the visual identity of the classic website moving forward. Examples of the mockups can be found in Appendix F.

Mood board and graphical profile

To guide further prototyping, a mood board and graphical profile were developed. The mood board, shown in Figure 8, was designed to reflect deCube's brand identity with visual influences from contemporary architecture and industrial cafés. The graphical profile defined font choices, logo usage, and a color palette. This provided a consistent visual direction, while allowing flexibility for the modern website's more expressive style.

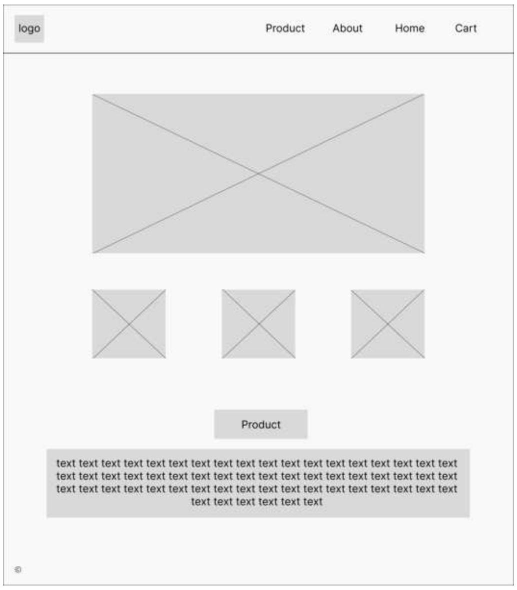

Figure 7: Digital version of the final iteration of paper wireframes for the classic website.

Figure 8: A moodboard representing the visual identity of the fictional company deCube, as inspiration for prototyping.

Mockups for classic website

With a clear visual foundation established, the team used Figma to prototype a full set of classic website pages. They applied familiar layouts and standard design patterns to prioritize clarity, usability, and efficiency.

Interactive elements were clearly defined, with integrated feedback mechanisms to support intuitive use. The design followed principles such as discoverability, consistent design, user control, and conceptual models. While rooted in a classic style, the site avoided a dated look through a clean, modern visual hierarchy. UX heuristics and laws, including Jakob's Law and gestalt principles, were applied where appropriate. The final mockups served as a blueprint for developing the MVP.

Storytelling and prototyping for the modern website

The design process for the modern website diverged from the classic version, taking a more experimental and dynamic direction. Although it began with brainstorming and basic wireframing, it soon became clear that a narrative driven approach was more suitable.

Short stories were created to illustrate the user's journey through the site, supported by rough storyboards outlining key interactions and transitions. These sketches guided the design of smaller modular interface sections, which were reviewed, iterated, and later combined into full-page mockups. This approach enabled experimentation with layout structures, animation, and transitions, emphasizing visual flow and user engagement. Once a suitable combination was found, refined mockups were developed to support implementation.

The final design featured creative layouts, innovative scroll behaviors, and dynamic visual elements. Unlike the classic version, the modern design encouraged exploration through visual cues and motion to spark curiosity. In some cases, usability was intentionally compromised for artistic expression. For example, one section uses vertical scrolling to trigger horizontal movement.

While core concepts like consistency was preserved, others, such as conceptual models and Jakob's Law, were deliberately challenged to enhance the intended experience.

5.1.4 Implementing MVP websites

Initially, two MVP's were implemented, one for the classic website and one for the modern website, forming the foundation for the first design iteration. The goals for each MVP were clearly defined and documented.

Classic website's MVP - goals

The following features and functionalities were defined as the classic website's MVP:

- A navigation bar containing the company logo and working links to the homepage, contact page, about page, and checkout page.
- A footer containing the company logo and copyright. It should also contain working links to the homepage, contact page, and about page. It should also contain links to social media, however these do not need to be functional.
- There should be different pages containing product information, contact information, a checkout page, and one page containing information about the company.
- It should be possible for a user to purchase one or several cubes, and edit their cart before placing the order.
- The website design should be cohesive and follow the Figma prototypes.

Classic website's MVP - results

The first iteration of the classic website successfully met all defined MVP feature goals. It included a clear, familiar navigation structure, multiple sub-pages, and a functional checkout process. The visual design followed a minimalistic style focusing on readability and a straightforward layout, closely aligned with the Figma prototype.

Animations and complex visual effects were intentionally excluded to reflect classic web conventions and support an intuitive user experience. As a result, this iteration was nearly complete, requiring minimal changes in the second iteration. The homepage, about page, and checkout remained unchanged, while the first version of the contact page, shown in Figure 9, was redesigned in the the next iteration. The rest of the screenshots can be found in Appendix A.1.

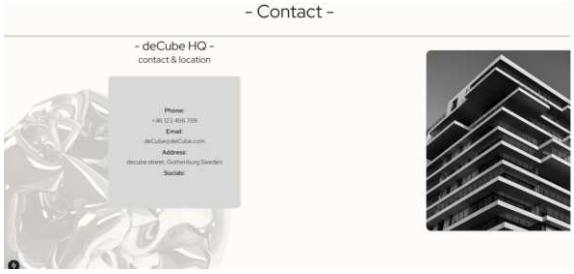

Figure 9: The first iteration of the classic website's contact page.

Modern website's MVP - goals

The modern website's MVP was designed with the following key features and functionalities:

- A menu that allows navigation between pages, including the homepage, about page, product page, Astrolight and cart.
- A footer containing the company logo and copyright. It should also contain working links to social media, however these do not need to be functional.
- There should be different pages containing product information, contact information, and company information.
- It should be possible for a user to purchase one or several cubes, and edit their cart before placing the order. The checkout process should be handled through a separate component.
- The website design should be cohesive and follow the Figma prototypes.
- The website should contain animations and effects such as page transitions, text animations, smooth scrolling, and image animations.
- A loading page with animations should be displayed when the website is first accessed.

Modern website's MVP - results

The modern website MVP met all the specified goals and closely followed the Figma mockup. It featured interactive features such as a loading screen, hover animations, and dynamic transitions to create an immersive experience. The design incorporated bold typography and an experimental navigation style to enhance visual engagement.

This MVP established a strong foundation for the modern concept, with only minor refinements introduced in the second design iteration. The home page, about page, product page, and Astrolight page remained largely unchanged. Screenshots of the homepage and about page are shown in Figures 10, 11, and 12. Additional screenshots are available in Appendix A.2.

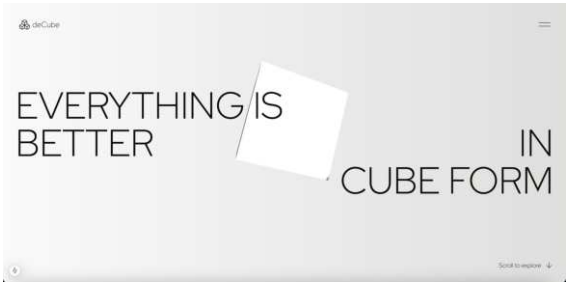

Figure 10: Hero section of the modern website's homepage. This is what the user sees when entering the website.

Figure 11: Modern website's homepage when scrolled. The cube follows the user when scrolling.

Figure 12: Hero section of the modern website's about page.

5.1.5 MVP review

To support the iterative design process, the MVP's were reviewed by the project group after initial development. This review identified both major and minor design flaws, and bugs, prompting a second design iteration.

The modern website underwent several design changes, including a redesigned footer and modifications to the contact section for improved visual cohesion. The classic website saw a complete redesign of the contact page to enhance layout and usability. Minor refinements, such as font adjustments, were also applied to both versions to improve consistency and visual hierarchy.

This review process was crucial for identifying issues overlooked in the first iteration and contributed to a more polished final product.

5.1.6 Final versions of the modern and classic websites

The final classic website

The final version of the classic website closely aligns with the established definition of classic web design. It features a familiar navigation structure and a timeless, minimal aesthetic that prioritizes functionality over decorative visual effects. The design emphasizes structure, efficiency, and directness, offering immediate access to the *Call To Action* (CTA) and clear core functionality. By focusing on clarity and simplicity, the design aims to support discoverability, feedback, conceptual

models, and clear signifiers, all contributing to an intuitive user experience.

The layout reinforces visual hierarchy, guiding users through content in a logical and user friendly manner, while maintaining user control through accessible navigation. This approach reflects Jacob's law by aligning with user expectations from similar websites, and Miller's law by minimizing cognitive load through uncluttered UI's.

Based on feedback gathered during the MVP review, the second design iteration introduced a few improvements. The most notable change was a redesigned contact page, which aimed to improve information flow and better address user needs. The updated version includes a *Frequently Asked Questions* (FAQ) section to help resolve common inquiries. The updated contact page is shown in Figure 13 and 14, while the homepage is presented in Figure 15. Additional screenshots are available in Appendix A.1.

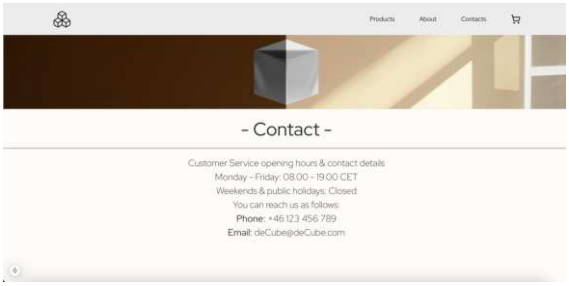

Figure 13: The second iteration of the classic website's contact page.

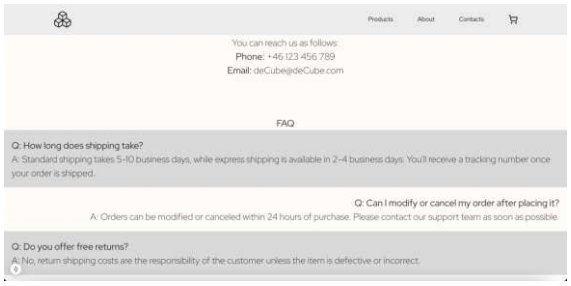

Figure 14: The second iteration of the classic website's contact page, when scrolled.

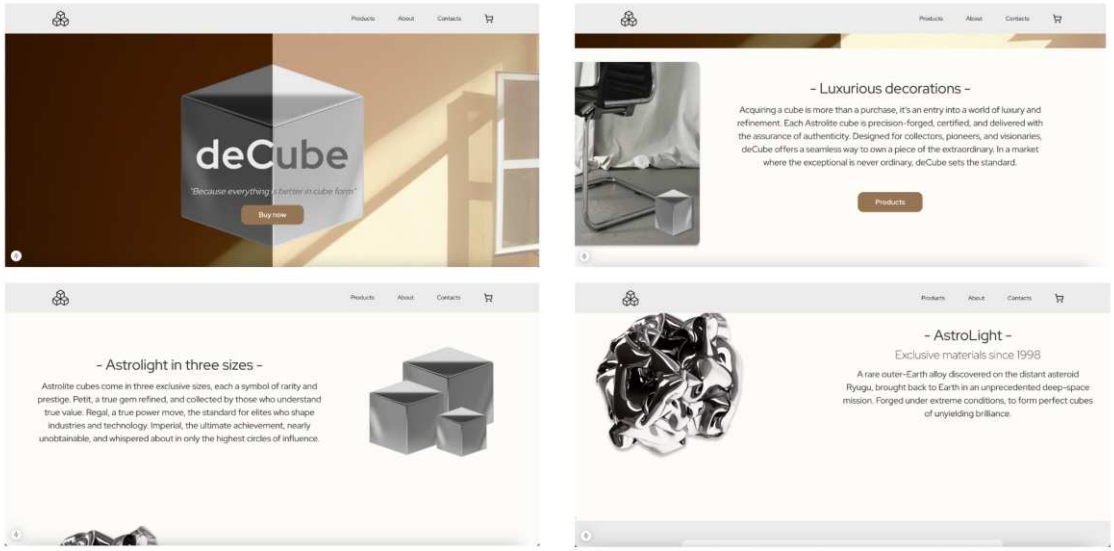

Figure 15: The classic website's homepage user journey showcased in multiple steps.

The final modern website

The modern website was designed to reflect modern web design trends as defined in the project, with a strong focus on visual appeal and immersive user experience. Inspired by the concept of a digital commercial, it gradually revealed content to provoke curiosity and create a memorable

impression. Design choices such as experimental navigation, animations, and dynamic typography were intended to enhance user engagement. While established patterns like the hamburger menu, visual consistency, and Miller's law were applied, other principles such as user control, and conceptual models, were intentionally set aside to prioritize aesthetics and exploratory interaction.

Most elements from the MVP remained unchanged after the MVP review. However, the loading screen and footer underwent the most significant updates in the second design iteration. The revised designs are shown in Figures 16 and 17, additional screenshots of the website are available in Appendix A.2.

Figure 16: The second iteration of the modern website's loading screen.

Figure 17: The second iteration of the modern website's main footer.

5.2 Testing

The next phase of the project focused on testing, which involved evaluating UX through user testing. To complement this, SEO aspects were also tested, addressing the relevance of performance and visibility for web developers and businesses. The findings informed the design decisions and contributed to the development of the final design recommendations and the hybrid website.

5.2.1 Performing user tests

User testing was carried out to evaluate classic and modern design styles. The purpose was to test usability and gather users' opinions of each website. Most of the test users were students from Chalmers University of Technology. A total of 12 users participated in the testing, all within the project's target audience and had previous computer skills.

Before any user testing, a pilot test was performed with a group member who had not been involved in this process. This allowed for a review of the questions and tasks, making necessary alterations possible before the actual testing.

Since the goal of the test was to gather opinions, there were no right or wrong answers. Instead, the primary focus was to encourage test users to share as many thoughts and opinions as possible. Think-aloud method was chosen so that users could share their thoughts and ideas while exploring the website and then have them answer more detailed questions at the end. The finalized tasks and questions can be found in Appendix D.

Our planning resulted in a structured testing process. Each test began with a brief introduction about the purpose, expectation of the test user, and what data would be collected. During the introduction, the think-aloud method was explained and clarified.

During testing, it was observed that some test users naturally shared their thoughts, while others required reminders to use the think-aloud protocol. Some users were eager to explore the websites

independently, while others hesitated or sought clarification about what they were allowed to do. Consequently, certain questions tended to overlap or were indirectly addressed through earlier responses, especially among more vocal test users.

5.2.2 Process to evaluate the user test data

After the first testing phase, the thematic analysis was initiated. The first step involved producing a fair copy of the users' responses and becoming familiar with the data. The next stage focused on color-coding and assigning appropriate labels for different colors. For example, comments related to scrolling were grouped under one code, while comments expressing certain feelings were placed under another.

