

Current Situation and Importance of Design Museums during the Covid-19 Pandemic

Min Kyong Kim and Hyun-Kyung Lee*

Culture & Design Management Division, Yonsei University, Seoul, Korea

*Corresponding author. Email: hyunkyunglee@yonsei.ac.kr

Abstract

The concept of a design museum, while familiar in Europe and the United States, is relatively new to South Korea. Art exhibitions or galleries usually do not include the field of design, as art and design have different characteristics. However, design museums are necessary to accurately spread design knowledge. The goal of this paper was to find out how design museums are reacting to the global COVID-19 pandemic [1].A design museum allows people to experience socially relevant and innovative designs. In Europe and Western countries, the public has access to both physical and online design museums, and because of COVID-19, online resources have become a source of culture and emotional support[2]. This study explores diverse design museums as case studies by analyzing the characteristics of the museums both online and offline, particularly in how they have responded to COVID-19.

Keywords: Design Museum, COVID-19, Communication, Communication Platform, Emotional Support, Culture, Online Culture, Digitaldesign Museum

1. Introduction

1.1. What is a Design Museum?

Museums and exhibitions are known mostly for providing a showcase of artworks or historical artifacts. However, design museums serve a different purpose. According to 'International Art Magazine Apollo', a design museum presents diverse designs along with history and a story [3]. While prevalent in Europe and North America, the only design museum in Asia is the Red Dot Design Museum in Singapore.

It is important to clarify the difference between a traditional museum and a design museum. According to Heller and Pettit [4], the purpose of a design museum is to reveal the importance and the impact of design on the social, cultural, and economic growth of society. A design museum not only gives accurate and precise knowledge about design, it also illustrates the differences between art and design, opening the public's eyes to a deeper understanding of the chorology of design.

Design museums create new relationships between the design industry and the public [5], increasing the popularity and awareness of the designs that have influenced society [6]. The typical design museum has three missions to plan: 1) exhibitions, 2) collections, and 3) public education efforts. Most design museums try to reach out to the widest audience possible, providing various programs categorized into groups or by age. Design museums present mostly interactive exhibitions that teach visitors about design vividly and clearly while stimulating their curiosity and increasing their design communication skills [7].

The COVID-19 pandemic has necessitated that design museums also provide online programs [1]. The impossibility of visiting a physical location has encouraged the public to access online platforms to enjoy design museums safely [8]. Thus, the spread of the virus has created a boon in the digital presentation of culture in the field of design [2]. The digital space has become what "people will rely on, coming up with incredibly imaginative ways to find connections even when they are not in the same physical space

together" [9]. Thus, online programs are likely to be the new communication platform [Figure 1] for creating connections with which individuals can receive positive emotional feedback and comfort [10].



Figure 1. People Who Participated in MIT's COVID-19 Challenge

2. Theoretical Background

2.1 The Difference between Art and Design

A generalized definition of design from 'Dictionary.com' is "to prepare the preliminary sketch or the plans for a work to be executed, especially to plan the form and structure of" [11]. When used as a verb, design means to build, organize, construct, etc. While design can be seen in diverse areas of life, the most common way for the public to explore design is at a modern art museum or other art exhibitions. However, art exhibitions do not offer a comprehensive understanding of the field of design. Indeed, art and design have different characteristics [12], and this clarification is crucial to understanding the importance of design. Although this topic has been debated for a long time, it is possible to find "the core principles of each craft" [13].

Table 1. Comparisons of Art and Design

	Art	Design	
differences	 liberty: no rules free to extend the topic can be diversely interpreted sends a different message for everyone creates a bond between the artist and the audience judged by personal taste 	 restrained under regulation and rules design has a specific purpose sends the same message to everyone design's purpose is to communicate a message design motivates the viewer to do something design is art combined with science and engineering 	
similarity	 visual compositions 		
	 both art and design contains be 	 both art and design contains beauty 	

Artist Maurizio Cattelan believes art and design are not the same disciplines: "What interests me is the overlapping of different areas, such as art and design, or art and fashion" [14]. Thus, while art and design may seem similar, each field is distinct [Table 1]. Although design includes some sources of art, it has a different core value [15]. First and foremost, art allows the creator more liberty. The artist is free to extend

the topic of their work and express their opinion through it. Art can be diversely interpreted, depending on the audience, regardless of the artist's intention.

Works of design can be a source of expression, but this is uncommon. Typically, it is hard to maintain a balance between the personal view of the artist and the requirements of the design given by the person commissioning it. Consequently, design is more constrained and often has regulations, resulting in the meaning and understanding of design being more straightforward than that of art. Thus, it is possible to interpret design as art combined with science and engineering.

According to the scholars Ralph and Wand, design "incorporates seven elements: agent, object, environment, goals, primitives, requirements and constraints" [16]. Designers, unlike artists, collaborate not only with engineers, but also with reality: they must consider whether an ideation can be realized or not. In this sense, the designer has more challenges to face than the artist, such as discussing the technical possibilities with engineers, difficulties due to a lack of technical skills, or certain government regulations, and has to negotiate between designers, technicians, and related actors.

Indeed, designers know that "the understanding of what design can really vary across companies, organization, and teams" [12]. Ralph and Wand assisted that the design project conceptual model is based on the view that projects are temporal trajectories of work systems that include human agents who work to design systems for stakeholders and use resources and tools to accomplish this task" [16]. If a certain design has a commercial purpose, then the related company, advertiser, designer, technician, and many others must collaborate as a team.

Overall, based on the definition of design from various perspectives, I agree with the scholars and designers. I also think that design is the combination of various elements that improve existing objects with a creative idea. Hence, art "asks questions" and design "answers" them[17]. If art creates a new concept, design take sexisting problems or concepts and develops or organizes the min a way that is helpful to society [17]. There are several principles guiding good design, while art has no boundaries or limitations [18].

While it is hard to imagine the world without design, design is less approachable than art. The purpose of a design museum is to lessen the gap between people and design; as art works are displayed in art museums, various types of design are exhibited in design museums. Often a distinctive characteristic of design museums is their interactive style of exhibition. Unfortunately, COVID-19 has become a barrier for those wanting to learn about design by visiting design museums. Under the global pandemic, design museums that emphasize interactive experiences have reacted by implementing different methods of exhibition and programs. By comparing and researching the case studies of design museums, innovative programs with originality will be founded for people.

3. Case Studies of Design Museums: How Countries are Managing Design Museums under the Covid-19

3.1 Het Nieuwe Instituut: Rotterdaam (Germany)

The top priority of the Netherlands is to reduce the number of infections throughout the country. Statistically, the Netherlands' 77,688 coronavirus cases and 6,246 deaths constitute a