Following the coding, the next step was to develop themes. Some initial ideas for grouping codes had already emerged during earlier discussions. A first draft of themes was created to then be discussed and iterated. For example, comments covering visual design, both positive and negative, were categorized under the theme **Visual Design & Aesthetics** as shown in Table 3.

The process of identifying codes and themes was refined through several iterative cycles. The final step was to name the themes and compile them with the corresponding codes and user quotes.

5.2.3 User test results

Thematic analysis revealed six key themes, see Figure 18, that shaped users' experiences and opinions:

1. Familiarity & Trust, Table 1
2. Navigation & Findability, Table 2
3. Visual Design & Aesthetics, Table 3
4. Cognitive Load & Clarity, Table 4
5. Purpose & Brand Communication, Table 5
6. Engagement & Interaction, Table 6

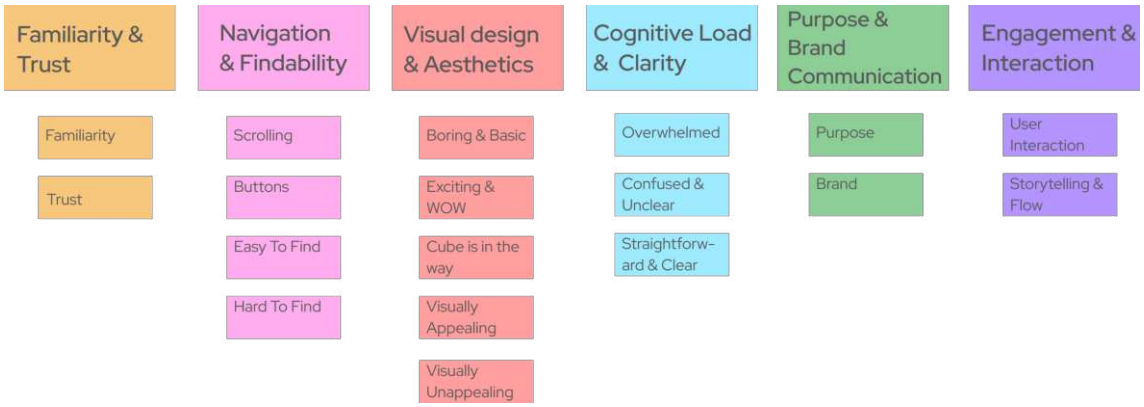

Figure 18: Overview of the six key themes identified through thematic analysis, arranged from left to right: 1. Familiarity & Trust, 2. Navigation & Findability, 3. Visual Design Aesthetics, 4. Purpose & Brand Communication, 5. Engagement & Interaction, and 6. Cognitive Load & Clarity.

Thematic analysis highlighted contrasts between different websites. The classic was generally described as basic, functional, and easy to navigate. Its familiarity, clear structure, and straightforward communication elevated user trust and comfort. As shown in Table 1, users associated the classic design with a sense of safety and comfort due to its recognizable layout and traditional elements. Some users found it outdated and less engaging, while others appreciated its simplicity and clarity, especially in terms of navigation.

In contrast, the modern website impressed users with its dynamic, artistic design and strong brand presence. As detailed in Table 3, users described the site as visually striking, engaging, and creatively styled, offering a more immersive and emotional experience. However, this aesthetic appeal came at the cost of usability for some. Users reported cognitive overload, noting confusion, navigation difficulties, and unclear CTA. This aligns with feedback in Table 4, where the modern site's complex visual elements and animations were seen to increase mental effort and reduce clarity.

Navigation was a key differentiator. As seen in Table 2, users found the classic website easier to navigate due to its fixed headers, clearly visible buttons, and conventional scroll behavior. In contrast, the modern site's creative layout, such as disappearing headers and sideways scrolling, reduced orientation and made tasks like purchasing more challenging.

In terms of communicating purpose and brand, the classic site was praised for immediate clarity about its intent as a webshop, see Table 5. Users instantly recognized what it was selling and how to take action. The modern site, while making a strong first impression in terms of brand aesthetics, sometimes left users confused about its core function, with some comparing it to an art exhibit rather than an e-commerce platform.

Engagement and interaction patterns also differed significantly. Table 6 shows that the modern site succeeded in creating a guided, story-driven experience that many users found exciting and immersive. Yet this same structure made others feel constrained, preferring the freedom and autonomy offered by the classic site's more static layout.

Both websites had strengths and weaknesses. The classic site offered efficiency and transparency, while the modern site provided a more emotionally engaging experience but occasionally risked overwhelming users. The evaluation suggests that balancing creativity with clarity is crucial in web design.

The classic website excelled in usability, providing a familiar and trustworthy environment where users could easily understand the purpose and navigate without confusion. Meanwhile, the modern website succeeded in creating a memorable experience through storytelling and dynamic design,

but sometimes compromised usability and cognitive clarity, as evidenced by recurring mentions of overwhelm and confusion in Table 4.

These findings emphasize the importance of aligning design choices with user expectations and goals. A successful design should aim to combine the engagement and excitement of modern aesthetics, Tables 3 and 6 with the intuitiveness and clarity of traditional structures, Tables 1, 2, 5, and 4, to create both a engaging and functional user experience.

Table 1: Theme 1, Familiarity & Trust: Description, codes, and user insights

Theme	Familiarity & Trust	
Description	Reflects user comfort and confidence in the product or website. Users associated trust and familiarity with design elements that felt traditional, intuitive, or recognizably structured.	
Codes	**Familiarity:** Recognition of familiar patterns, layouts, or interactions based on previous web experiences. **Trust:** Evaluation of reliability, professionalism, and safety based on design, structure, and content.	
User Insights	**Classic Website** "The classic website felt safer for making a purchase since it clearly displayed how many items were being bought." "The classic feels more familiar." "I feel secure, always good to have a header so you know where you are." "Immediately more compact, familiar interface, I feel more comfortable as a user."	**Modern Website** "Feels like someone spent too much time on design to have made a good product."

Table 2: Theme 2, Navigation & Findability: Description, codes, and user insights.

Theme	Navigation & Findability	
Description	Explores how users find information and achieve goals. It focuses on how easily content or features can be discovered. Key aspects include the user's ability to orient themselves, quickly find what they are looking for with minimal confusion or effort. The theme also considers how familiarity and credibility influence user trust and confidence in navigating the UI.	
Codes	**Easy to find:** Content or features are clearly visible, accessible, and straightforward to locate on the website. **Hard to find:** Challenges users face when trying to locate key interactive elements or navigate through the site. **Buttons:** Clarity and visibility of buttons. **Scrolling:** User experience related to the scrolling function, focusing on intuitiveness and responsiveness.	
User Insights	**Classic Website** "The classic website was much clearer with a shopping cart in the top right and a clear menu instead of having to click to open a menu and then click again." "The product cards were much easier to find on the traditional site."	**Modern Website** "The modern site has no clear CTA. It is not obvious that you can buy the cube." "Scrolling felt like a maze going downward, creative, but a bit much." "The header disappears when scrolling down, which makes navigation more difficult." "Some buttons are unclear, and it's easy to miss elements that you can interact with." "Sideways scroll was unexpected and reduced my sense of orientation."

Table 3: Theme 3, Visual Design & Aesthetics: Description, codes, and user insights.

Theme	Visual Design & Aesthetics	
Description	Encapsulates users' visual experiences when browsing the websites, capturing both positive and negative reactions. It reflects how eye-catching elements and the overall aesthetic influence engagement and perception.	
Codes	**Visually appealing:** Visual attractiveness and overall aesthetic quality of the website's design. **Visually unappealing:** Failing to create a visually interesting or engaging experience. **Cube is in the way:** Refers to the rotating cube on the modern site that interfered with readability or navigation. **Boring & basic:** Describes websites perceived as uninspiring or lacking dynamic, engaging features. **Exciting:** Captures emotional engagement due to animations or interactive visual elements.	
User Insights	**Classic** "The classic site felt more basic." "The classic site, while functional, felt a bit outdated." "The classic was stylish, clear, and sleek."	**Modern** "Very dynamic, visually striking, and cool." "The modern feels like an art gallery, more of an experience." "The modern site had great whitespace, making it inviting and easy to read." "Fun that things happen when you move the mouse." "Exciting animation, fun that they rotate!" "The floating cube was distracting, sometimes covering text and making it difficult to see important information." "The cube makes it confusing, even though it's cool to look at."

Table 4: Theme 4, Cognitive Load & Clarity: Description, codes, and user insights.

Theme	Cognitive Load & Clarity	
Description	Reveals user understanding, mental effort, and whether the UI is intuitive. Cognitive load refers to how mentally demanding the user experience is, and how easy or difficult it is for users to process and understand the information presented. Designing with cognitive accessibility in mind is important to ensure that the website is understandable for a wide range of users.	
Codes	**Overwhelm:** Refers to users feeling overwhelmed by excessive visual stimulation, dense content, and overuse of animations or effects. **Confused & unclear:** User experiences where visual design, navigation, or functionality caused confusion. Highlights points where users found it difficult to interpret site elements. **Straightforward & clear:** Reflects user responses to websites that are easy to understand, predictable in layout, and transparent in communication.	
User Insights	**Classic** "The classic site provided direct information from the start, with a clear 'Buy Now' button and an informative header that quickly communicated its purpose." "Everything works well, clear and functional, nothing distracting." "The classic site had redundant information in the header and navbar, which was slightly confusing."	**Modern** "The presentation felt overly dramatic and complex, making the experience overwhelming rather than engaging." "The modern site was confusing when scrolling, you didn't always know where you ended up." "The modern one was somewhat confusing due to the many interactive elements and unclear buttons."

Table 5: Theme 5, Purpose & Brand Communication: Description, codes, and user insights.

Theme	Purpose & Brand Communication	
Description	Underlines how the websites communicate their core purpose, selling products, and brand identity. During the test, users reflected on whether they understood what the site was about, what it was selling, and who it was for.	
Codes	**Purpose:** How effectively the website communicates its core purpose, including whether users can quickly understand what the site is about and how to take action. **Product introduction:** How well the product information is presented, evaluating whether the product details are clear and easy to understand.	
User Insights	**Classic** "Immediately clear what the classic site is about." "As a webshop, the traditional one is significantly better. The modern one takes a very long time to go through before you understand that it's a webshop."	**Modern** "If it's a brand you're unfamiliar with, the modern site makes a strong first impression." "I only realized the purpose of the site when reaching the product page." "Not clear that you can buy something, it feels more like an art exhibit." "Very cool, but it feels more like an art gallery. It's not clear that you can buy something." "A bit too direct with 'buy now!' message."

Table 6: Theme 6, Engagement & Interaction: Description, codes, and user insights.

Theme	Engagement & Interaction	
Description	Relates to active user participation and narrative experience. It reflects how users responded emotionally and behaviorally to their interactions with the website, such as whether they felt guided or free to explore.	
Codes	**User interaction:** How users experience interactivity, including their actions (scrolling, clicking, hovering) and how the website responds. **Storytelling & flow:** The way the website uses storytelling techniques, structured flow, and visual transitions to guide users through a carefully designed experience.	
User Insights	**Classic** "I want to go at my own pace, that freedom I get in the classic one." "The traditional site felt less engaging." "The classic site provided more autonomy in the browsing process."	**Modern** "The modern website used a strong storytelling approach, guiding users down the page toward a purchase." "Feels like following a stream or a predetermined path." "The flow of content created a sense of curiosity, making me want to continue exploring." "The feeling you're selling is much stronger in the modern one." "The modern site is cooler and more interactive." "The custom cursor effect on the modern site is too much for a regular website."

5.2.4 SEO testing

As previously mentioned in Section 1.2, SEO tools were used to evaluate the websites' crawlability, indexability, and page speed, offering an additional perspective for comparing the two design styles. However, before presenting the results of these evaluations, an important issue with the modern website must be addressed. Initially, SEO tools were unable to properly access the website's content due to the implementation of a "click to enter" interaction. As a result, the only content visible to the bots was the loading screen, no links were detected, and only a few phrases were accessible to the crawlers: "CUBE/KUB/CUBO/KUUTIO/", "Loading", and "Clicktoenter". This limitation prevented other content from being crawled and indexed, which significantly affected the site's SEO performance. To provide a fair evaluation, the website was re-tested with this feature removed.

Table 7 presents the results from SEOBility and Sitechecker in detecting internal links on the classic and modern websites. All five sub-pages on the classic website were successfully crawled, whereas only three out of five were detected on the modern website. The classic website employed a consistent and straightforward navigation structure without dynamic elements, such as menus that unmounts when closed. This enabled SEO bots to crawl all internal links effectively. In contrast, the modern website used a full-screen menu that unmounted when closed, rendering its links inaccessible to crawling bots. Consequently, only the links visible directly on the page were indexed.

Table 7: Comparison of how well the SEO tools detect internal links on the classic and modern websites.

	Number of existing under pages	**SEObility** (number of found pages)	**Sitechecker** (number of found pages)
Classic website	5	5	5
Modern website	5	3	3

Table 8 presents the results from SEObility, SEO Site Checkup, Small SEO Tools, and Sitechecker, showing how each tool interpreted and indexed the example sentence "Because everything is better in cube form" on the classic and modern websites.

On the modern website, the text animations separated the sentence into individual characters, causing SEO bots to interpret it as a single continuous string: "Becauseeverythingisbetterincubeform". This behavior affected all text elements using the same animation technique. In contrast, the classic website did not use split-text animations, allowing bots to correctly recognize and index the sentence as "Because everything is better in cube form".

Table 8: Comparison of how the SEO tools interpret and index text content from the classic and modern websites.

	Example scentence	**SEObility**	**SEO Site Checkup**	**Small SEO Tools**	**Sitechecker**
Classic website	*"Because everything is better in cube form"*	*"Because everything is better in cube form"*	*"Because everything is better in cube form"*	*"Because everything is better in cube form"*	*"Because everything is better in cube form"*
Modern website	*"Because everything is better in cube form"*	*"Becauseeverythingisbetterincubeform"*	*"Becauseeverythingisbetterincubeform"*	*"Becauseeverythingisbetterincubeform"*	*"Becauseeverythingisbetterincubeform"*

Lastly, Table 9 shows the differences in loading speed of the websites using Google PageSpeed Insights, which measures the delay until content is displayed on page load. Due to the modern website's heavy reliance on visual elements, it had a slower loading speed than the classic website. As seen in Table 9, the modern website had a delay of 2.9 seconds while the classic had a delay of only 0.8 seconds.

Table 9: Comparison of delay until content is displayed on page load on the classic and modern websites.

	Google PageSpeed Insights
Classic website	0.8 seconds
Modern website	2.9 seconds

Discussion of SEO test findings

Although not visual to the user, some modern design choices might affect the way search engines crawl and index the website. Consequently, it is important for a developer or business to know what SEO complications might occur when implementing animations. While there are ways to avoid these issues, unaware developers might blindly follow tutorials on animations or interactions without considering SEO pitfalls.

One example of a potential pitfall, the modern website developed for this project adopts the same text-splitting technique as shown on Olivier Larose's blog [63]. Larose, a front-end developer at award-winning agency Locomotive [64][65], shares creative web interaction tutorials on his blog and YouTube channel. However, this split-text method is not SEO compatible, as it omits spaces in the HTML and relies on CSS for spacing. This causes crawlers to interpret entire phrases as single words, hindering keyword indexing, and search relevance, leading to a possible lower ranking in the SERPs. This example shows that even following guidance from professionals in the industry can be misleading if not aware of SEO and possible side effects of creative interactions.

5.3 Design recommendations and web development

The final phase of the project consisted of the development of design recommendations and a hybrid website. Additionally, evaluation of both was performed, through user testing of the website, and a digital survey of the web design recommendations.

5.3.1 Hybrid website

The third website represents a hybrid approach, combining elements of classic and modern web design, based on the strengths identified during earlier development phases.

The design and testing processes followed a structure similar to that of the initial development phase. However, instead of relying solely on predefined definitions of classic and modern design styles, the design decisions were informed by insights from the thematic analysis and guided by the evolving design recommendations developed in parallel with the web implementation.

What distinguished this phase from the previous ones was the increased focus on 3D modeling and animation. These elements were more extensively integrated into the website, allowing greater creative expression and contributing to a richer visual experience. This also served as a valuable

learning opportunity in applying 3D assets effectively within a web environment.

Additionally, this phase benefited from the reuse of previously developed design components that had been identified as strong during the thematic analysis. This reuse contributed to a more efficient development process, and made it possible to carry out the work with a smaller team than in earlier phases.

After the design of the hybrid website had been fully implemented and reviewed by the team, it was evaluated through user testing. The primary goal of the testing activity was to evaluate whether the hybrid design approach was successful, and was able to eliminate the weaknesses of the classic and modern approaches. However, the insights gathered during testing also informed refinements to the website, contributing to the final version presented in Section 6.1.

Hybrid website user testing

The results of the user test were opinions gathered from 13 users, seven were returning and six were new, providing different perspectives to help validate the web design recommendations. The hybrid website was praised for successfully combining the clarity of the classic version, with the creativity of the modern one, by the returning respondents.

Users found the navigation clearer and more intuitive, particularly due to the removal of horizontal scrolling and improved menu accessibility, which resolved earlier confusion. One user expressed the following: *"Much better navigation, clear and straightforward to understand. The menu was nice and accessible! You get a better overall picture of the website"*. It also included helpful features like a fixed menu that remained accessible while scrolling.

Animations and visuals were praised for being engaging without being overwhelming. Respondents found the interactive features enjoyable yet subtle, enhancing the user experience without detracting from the website's functionality. Images and videos were considered more relevant and helped users better understand the product. One user said: *"It feels like the animations and pictures are better used. They are not in the way like before but instead add to better understanding and a more nice design"*.

A different user commented *"I feel like the feedback I gave you the last time has been implemented. The design is still cool but much easier to handle. Last time the modern felt more flashy over comfort, now it feels like a nice combination of them both"*. Another added: *"It feels like you have taken the good parts from the modern site and polished them and used them in a better way"*. A third remarked: *"This new version feels like a good evolution of the previous website. The new version gives a better overview of the product, clearly presenting the content while keeping the site interesting"*.

Some minor suggestions included clearer button labeling and adding contact information in the footer. One respondent specifically stated: *"I would like to have the contact information in the footer as well, and links to FAQ"* . Overall, they felt the website had evolved thoughtfully, resulting in a more coherent, user-friendly, and polished experience.

The hybrid website was generally seen as cool and engaging by the new respondents. While some initially found it confusing, they quickly adapted and felt comfortable navigating the layout. Six participants appreciated the stylish design, while eight highlighted the smooth animations. Seven people also enjoyed the interactive elements, which *"makes it more fun"* and gave the site a lively, modern feel without being overwhelming.

Navigation was considered intuitive by ten test users. One described it as *"pretty straightforward navigation"*, although there were minor misunderstandings with a "Buy Me" button, which *"was a bit confusing"*. Visual design elements were also well received, with several users noting that

it *"looks professional"*, had *"cool animations"* and featured *"a good disposition of images and text"*.

Certain areas for improvement were identified. Text readability was occasionally an issue, and transitions caused momentary disorientation for some users. Additionally, the absence of contact information in the footer stood out to multiple respondents, one of whom stated, *"I would have expected contact information in the footer from a company that's selling a product"*. The comments and suggestions were carefully reviewed and addressed prior to finalizing the website. The resulting refinements are incorporated into the final version of the hybrid website, presented in Section 6.1.

Overall, users found the layout appealing and appreciated the thoughtful combination of content and visuals. One remarked, *"I like the balance of the images and the text. The dynamic and interacted elements also was fun and improved the experience"*. The overall impression was that the site feels trustworthy for luxury products, with only a few small improvements needed to further enhance the user experience.

Hybrid website SEO testing

This section presents the SEO testing results for the hybrid website, alongside those of the classic and modern versions to enable clear comparison. As seen in Table 10, all navigation links are visible, even though this website also implements a menu that unmounts when closed, similar to the modern website. Furthermore, as shown in Table 11, despite the hybrid website still using split-text animations, the SEO bots can successfully read phrases with separate words instead of interpreting them as a single, continuous word. Lastly, although not as optimized in terms of speed as the classic website, there is a significant improvement compared to the modern version, as demonstrated in Table 12.

This suggests that by understanding potential SEO pitfalls associated with modern design choices, developers can implement solutions that mitigate these issues. Creative animations and interactions may still be incorporated without compromising the ability of search engine crawlers to accurately crawl and index the website.

Table 10: Comparison of how well the SEO tools detect internal links on the classic, modern, and hybrid websites.

	Number of existing under pages	**SEObility** (number of found pages)	**Sitechecker** (number of found pages)
Classic website	5	5	5
Modern website	5	3	3
Hybrid website	6	6	6

Table 11: Comparison of how the SEO tools interpret and index text content from the classic, modern, and hybrid websites. Note that the example phrase on the hybrid is slightly different, as it did not have the exact same phrase as the other two websites.

	Example scentence	**SEObility**	**SEO Site Checkup**	**Small SEO Tools**	**Sitechecker**
Classic website	*"Because everything is better in cube form"*	*"Because everything is better in cube form"*	*"Because everything is better in cube form"*	*"Because everything is better in cube form"*	*"Because everything is better in cube form"*
Modern website	*"Because everything is better in cube form"*	*"Becauseeverythingisbetterincubeform"*	*"Becauseeverythingisbetterincubeform"*	*"Becauseeverythingisbetterincubeform"*	*"Becauseeverythingisbetterincubeform"*
Hybrid website	*"Everything is better in cube form"*	*"Everything is better in cube form"*	*"Everything is better in cube form"*	*"Everything is better in cube form"*	*"Everything is better in cube form"*

Table 12: Comparison of delay until content is displayed on page load on the classic, modern and hybrid websites.

	Google PageSpeed Insights
Classic website	0.8 seconds
Modern website	2.9 seconds
Hybrid website	1.9 seconds

5.3.2 Developing the web design recommendations

A primary goal of this project was to develop a set of web design recommendations aimed at helping developers and companies create websites that combine classic and modern design approaches, with the purpose of thoughtfully balancing familiarity and innovation.

The development of the design recommendations followed an iterative process that began during the preliminary study, where research into classic and modern website design styles began to shape preliminary thoughts and directions. However, in the early stages of the project, no formal documentation for the design recommendations was created, but the insights were kept as informal notes until later. It was not until after conducting a thematic analysis of the data collected from the first round of user tests that these ideas began to take shape as concrete recommendations. Iterations of the recommendations can be seen in Appendix B.

The first iteration of formal, well-structured design recommendations was developed in parallel to the implementation of the hybrid website, both reflecting the results from thematic analysis and research findings [66][67]. Following this, a second round of user testing was conducted to evaluate the hybrid design. Simultaneously, a survey containing a draft of the design recommendations was sent out to experts in the field, including professors in software engineering and design, as well as industry professionals, to gather their perspectives. The insights gathered from both users and professionals were then used to create the final draft of the design recommendations.

This iterative approach allowed the design recommendations to be developed thoughtfully, informed by both user feedback and expert opinions. The following section outlines the expert feedback process in greater detail.

Expert survey process and result

The digital survey was distributed to ten experts, including researchers in software engineering and interaction design at Chalmers University of Technology, as well as professionals from the web development industry. One researcher and one practitioner responded to the survey. The set of questions can be found in Appendix E.

The feedback collected from the experts provided valuable insights into the strengths and limitations of the proposed web design recommendations. Overall, the responses indicated that the design recommendations are a strong and clear contribution, particularly in terms of practical relevance and user-centered intent. However, the feedback also points out several areas of improvement that could enhance both clarity and utility in the next iterations.

From a researcher's perspective, the design recommendations were considered clear and understandable. The design recommendations' relevance to current web design practices was highlighted, noting that they align well with challenges designers face today. Feedback from the practitioner working in UX, UI, and front-end development emphasized that the recommendations were not only clear, but would make sense to any industry professional. It was even stressed that the principles are even more relevant today than ever before, due to a frequent neglect of design fundamentals in modern product development. Moreover, the practitioner appreciated that the design recommendations could serve as a useful reference in cross-functional projects, particularly to bridge communication between technical and non-technical team members, such as marketing and sales.

Importantly, the practitioner also valued the concise and focused nature of the design recommendations, warning that adding too many principles or number of recommendations could make them harder to remember, and apply effectively. Lastly, they observed a slight bias towards the classic design principles. However, they saw this as beneficial, as these methods have consistently proven to enhance usability and clarity across different project types.

The researcher noted, while the design recommendations are conceptually sound, they may be too abstract or high-level to easily translate into actionable decisions. Therefore, they recommended that future iterations include positive and negative examples to clarify how each principle could be implemented effectively in practice. Similarly, the practitioner suggested to include practical guidance, recommending the inclusion of real-world use cases to help teams implement the recommendations during project work.

Lastly, one important point was brought up, which was a question of novelty. Given the abundance of existing web design recommendations, it is essential to clarify why new design recommendations are necessary, and how they differ from previous work. Thus, from a research perspective, this iteration of design recommendations presented may appear familiar, which highlights the need to better articulate their unique contribution.

6 Results

6.1 The third website - a hybrid design approach

After design, implementation, and iteration after user testing, this section will now present the final website serving as an example of a hybrid design approach. The final design incorporates several refinements based on user feedback from the user testing described in Section 5.3.1, including adjustment to improve text readability, visual transitions, and footer content. While some images displaying various design elements are presented in this section, a full set of screenshots can be found in Appendix A.3.

First is the navigation and footer design, which remains consistent across all pages of the website. Significant improvements have been made to the navigation compared to the modern website. A clear header navigation bar has been introduced, as seen in Figure 19, providing immediate feedback to users by indicating their current location within the site. As users scroll, the header transitions into a prominent but modest hamburger menu, visible Figure 20, maintaining consistent access to navigation options without disrupting the visual experience.

Figure 19: Hybrid website with clear navigation bar

The navigation design follows familiar design patterns, reducing the learning curve and supporting Jakob's Law by aligning with user expectations. Furthermore, the navigation system is structured around a clear and intuitive conceptual model, making it easier for users to understand the site's structure and predict where to find information. These improvements collectively enhance user control, reinforce usability principles, and contribute to a more user-friendly and efficient browsing experience.

Figure 20: Hybrid website footer, also showing the hamburger menu in the upper right corner.

The footer remains visually similar to the modern version. However, Figure 20 shows how the content has been updated to feature a clear CTA rather than only displaying the "deCube" text. This strengthens the website's communication and reinforces visual hierarchy principles at the page's conclusion.

6.1.1 Home page

The home page presents a minimalistic and interactive introduction to the website's purpose, divided into four main sections. The first section retains the modern website's hero design but introduces a more informative header, see Figure 21 providing users with clearer guidance on what actions are possible and encouraged on the site. This enhances both the visual hierarchy and user control compared to the modern version.

The second section displays a cube placed on a table within an interactive 3D room, accompanied by the heading "Luxurious Decorations," descriptive text, and a "Read More" option, see Figure 22. Compared to the modern website, this structure offers improved visual hierarchy and

contextual clarity, aligning with core usability principles.

The third section showcases the three available sizes of the decorative cube, as seen in Figure 23. The layout has been redesigned to improve visual grouping and readability, supporting users' cognitive processing in line with Miller's Law by minimizing the complexity of visual information.

The fourth and final section focuses on the material Astrolight, see Figure 24. Compared to the modern design, this section is significantly less cluttered and includes additional explanatory text to provide necessary context. The interactive falling pieces of Astrolight add uniqueness and encourage engagement, contributing positively to memorability and a stronger overall user experience.

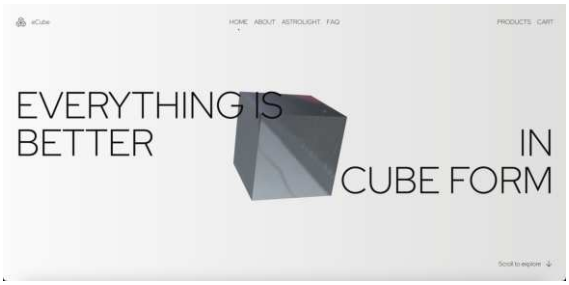

Figure 21: Hybrid website hero section. This is what the user sees when entering.

Figure 22: Hybrid website section showcasing cube in interactive 3D environment.

Figure 23: Hybrid website section showcasing the different cube sizes.

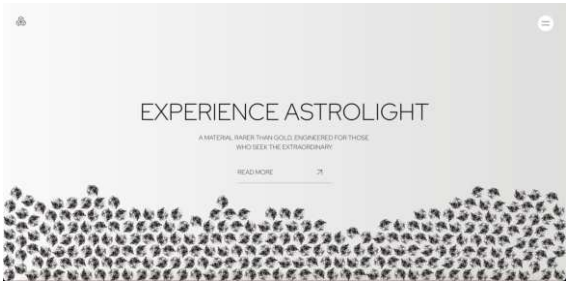

Figure 24: Hybrid website section with interactive Astrolight elements.

6.1.2 About page

The about page has been redesigned to incorporate more whitespace, clearer descriptive headings, and improved information structuring. The first section introduces the company, followed by a creative layout presenting the company's vision, supported by product images. The third section addresses the product's reception and policies, with key information bolded to increase scannability and support efficient information retrieval. Finally, a CEO quote is combined with a strong CTA, guiding user engagement through familiar layout patterns consistent with Jakob's Law. Figure 25 shows the company vision section.

Figure 25: Hybrid website company vision section on the about page.

6.1.3 Astrolight page

The Astrolight page has undergone significant redesign. It now features an interactive 3D model and a rendered animation created with Blender, adding a professional visual appeal that aligns with the home page aesthetic. The centrally positioned animated model, shown in Figure 26, creates a strong visual impact, or as some test user described as "wow factor", enhancing the user's first impression and contributing to a memorable experience.

Figure 26: Hybrid website Astrolight model on the Astrolight page.

Clear headings, and explanatory text, support comprehension and readability. The page concludes with a CTA to guide users toward further interaction.

6.1.4 FAQ page

An FAQ page was added in the hybrid design to increase trustworthiness and address user questions efficiently. In addition, the contact information has been redesigned for improved readability, avoiding the vertical side layout of the modern version. Clear grouping of information enhances usability and reduces cognitive load, aligning with both Miller's Law and Gestalt grouping principles. Figure 27 shows the FAQ section of the page.

6.1.5 Product page

Due to the positive feedback received during user testing, the product page remains largely consistent with the modern version. Minor improvements include updated button designs, slight text repositioning, and a redesigned top section to ensure greater visual unity across the website, further supporting Jakob's Law through consistency with familiar patterns. Figure 28 shows an item on the product page.

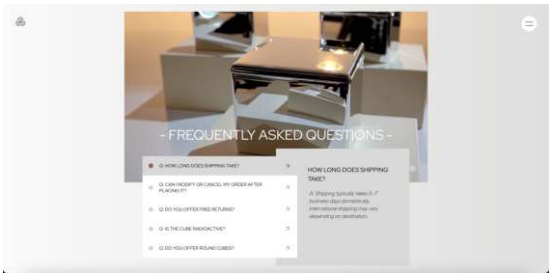

Figure 27: Hybrid website frequently asked questions.

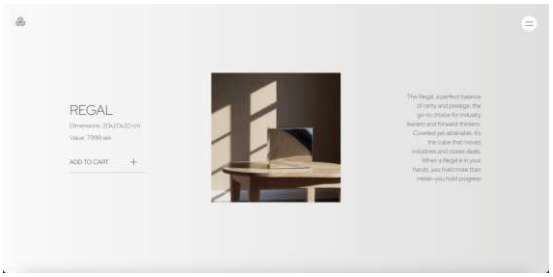

Figure 28: Hybrid website product card on the product page.

6.2 Design recommendations for blending classic and modern web design

The following web design recommendations are derived from a thematic analysis of user testing data from both modern and classic website implementations, as previously defined, as well as supporting research conducted throughout the project. Each recommendation is thereby supported by user feedback, grounded in empirical findings, and informed by relevant literature in user experience design.

These recommendations aim to guide the development of hybrid style websites that balance the familiarity of established patterns with the engagement of modern, innovative elements. Rather than prescribing fixed solutions, they highlight key considerations for designing interfaces that users find both intuitive and meaningful.

By providing actionable insights, the recommendations are intended to support both web developers and companies in making informed design decisions. This benefits not only the end users by improving usability and satisfaction, but also the businesses by strengthening engagement, building trust, and increasing long-term user retention.

6.2.1 Aim for visually calm interfaces with engaging elements

Rationale: Striking visuals and dynamic elements can enhance engagement, but overuse can lead to cognitive overload. During testing, users described the modern website as visually appealing and exciting, yet sometimes overwhelming. In contrast, the classic version was easier to navigate but perceived as dull.

Figure 29: Modern website's Astrolight section on the home page, showing an interactive grid of Astrolight elements.

Application: Balance visual excitement with clarity by using clean layouts, purposeful whitespace, and subtle animations that guide attention rather than distract. A common pitfall is the overuse of dynamic elements and thereby breaking Miller's law. The Astrolight section on the modern homepage, seen in Figure 29, use excessive motion and lacks whitespace, which draw focus away from the content.

Animations should serve a functional purpose, such as highlighting transitions, reinforcing structural and visual hierarchy, or aiding user orientation, rather than being used solely for decorative effects. A strong example is the 3D room showcase section on the hybrid website, as previously shown in Figure 22, which effectively communicates product use while enhancing the site's memorability and visual aesthetic.

Recommendation: Aim for interfaces that feel calm and organized, while still incorporating interactive or expressive elements to maintain interest and support brand identity.

6.2.2 Design navigation that orients, not confuses

Rationale: Clear and consistent navigation is essential for a positive user experience, improving user control and alignment with Jacob's law. Even among digitally literate young adults, user

testing revealed a strong preference for straightforward navigation. The classic website's simple structure was consistently praised, while experimental and minimalistic navigation in the modern version led to frustration.

Application: Use familiar navigation patterns, such as a top navigation bar and footer, to support user expectations. Labels should be intuitive, and interaction with the navigation elements should provide immediate feedback. Efficiency is especially important for users with a clear task or goal. For instance, the website Igloo presents visitors with a minimalist snow landscape and a centered igloo, as shown in Figure 30. While the design is immersive and visually striking, it omits standard navigation elements such as a header or clear menu structure. The only navigational cue is a small instruction to scroll, placed in the bottom left corner, which may hinder usability by limiting content overview and increasing the effort required to explore the site.

Figure 30: Example of a website with experimental navigation. https://www.igloo.inc/ (2025)

By contrast, the hybrid website developed in this project includes a conventional header, shown in Figure 21, which provides a familiar entry point for users. The header features high-contrast text for improved readability and includes a subtle dot indicator beneath the active page label, offering a clear sense of orientation without disturbing the visual design.

Recommendation: Keep navigation predictable and uncluttered. Innovation in layout is welcome, but not at the cost of usability.

6.2.3 Let users choose the pace

Rationale: Storytelling and gradual content reveal can create a rich, engaging experience, but only when users feel in control. In testing, users appreciated the narrative flow of the modern website, yet some felt constrained by its linear structure and excessive scrolling. This led to a reduced sense of autonomy and poor user control.

Application: Use storytelling and interactive elements to foster emotional engagement, but always offer users with clear options to skip, navigate freely, or access key information directly. Avoid forcing users through a fixed sequence without escape options or alternative paths. For example, on the modern website, users were required to scroll through a long, maze-like homepage. Although a back-to-top pattern was implemented using an arrow icon, as seen in Figure 31, it was often overlooked, resulting in frustration and a sense of being stuck.

An alternative approach was implemented on the hybrid website, which included a hamburger menu that appeared when scrolling down the page, as shown in Figure 32. This gave users a stronger sense of control and helped prevent the frustration associated with being unable to exit or redirect their navigation.

Recommendation: Empower users to explore content at their own pace. Design flows that are immersive yet flexible, ensuring they engage users without restricting their freedom.

Figure 31: Modern website, example of a vague back-to-top button on the website's homepage.

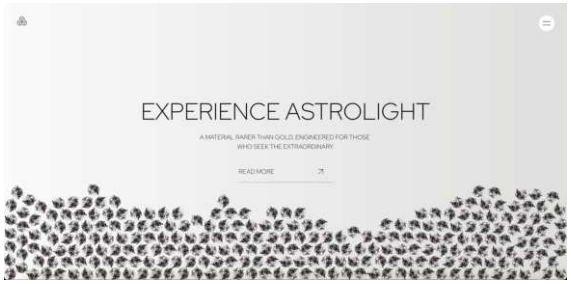

Figure 32: Hybrid website, example of a hamburger menu design that appears when scrolling down the page.

6.2.4 Structure content to reduce cognitive load

Rationale: Poor text structure and lack of visual cues make it difficult for users to scan, understand, or interact with content. During testing, users found the modern site visually rich but struggled to locate information and identify clickable elements. In contrast, the classic design's clear text hierarchy and emphasis on headings helped users process content more efficiently.

Application: Use strong text structure to guide the user. Headings, paragraph breaks, readable font sizes, usage of gestalt principles and consistent styling help reduce cognitive effort, which aligns with visual hierarchy, and Miller's law. Clearly differentiate interactive elements, such as buttons or links, from surrounding content, to ensure compliance with Jacob's law.

For example, the cube size section on the modern website, shown in Figure 33, lacks clear visual cues indicating interactivity. The absence of a heading leaves the size options appearing more like a title than selectable elements, with only a subtle and easily missed indicator marking the selected option. The layout lacks visual hierarchy, with buttons positioned in the top left, descriptive text in the top right, and the CTA in the bottom right, resulting in unclear navigation and increased cognitive effort. Figure 34 presents the corresponding section on the hybrid website, featuring a clearer structure with a heading, intuitive buttons, a product description, and a CTA placed at the bottom. This layout guides the user more effectively by supporting a logical and visually coherent flow.

Figure 33: Modern website's cube size section as example of confusing content structure.

Figure 34: Hybrid website's cube size section as example of intuitive content structure.

Recommendation: Prioritize clarity in text presentation. Creative layouts are welcome, but they should never come at the cost of readability or usability.

6.2.5 Use familiar patterns to build trust

Rationale: Familiar design conventions support user confidence and a sense of control. During testing, users expressed greater trust and comfort when interacting with elements that aligned with expected patterns, reflecting the conceptual model principle. This was particularly evident in tasks perceived as important or sensitive, such as navigation and checkout.

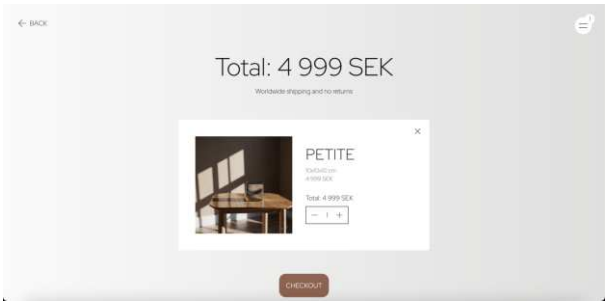

Figure 35: Hybrid website, example of a shopping cart pattern.

Application: Well-established patterns and principles should be applied to critical interactions to reduce friction and ease the learning curve, in line with Jakob's law. As illustrated in Figure 35, users expect familiar layout conventions in web shops, such as clear access to cart contents, options to add or remove items, return to the previous page, or proceed to checkout. Creativity and experimentation are better suited to less critical areas, where users are more open to exploration and novelty.

Recommendation: Support user trust by aligning core functions with recognizable patterns. Let creativity shine where mistakes are low-stakes, but avoid surprises in high-stakes interactions.

6.2.6 Clarify purpose from the start

Rationale: Users form impressions within seconds, and if a website's purpose is not immediately apparent, they are unlikely to stay. Testing showed that the modern site's lack of initial clarity made it difficult for users to understand what the company offered, increasing the risk of confusion or disinterest. To prevent this, websites should not rely on users to figure out its purpose. Instead, the intended message should be conveyed clearly and effortlessly, as seen in Figure 21 in Section 6.1.

Application: Clearly communicate the website's purpose early in the user journey through a combination of clear messaging, storytelling, and visual hierarchy. While a prominent CTA can be effective, clarity does not require overly assertive techniques. Elements such as icons, imagery, layout, and intuitive navigation contribute to a first impression that helps users feel oriented and engaged, rather than confused or overwhelmed.

Recommendation: Do not make users guess. Communicate the value and intent of the site within the first few moments, using both visual and textual cues. A user who does not immediately understand what your site offers is a user who is unlikely to stay.

6.2.7 Account for SEO in visual design

Rationale: Visually rich websites can unintentionally reduce their visibility in search engines. Testing and analysis indicated that elements such as disrupted text structures from masked text animations, or large unoptimized media interfered with how SEO algorithms interpret the site. On the modern website, these issues decreased keyword visibility and increased load times, potentially leading to lower search rankings.

Application: Implement design elements with consideration for SEO. This includes maintaining semantic HTML structures, using accessible and crawlable text formats, and optimizing images

and media files. Regular performance testing and the use of SEO tools can help identify SEO issues resulting from design decision.

Recommendation: Be mindful of how animations and media affect both performance and discoverability. A visually impressive site is valuable, but only if people can find it.

6.2.8 Follow established accessibility guidelines

Rationale: An accessible website is user-friendly and demonstrates consideration of diverse user needs. It is a vital part of web development and should be prioritized throughout the entire process.

Application: Apply this recommendation by incorporating accessibility considerations at all stages of design and development. Pay attention to navigation, color choices, typography, language, image use, and content structure to support an inclusive user experience.

Recommendation: To ensure that websites are usable and understandable for a wide range of users, follow established accessibility guidelines, such as the WCAG [68]

7 Discussion

This section critically reflects on the study's methodology, design decisions, results and implications. It addresses the strengths and limitations of the test and analysis approach. It explores the impact of design choices on outcomes, briefly considers the role of SEO in modern web practices, and also discusses how the resulting design recommendations may be applied in practice. Furthermore, it evaluates the ethical and methodological boundaries of the study and outlines areas for future research and development.

7.1 Test and analysis approach

The test users provided valuable feedback based on their experiences navigating the websites. The combination of think-aloud protocols and post-test interviews with open-ended questions enabled the collection of spontaneous user reactions, followed by more reflective insights after completing their interaction with the sites.

Despite the overall success of the testing process, several limitations emerged due to constraints in time, resources, and access to users. All test users had prior computer literacy, which aligned with the project's focus on young adults, a group generally familiar with web usage. However, as most test users were students from Chalmers University of Technology, the sample may not have fully represented the intended target audience. This likely limited feedback from individuals with lower levels of digital proficiency. Nevertheless, the number of test users was considered sufficient to identify key usability patterns and recurring opinions. Since multiple users independently highlighted similar strengths and weaknesses, it is unlikely that additional users would have revealed substantially different insights.

The emphasis on qualitative methods made it possible to collect rich, detailed data that effectively captured user perceptions and behavior. However, relying solely on qualitative data also introduced certain limitations. For example, the phrasing of interview questions may have influenced user responses, and users might have attempted to align their feedback with what they assumed were the project's goals or expectations. In addition, aesthetically pleasing designs may have caused users to perceive an interface as more functional and user-friendly, reflecting the aesthetic-usability effect. This may have introduced bias in favor of the modern website due to its polished design and dynamic animations.

With more time, it would have been possible to recruit a broader and more diverse group of test users and to collect sufficient data for a robust quantitative analysis. This could have included metrics such as error rates, mouse movements, task completion times, and eye tracking to measure user attention and focus. These methods might have revealed deeper insights into user behavior and subconscious interaction patterns. However, such analysis was not feasible within the scope and timeframe of this project.

Another aspect worth discussing is the digital expert survey. Only two of the ten invited experts responded, limiting the diversity of perspectives and excluding potentially valuable insights. In hindsight, allocating more time to collect expert feedback might have improved the outcome, but doing so would have reduced the time available for other critical tasks. This highlights a necessary trade-off in the project timeline. Despite the limited number of responses, the feedback received was detailed and supported several of the initial assumptions regarding the design recommendations.

Overall, the chosen testing methods proved effective. They yielded valuable insights from the evaluations of the modern and classic websites, the assessment of the hybrid version, and expert input on the web design recommendations. While a more extensive quantitative analysis could have offered additional perspectives, the qualitative data collected was sufficient to support the project's objectives and conclusions.

7.2 Design approaches

As previously described in Section 3.2.2, the design process began with throwaway prototyping, followed by evolutionary prototyping. This approach enabled multiple iterations, helping to avoid becoming fixated on a single design idea too early and encouraging the exploration of alternative options. Iterative development contributed to refining concepts and improving the overall quality of the designs.

However, it is important to acknowledge that additional iterations potentially could have further enhanced the prototypes. More iterations might have ensured that the designs not only better captured the intended stylistic goals, but also achieved a level of quality that minimized the risk of introducing bias into the user testing results, due to flaws in the design execution.

While the prototyping process differed slightly between the two styles, the time and effort allocated to each prototype were kept equal. Any perceived differences in the extent of iteration between the two styles were therefore a result of natural variations in the design development process, rather than discrepancies in the allocation of resources.

Lastly, it is important to acknowledge that the final hybrid website was based on the modern website, with elements from the classic web design integrated to enhance usability. This approach was chosen to reflect the growing emphasis on modern design in contemporary web development. Rather than creating an entirely new aesthetic, the aim was to demonstrate how a modern UI can be complemented with user-centered principles to strengthen usability, showing that a contemporary appearance and strong UX can coexist.

7.2.1 The SEO perspective

As mentioned in Section 1.2, only a limited aspect of SEO was considered. However, it was included to an extent because it remains commercially relevant.

The results in Section 5.2.4 showed that modern design traits can affect crawlability and indexability, but in ways that are not immediately apparent. Raising awareness of these subtle pitfalls is therefore essential for both developers and businesses looking to incorporate modern design traits into their website.

As noted in Section 5.2.4, the modern website used the same text-splitting technique as Olivier Larose from Locomotive [64]. Given Locomotive's strong industry presence, with 127 works, 87 awards, and 121 honorable mentions on Awwwards [65], it raises the question of why a developer from such a reputable agency does not implement SEO friendly solutions for modern design. It is unlikely they are unaware of the issue, and dismissing SEO seems improbable in a competitive market. Perhaps it is an intentional tradeoff, or, while speculative, even a strategic choice to obscure SEO pitfalls from competitors. Regardless, this underscores the need for critical thinking, even acclaimed professionals may overlook or intentionally avoid certain optimizations.

It is important to note that being critical of SEO in modern design, which is what is highlighted in this project, does not equate to full SEO optimization as many factors lie outside the project's scope. Additionally, SEO is only relevant when organic search traffic matters. In cases such as social media driven sales funnels, SEO may be unnecessary and not worth the effort.

7.3 Discussion of results

The results of this project indicate that the development of a hybrid website was a successful approach, combining both modern and classic design elements. User feedback consistently high-

lighted positive aspects of the final design, particularly in terms of structure, clarity, and overall UX. While individual preferences varied, the hybrid version generally performed well across test sessions, suggesting that the balance of design elements was effective for the target audience.

A key outcome of the project is the web design recommendations, developed through iterative testing and thematic analysis. These design recommendations are rooted in user feedback and presented in a straightforward format, making them broadly understandable and suitable for collaborative environments.

It is important to note that the results of this project are not surprising. A number of the findings support well-known design principles, especially those from more classic design styles, such as clear layout, predictable structure and easy navigation. This could suggest a small bias toward familiar solutions, however this is also expected since these conventions are well established and have stood the test of time. Although the results might not seem groundbreaking, it also makes the findings more reliable and practical. Instead of trying to reinvent web design, the project helps confirm and explain why established methods still matter, especially when combined in a hybrid design.

From the project group's perspective, the results aligned well with initial expectations, particularly the positive reception of familiar and straightforward design elements. It was also encouraging to see that the hybrid approach, which was anticipated to be effective, was supported by the testing outcomes. This confirmed the belief that a thoughtful combination of styles could better support both usability and aesthetic goals. Moreover, user feedback affirmed the relevance and applicability of the proposed design recommendations. Ultimately, the project group considers the results successful and aligned with the intended objectives.

Overall, the project fulfilled its aim of providing practical insights into how different web design styles are perceived by users. The resulting design recommendations offer a strong basis for future design decisions and may serve as a useful resource for projects with the goal of balancing visual identity with usability.

7.4 Applicability and limitations of the web design recommendations

Several factors must be considered when deploying the design recommendations in real-world contexts. Firstly, the project focused on designing a website intended for selling a physical product. User behavior, expectations, and design priorities for product-focused websites may differ from those of service oriented websites or informational platforms. As a result, while the findings are highly relevant to e-commerce and product marketing contexts, their direct applicability to service-based or content-driven websites may be more limited.

Secondly, the design recommendations were intentionally not heavily technical, aiming to be accessible to a broader audience beyond developers, such as, project managers, interdisciplinary teams, and various company representatives. Expert feedback confirmed this broader applicability. However, the degree to which different groups interpret and implement the recommendations may vary depending on their background and expertise.

Finally, all user testing was conducted with Swedish users. Cultural differences, such as variations in aesthetic preferences, interaction expectations, or trust markers, may influence how the designs are perceived in other cultural contexts. Therefore, caution should be taken when generalizing the results to a broader international audience.

In summary, while the project provides valuable insights into balancing modern aesthetics with usability, its findings are most directly applicable to product-focused websites within culturally similar contexts. The results may require further adaptation for broader application across different domains, user groups, and accessibility requirements.

7.5 Ethical considerations

During the test phases, users were fully informed about the type of data being collected. No recordings were made, instead, written notes were taken to capture their feedback. The users were also notified that their quotes might be used in the report, with confidentiality maintained by omitting their names.

The test users were primarily university students, and particularly from IT-related fields. This narrow demographic limits the ability to generalize our findings, as the design may be unintentionally biased toward users with strong technical backgrounds. Older adults or individuals were out of scope, which impact the accessibility and usability of the final product.

Additionally, most users had prior experience giving feedback through similar academic courses, which may have influenced their responses. Their familiarity with usability testing could have shaped the way they interacted with the prototype. It is likely that involving a different user group would have provided alternative perspectives and more diverse insights.

Accessibility was not part of our scope and was therefore not considered during the project. Had accessibility been prioritized from the outset, the design solutions would likely have differed to better accommodate a wider range of users.

7.6 Future work

While the scope of this project was intentionally limited to ensure a focused and manageable study, several areas have been identified where future work could extend and deepen the research. The project concentrated on front-end design for a desktop-based website targeting a specific demographic. This approach yielded valuable insights but also left room for further exploration.

A key direction for future research would be to conduct large-scale quantitative studies to evaluate the effectiveness of the proposed design recommendations. Such studies could provide empirical validation, reduce the influence of subjective interpretation, and improve the generalizability of the findings across various websites and user groups. Related to this, increasing expert participation in the evaluation process could further strengthen the credibility of the design recommendations. Improved response rates would offer a broader foundation for validating the proposed guidelines and capturing a wider range of perspectives.

Another important area is cross-device compatibility. Since this project focused solely on desktop interfaces, future research could examine how the design recommendations translate to mobile environments, where user behavior, screen size, and interaction constraints differ significantly. Expanding the scope in this way would support the development of more adaptive and context-aware design solutions.

Additionally, future work could benefit from a broader and more inclusive approach to accessibility. Although this project considered general usability guidelines, it did not specifically address the needs of users with disabilities. A more in-depth investigation into accessibility could lead to more inclusive and comprehensive design recommendations.

Lastly, SEO was examined solely from a narrow, technically focused perspective. Future work could involve a more comprehensive analysis, that includes both technical SEO and content-focused strategies, combining technical SEO with content-driven strategies to improve visibility and relevance in search engine rankings.

8 Conclusion

This project set out to examine how classic and modern web design styles influence UX, and whether a hybrid approach can effectively combine the strengths of both. By first designing, developing, and testing two distinct websites, one classic and one modern, the project examined the relationship between usability, visual engagement, and design conventions. These insights informed the subsequent development of web design recommendations and a hybrid website.

The result show that classic design is intended to support clarity, efficiency, and familiarity, while modern design aims to enhance visual appeal and emotional engagement. However, excessive visual complexity can reduce usability, particularly when core UX principles, such as conceptual models, user control and feedback, are overlooked. The hybrid website demonstrated that a balanced approach is achievable, blending engaging visual elements with intuitive interaction.

Thematic analysis of user testing emphasized the importance of clear navigation, simplicity, and purpose driven design. Users appreciated innovation when it served a functional purpose but favored familiar structures when completing tasks. These insights shaped the final design recommendations, aimed at helping developers create UI's that are both user-friendly and memorable.

The implications of this project are relevant for developers, designers, and businesses aiming to balance modern aesthetics and usability. As web development evolves, future research could explore how these design recommendations perform across broader demographics and device types. Further research may also examine how accessibility integration impact hybrid design strategies.

Ultimately, this project highlights that good web design is not about choosing between classic or modern, but about understanding user needs and design intent to create experiences that balance clarity, emotion, and purpose.

8.1 Summary of web design recommendations

The design recommendations are based on user testing and supporting research, offering actionable insights for designing hybrid websites that balance familiar patterns with modern elements. While not a universal solution, they encourage designers to consider their specific goals and context.

- *Visually calm interfaces with engaging elements:* Balance minimal structure with engaging visuals.
- *Navigation that orients , not confuses:* Design with clear and intuitive navigation.
- *Let the users choose the pace:* Use interactive elements to support, not dominate.
- *Structure that reduces cognitive load:* Keep information well structured and comprehensible.
- *Familiar patterns build trust:* Use standard UI conventions where it matters.
- *Clarity of purpose from the start:* Communicate website purpose early.
- *Consider SEO implications in visual design:* Ensure visual choices do not compromise the SEO.
- *Follow established accessibility guidelines:* Consider already established accessibility guidelines throughout the whole web development process.

A Website screenshots

Appendix **A** presents a series of screenshots from the websites developed over the course of this project. The images are arranged in a continuous, sequential format to ensure clarity and coherence. The sequence begins with the classic website, transitions to the modern website, and concludes with the hybrid.

A.1 Classic website

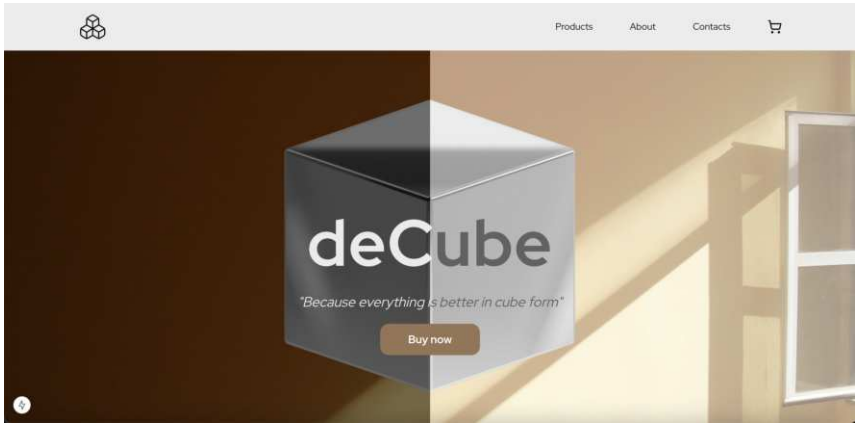

Figure 36: The hero section of the Classic website's homepage. This is what the user sees when first entering the website.

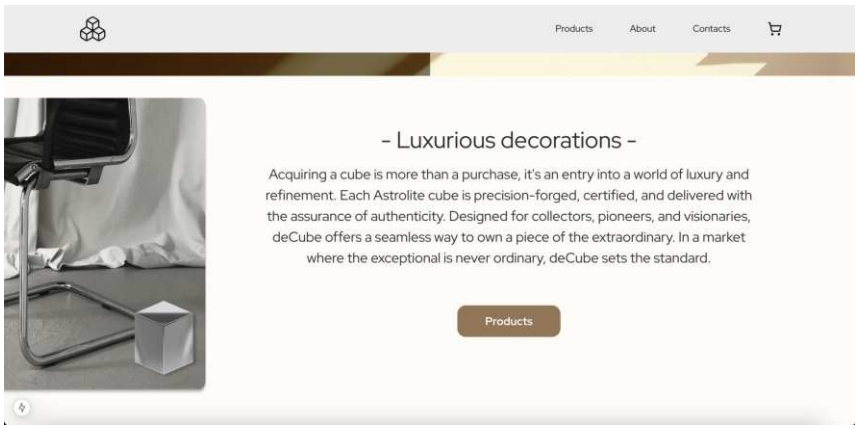

Figure 37: The Classic website's homepage when scrolled below the hero section seen in Figure 36.

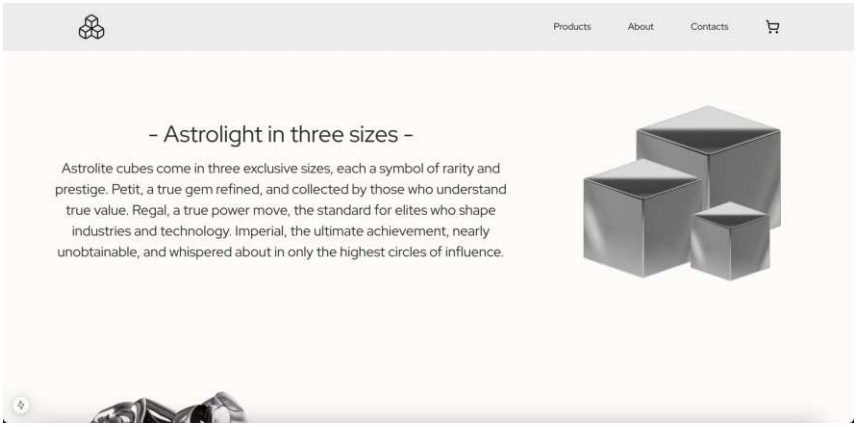

Figure 38: The Classic website's homepage when scrolled below the section seen in Figure 37.

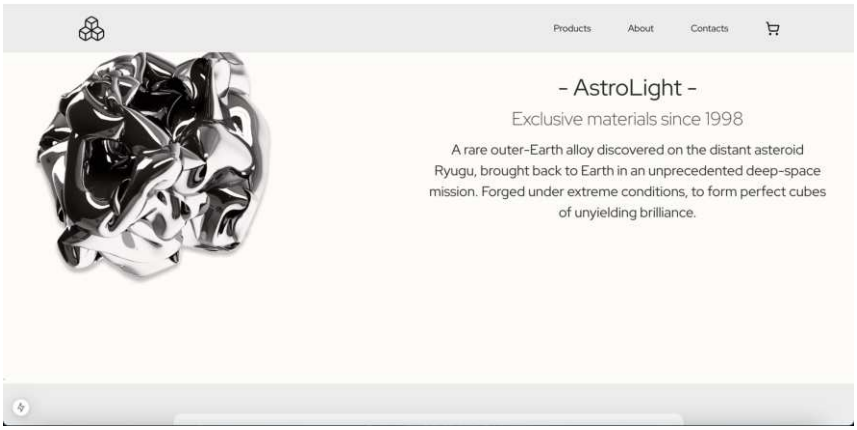

Figure 39: The Classic website's homepage when scrolled below the section seen in Figure 38.

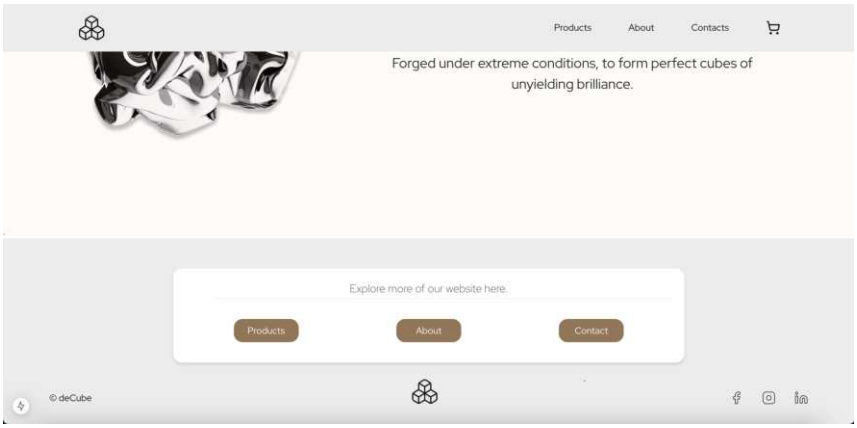

Figure 40: The Classic website's homepage footer, marking the end of the page.

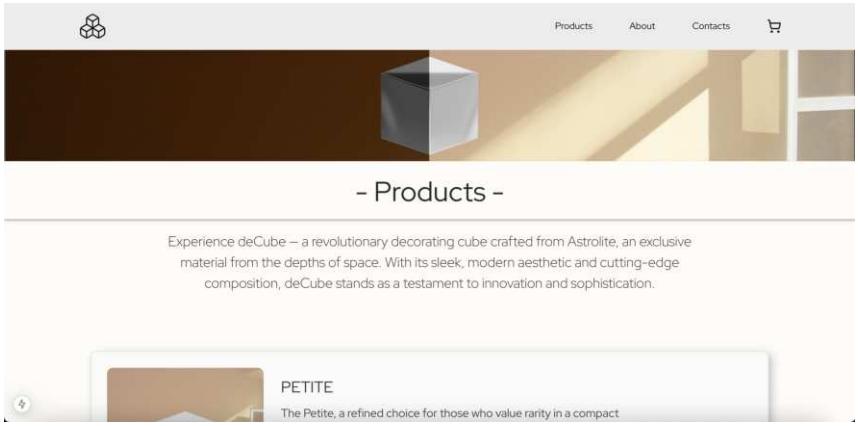

Figure 41: The top of the Classic website's product page.

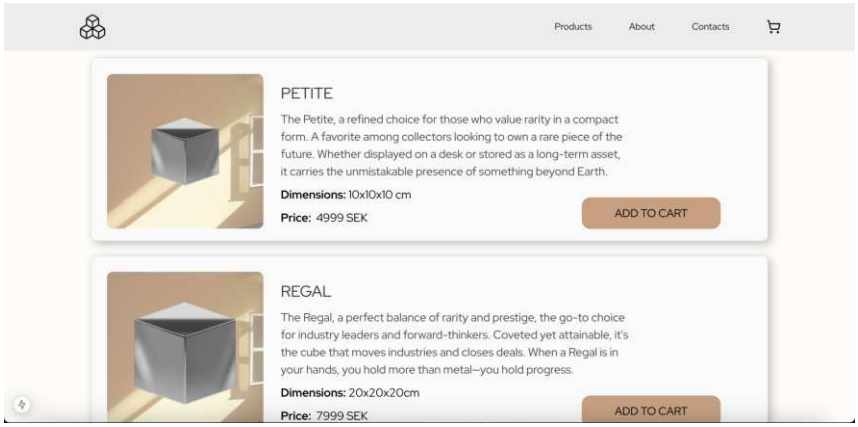

Figure 42: The Classic website's product page when scrolled below what is seen in Figure 41.

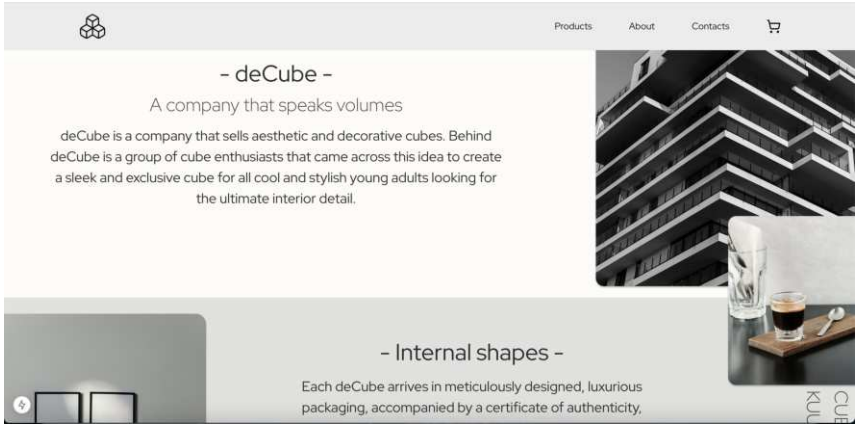

Figure 43: The Classic website's about page.

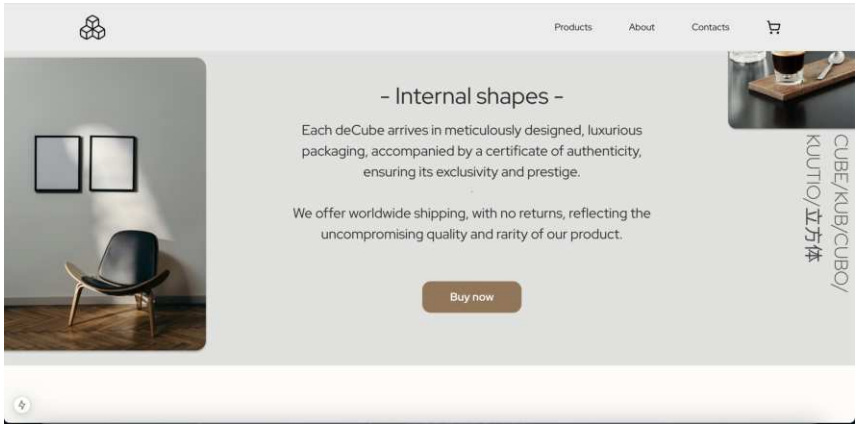

Figure 44: The Classic website's about page when scrolled below what is seen in Figure 43.

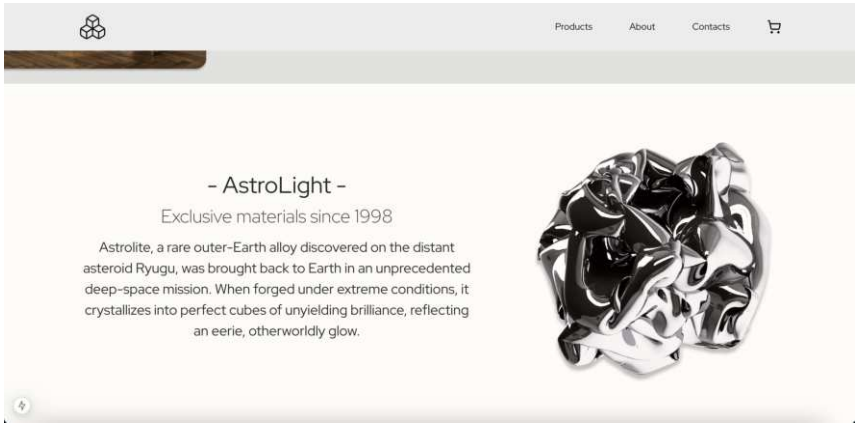

Figure 45: The Classic website's about page when scrolled below what is seen in Figure 44.

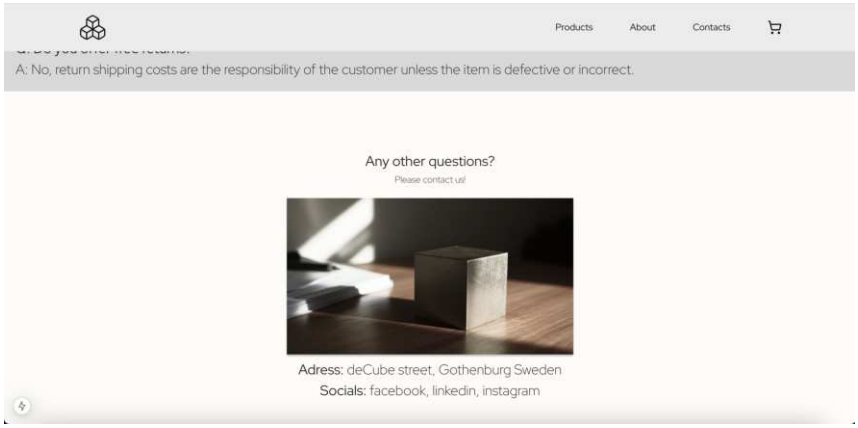

Figure 46: The Classic website's contact page.

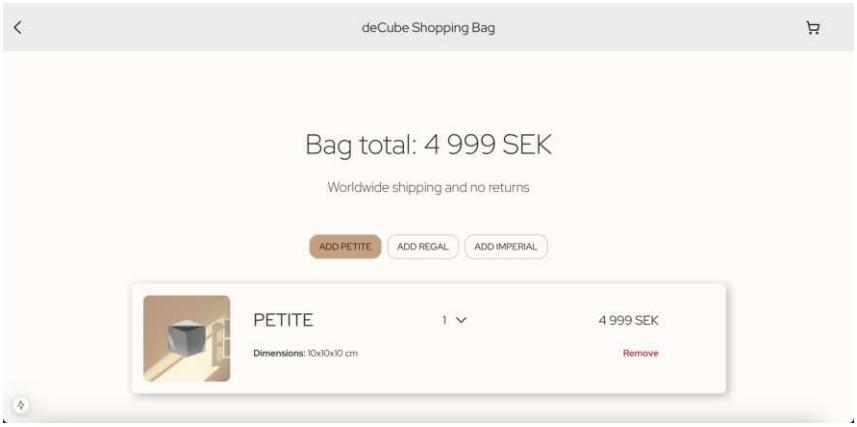

Figure 47: The top Classic website's checkout page.

A.2 Modern website

Figure 48: The Modern website's homepage when scrolled below what is seen in Figure 11.

Figure 49: The Modern website's homepage when scrolled below what is seen in Figure 48.

Figure 50: The Modern website's homepage when scrolled below what is seen in Figure 49.

Figure 51: The Modern website's homepage when scrolled below what is seen in Figure 50.

Figure 52: The Modern website's homepage when scrolled below what is seen in Figure 51.

Figure 53: The Modern website's homepage when scrolled below what is seen in Figure 52.

Figure 54: The Modern website's full screen menu.

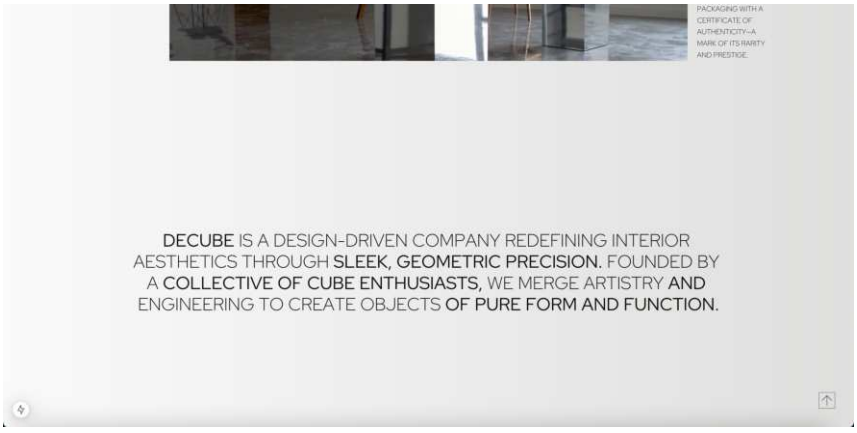

Figure 55: The Modern website's about page when scrolled below what is seen in Figure 12.

Figure 56: The Modern website's about page when scrolled below what is seen in Figure 55.

Figure 57: The Modern website's about page when scrolled below what is seen in Figure 56.

Figure 58: The Modern website's about page when scrolled below what is seen in Figure 57.

Figure 59: The top of Modern website's product page.

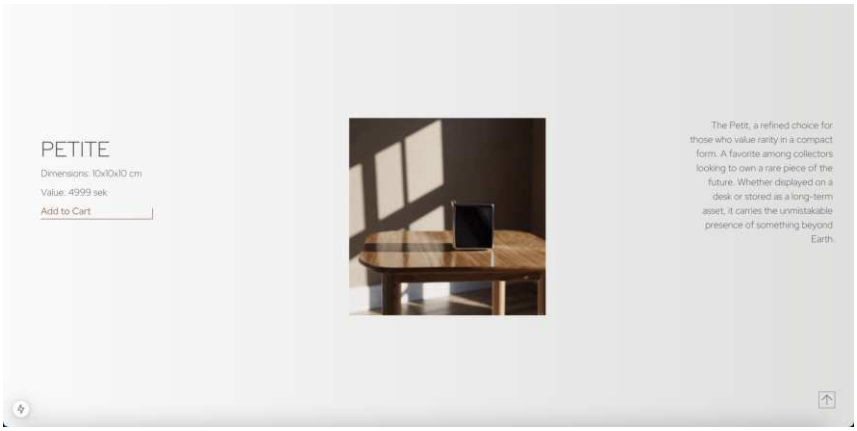

Figure 60: The Modern website's product page when scrolled below what is seen in Figure 59.

Figure 61: The top of the Modern website's Astrolight page.

Figure 62: The Modern website's Astrolight page when scrolled below what is seen in Figure 61.

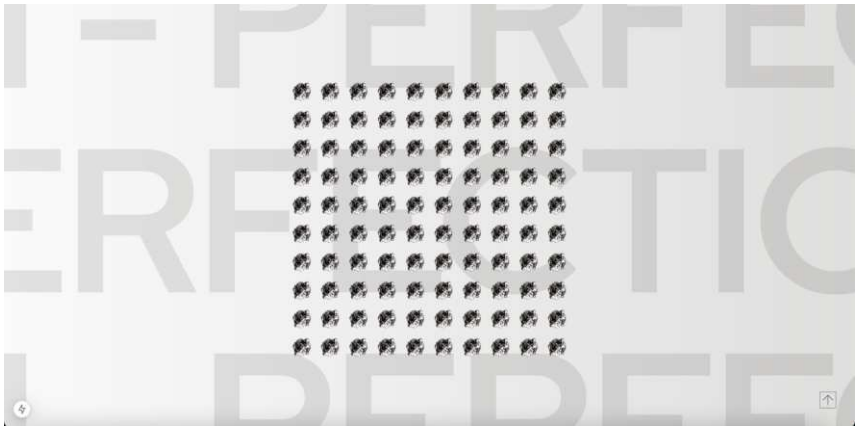

Figure 63: The Modern website's Astrolight page when scrolled below what is seen in Figure 62.

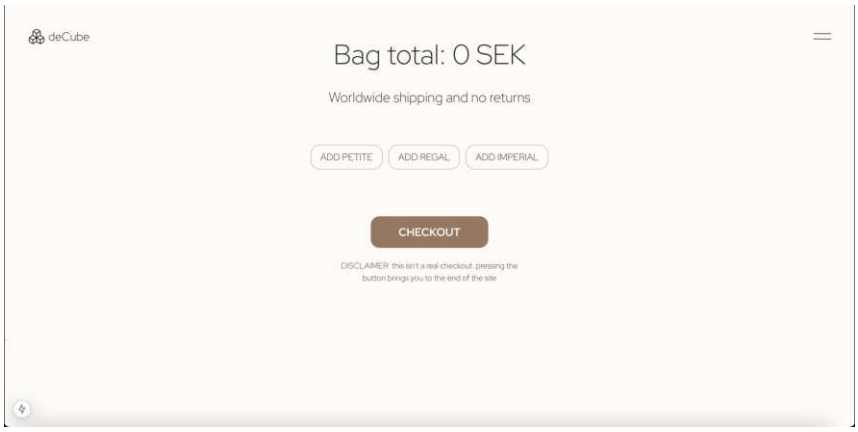

Figure 64: The Modern website's checkout page before checkout.

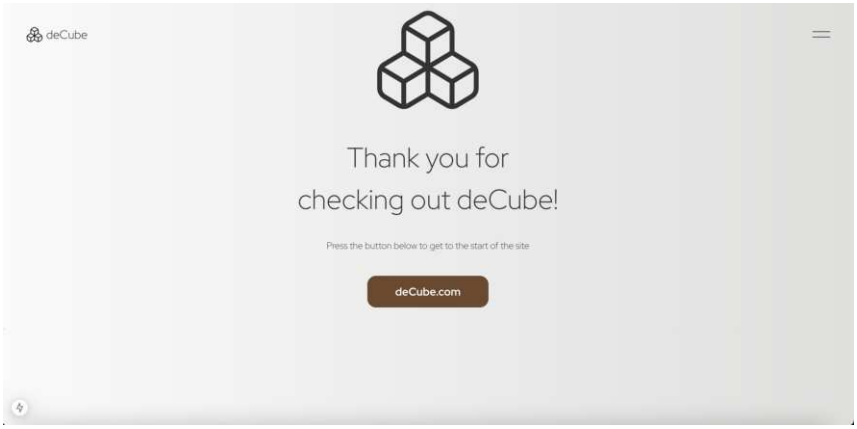

Figure 65: The Modern website's checkout page after checkout.

A.3 Hybrid website

Figure 66: The hero section of the Hybrid website's about page. This is what the user sees when first entering the website.

Figure 67: The Hybrid website's about page when scrolled below what is seen in Figure 66.

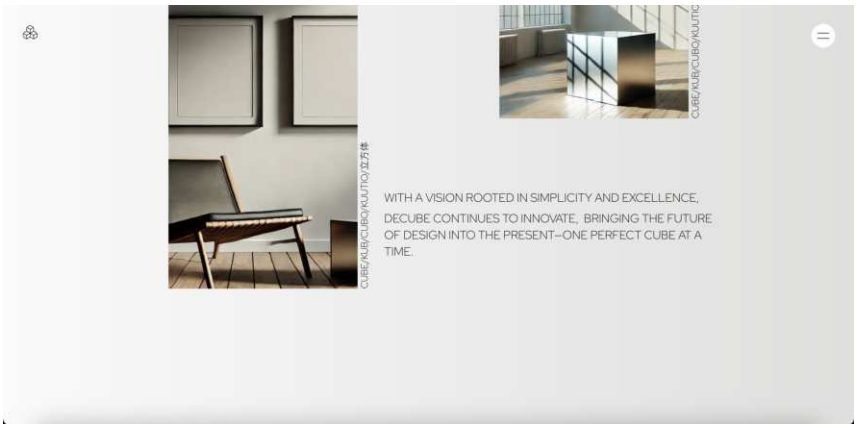

Figure 68: The Hybrid website's about page when scrolled below what is seen in Figure 25.

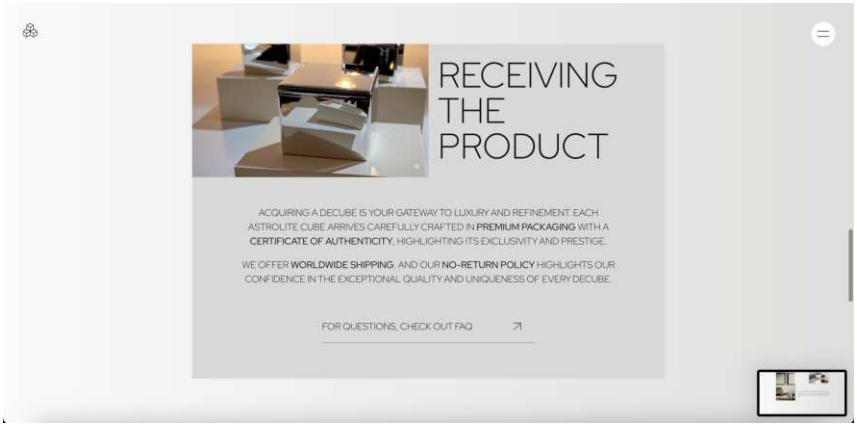

Figure 69: The Hybrid website's about page when scrolled below what is seen in Figure 68.

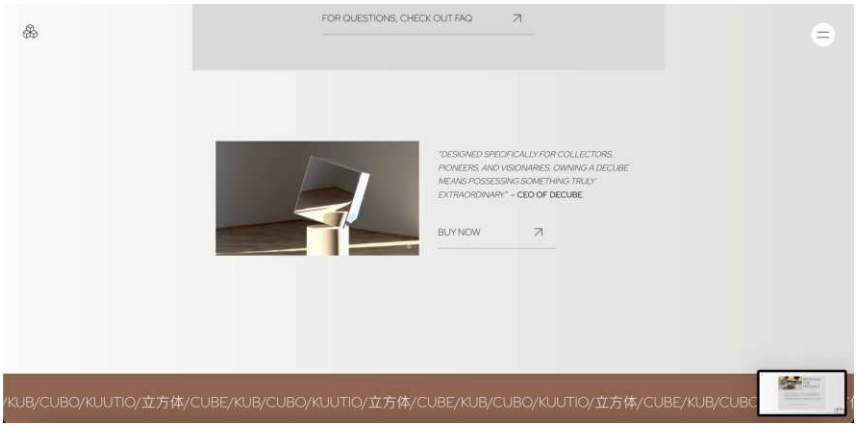

Figure 70: The Hybrid website's about page when scrolled below what is seen in Figure 69.

Figure 71: The hero section of the Hybrid website's Astrolight page. This is what the user sees when first entering the website.

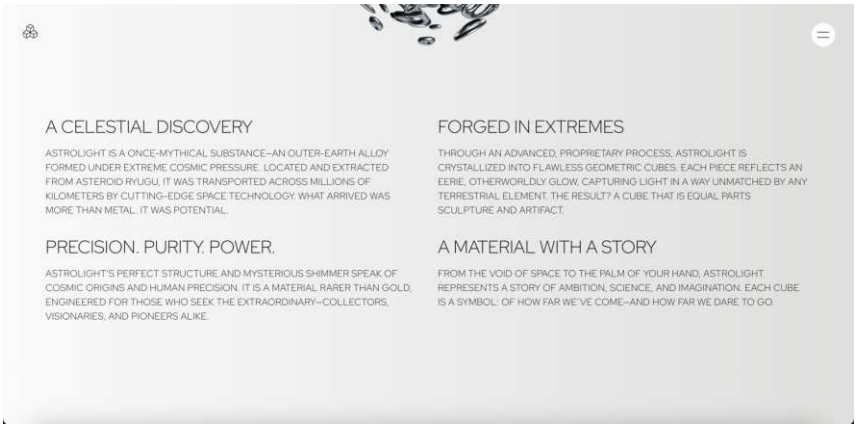

Figure 72: The Hybrid website's Astrolight page when scrolled below what is seen in Figure 71.

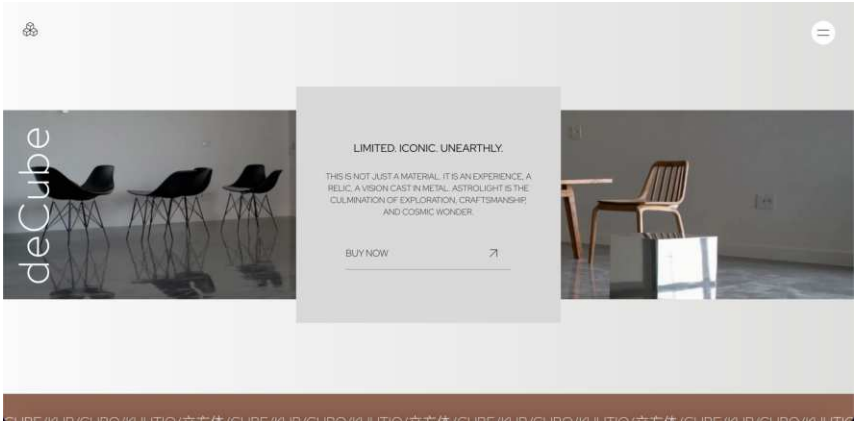

Figure 73: The Hybrid website's Astrolight page when scrolled below what is seen in Figure 26.

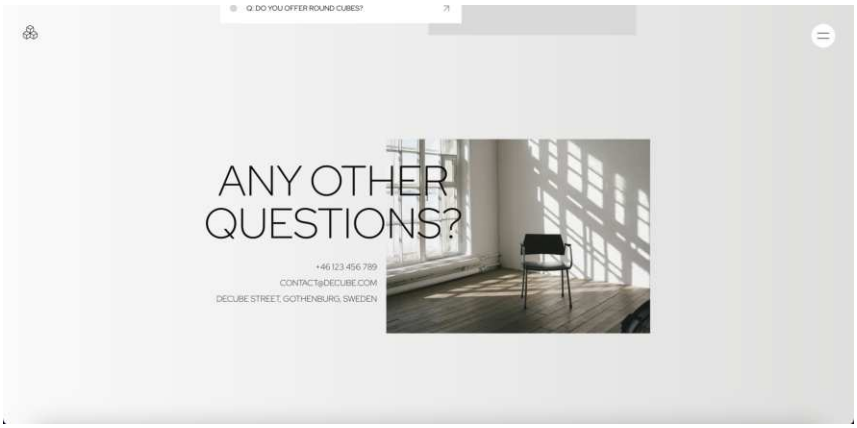

Figure 74: The Hybrid website's FAQ page when scrolled below what is seen in Figure 27.

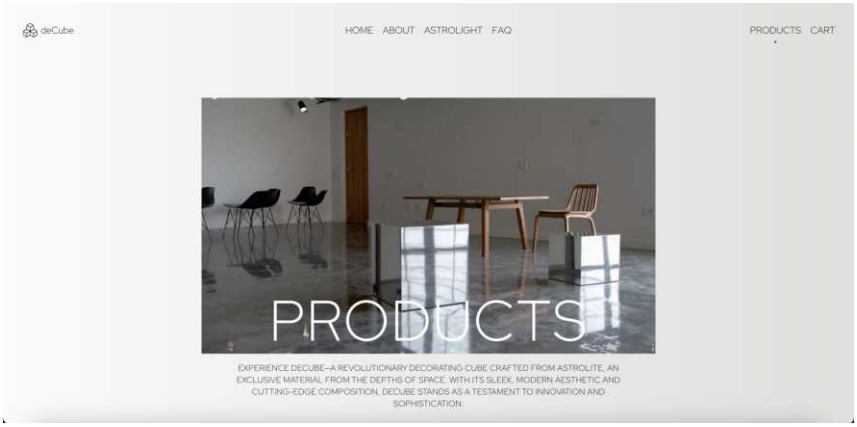

Figure 75: The hero section of the Hybrid website's products page. This is what the user sees when first entering the website.

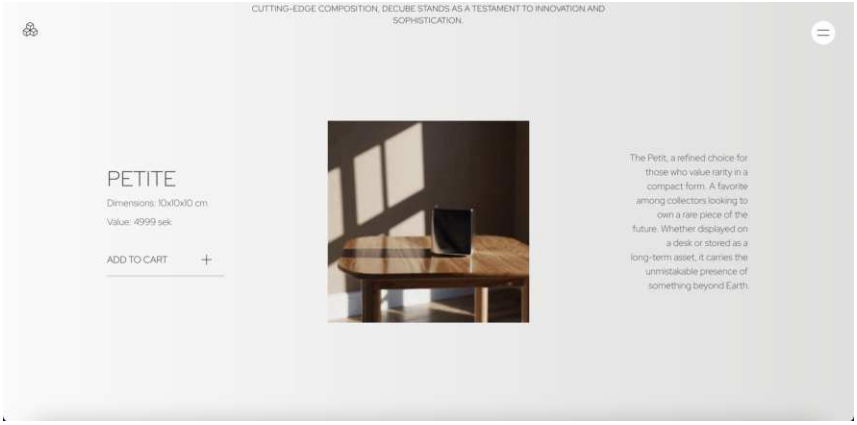

Figure 76: A product card in the Hybrid website's products page. This is below the hero section seen in Figure 76. There are two more almost identical product cards below what is shown in this image.

Figure 77: The Hybrid website's side menu.

B Iterations of design recommendations

Appendix **B** presents two iterations of the design recommendations that were developed throughout the project and lead to the final version in the result section.

B.1 First iteration

These guidelines are drawn from user testing of both modern and classic website versions, supported by research conducted during the project. Each recommendation reflects user feedback and UX design principles.

They aim to guide the development of hybrid interfaces that balance familiar patterns with modern, engaging features. Rather than offering fixed rules, they highlight key considerations for creating intuitive and meaningful user experiences.

The insights are intended to help developers and businesses make informed design decisions that enhance usability, build trust, and support long-term user engagement.

1. **Calm Visual Design with Eye-Catching Touches**
   Consider how visual elements can enhance rather than distract from the user experience. Clean layouts, purposeful use of whitespace, and subtle animations help maintain clarity while keeping users engaged. Use animations to support focus and orientation, not to create cognitive overload.

2. **Clear Navigation**
   Clear and consistent navigation, familiar placement of key elements, and responsive feedback guide users effectively. A top navigation bar and a footer were favored in user testing. Efficient navigation is especially important for users with specific goals in mind.

3. **Scrolling and Exploring**
   Allow users to feel in control of their journey and to explore content at their own pace. Interactive elements and storytelling can create emotional engagement, but should be used in moderation. Overuse can hinder usability and autonomy. Done well, they support brand identity and improve user experience.

4. **Present Content Without Mental Clutter**
   User testing showed that the modern version of the site felt confusing due to experimental navigation and excessive visuals. To improve comprehension, present information clearly, using headings, legible typography, and minimal visual distractions.

5. **Patterns**
   Following familiar design conventions for core components—such as navigation, checkout, or product cards—helps users feel more confident. While critical tasks should stick to known patterns, less essential areas offer space for creative and unique expressions.

6. **Purpose**
   Clearly communicate what the site offers and who it is for. Early, strong branding and concise messaging help users connect with the site. Visual cues—like icons, color schemes, and animations—can clarify the site's purpose and guide users' next steps.

7. **SEO Aspect**
   Visual and animated elements can unintentionally affect SEO. For instance, masked text animations may disrupt text structure, and unoptimized media can slow down loading times. These factors can reduce visibility in search engines. Designers should be mindful of such risks and take steps to mitigate negative SEO impacts.

B.2 Second iteration

These design recommendations are based on a thematic analysis of user testing data from both modern and classic website versions, along with supporting research conducted throughout the project. Each guideline is grounded in user feedback, empirical findings, and established user experience design principles.

The recommendations aim to guide the creation of hybrid interfaces that blend familiar, trusted design patterns with modern and engaging features. Rather than prescribing fixed rules, they emphasize important considerations for designing interfaces that users find both intuitive and meaningful.

By offering actionable insights, these guidelines support developers and companies in making informed design choices. This benefits end users by enhancing usability and satisfaction, while also helping organizations improve engagement, build trust, and encourage long-term user retention.

1. **Aim for Visually Calm Interfaces with Engaging Elements**
   Rationale: Striking visuals and dynamic elements can enhance engagement, but overuse can lead to cognitive overload. During testing, users described the modern website as visually appealing and exciting, yet sometimes overwhelming. In contrast, the classic version was easier to navigate but perceived as dull.
   Application: Balance visual excitement with clarity. Use clean layouts, purposeful whitespace, and subtle animations to guide attention rather than distract. Animations should serve a functional purpose, such as highlighting transitions, reinforcing structural hierarchy, or enhancing user orientation, rather than being used solely for decorative effect.
   Recommendation: Aim for interfaces that feel calm and organized, while still incorporating interactive or expressive elements to maintain interest and support brand identity.

2. **Design Navigation That Orients, Not Confuses**
   Rationale: Clear and consistent navigation is essential for a positive user experience. Even among digitally literate young adults, user testing revealed a strong preference for straightforward navigation. The classic website's simple structure was consistently praised, while experimental and minimalistic navigation in the modern version led to frustration.
   Application: Use familiar navigation patterns—such as a top navigation bar and footer—to support user expectations. Ensure labels are intuitive and provide immediate feedback when users interact with navigation elements. Prioritize efficiency, particularly for users with a clear goal in mind.
   Recommendation: Keep navigation predictable and uncluttered. Innovation in layout is welcome, but not at the cost of usability.

3. **Let Users Choose the Pace**
   Rationale: Storytelling and gradual content reveal can create a rich, engaging experience, but only when users feel in control. In testing, users appreciated the narrative flow of the modern website, yet some felt constrained by its linear structure and excessive scrolling. This led to a reduced sense of autonomy.
   Application: Use storytelling and interactive elements to build emotional engagement, but always offer clear paths to skip, navigate freely, or access key information directly. Avoid forcing users through a fixed sequence without escape options.
   Recommendation: Empower users to explore content at their own pace. Design flows that are immersive yet flexible, ensuring they engage users without restricting their freedom.

4. **Structure Content to Reduce Cognitive Load**
   Rationale: Poor text structure and lack of visual cues make it difficult for users to scan, understand, or interact with content. During testing, users found the modern site visually rich but struggled to locate information and identify clickable elements. In contrast, the classic design's clear text hierarchy and emphasis on headings helped users process content more efficiently.
   Application: Use strong text structure to guide the user. Headings, paragraph breaks,

readable font sizes, and consistent styling help reduce cognitive effort. Clearly differentiate interactive elements, such as buttons or links, from surrounding content.
Recommendation: Prioritize clarity in text presentation. Creative layouts are welcome, but they should never come at the cost of readability or usability.

5. **Use Familiar Patterns to Build Trust**
   Rationale: Familiar design conventions help users feel confident and in control. During testing, users expressed greater trust and comfort when interacting with elements that followed expected patterns. Especially in tasks that felt important or sensitive, such as navigation or checkout.
   Application: Rely on well-established UI patterns for critical interactions to minimize friction and reduce the learning curve. Use creativity and experimentation in less critical areas, where users are more open to exploration and novelty.
   Recommendation: Support user trust by aligning core functions with recognizable patterns. Let creativity shine where mistakes are low-stakes, but avoid surprises in high-stakes interactions.

6. **Clarify Purpose from the Start**
   Rationale: Users form impressions within seconds, and if the purpose of the website is not immediately clear, they are unlikely to stay. Testing revealed that the modern site's lack of upfront clarity made it harder for users to understand what the company offered. This risks the user's disinterest or confusion. Therefore, it is important to avoid placing the burden on users to figure out what the site is about. They expect to understand its purpose immediately and naturally, without effort.
   Application: Make the website's purpose evident early in the user journey through a combination of clear messaging and visual storytelling. While a prominent call-to-action can be effective, clarity doesn't need to rely on loud or aggressive techniques. Icons, imagery, layout structure, and intuitive navigation all contribute to a first impression that helps users feel grounded and curious, rather than lost or overwhelmed.
   Recommendation: Don't make users guess. Communicate the value and intent of the site within the first few moments, using both visual and textual cues. A user who doesn't immediately understand what your site offers is a user who is unlikely to stay.

7. **Account for SEO in Visual Design**
   Rationale: Visually rich websites can unintentionally harm their visibility in search engines. Testing and analysis revealed that elements like disrupted text structures, caused by masked text animations, or large unoptimized media can interfere with how SEO algorithms interpret a site. For the modern website, it reduced keyword visibility, increased load times, which would result in lower search rankings.
   Application: Ensure that visually engaging elements are implemented with SEO in mind. For example, maintain semantic HTML structure, use accessible and crawlable text formats, and optimize images and media files. Test performance regularly and use tools to identify any SEO-impacting issues caused by design choices.
   Recommendation: Be mindful of how animations and media affect both performance and discoverability. A visually impressive site is valuable, but only if people can find it.

C User survey questions

Appendix **C** presents the questions distributed to the target group at the beginning of the project.

1. How important is visual simplicity in website design for you?
2. When visiting a website for the first time, how long does it typically take for you to decide if you like it or not?
3. What kind of animations, effects, or interactive elements do you find useful, and which ones feel unnecessary or distracting?
4. What are some of your favorite websites in terms of design and usability? Why do you like them?
5. Can you recall a time when a website's navigation frustrated you? What happened?
6. How important are accessibility features, such as appropriate text size and color contrast, on websites for you?
7. What do you think is the most critical feature of an easy-to-use website?
8. Have you observed any significant changes in web design in recent years? If so, what specific trends or developments have you noticed? How do you envision web design evolving over the next 5–10 years?
9. How do you feel about websites that use a lot of images and videos compared to those that are mostly text-based?
10. Have you ever felt overwhelmed when using a website? Can you describe the experience?
11. Do you prefer websites that feel dynamic and interactive, or ones that are simpler and more static? Why?

D User test, task & questions

Appendix **D** provides an overview of the tasks designed for both the classic and modern versions of the website, along with the follow-up questions used to evaluate user experience across both designs.

D.1 Tasks

- Explore the homepage.
- Find information about sizes and dimensions.
- Find the company's contact information.
- **Classic only:** Where does the product material come from?
- **Modern only:** What is unique about the material?
- Find our Instagram.
- Add products to the shopping cart.
- Proceed to check out.

D.2 Post-interview questions

1. Which website did you prefer overall, and why? Please give specific examples.
2. How did you experience the navigation on both websites? Were there any noticeable differences?
3. Which website would you be more likely to trust for making a purchase? Why?
4. How visually appealing did you find each website? Feel free to comment on layout, colors, images, or design style.
5. What was your experience like when finding and purchasing a cube?
6. What is one thing you liked about each website?
7. What is one thing you disliked about each website?
8. Do you have any additional feedback on how these websites could improve their usability?

E Expert survey questions

Appendix **E** contains the questions that were distributed to evaluate our design recommendations.

1. How clear and understandable are the guidelines?
2. How relevant are these guidelines to current web design practices?
3. Do you think these guidelines would be useful in a real design process?
4. How well do the guidelines balance modern and classic design aspects?
5. Are there any important principles or perspectives you feel are missing from these guidelines?
6. Do you have any additional comments or recommendations for improving these guidelines?
7. What is your background/role in web or UX design?

F Classic mockups

Appendix **F** presents some of the Figma mockups created for the classic website.

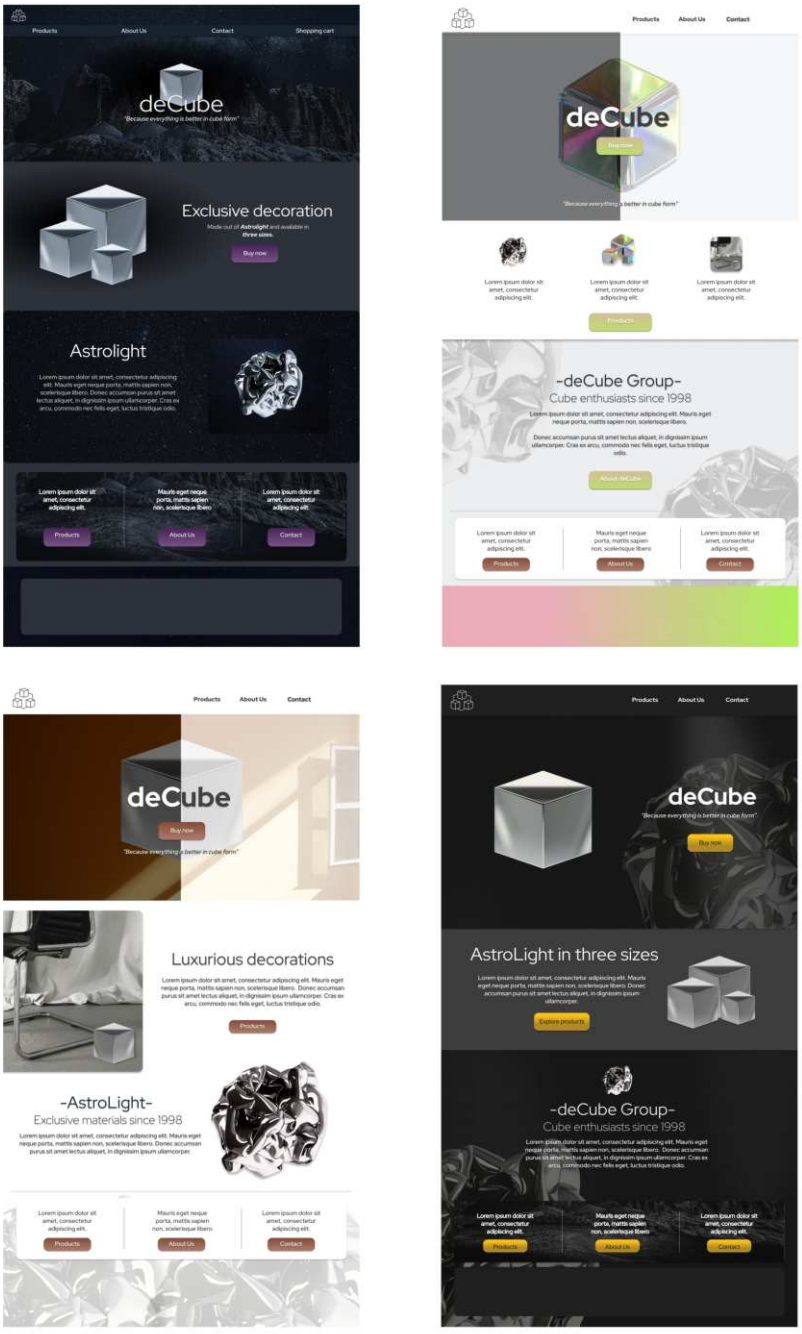

Figure 78: Various iterations of mockups for the classic website

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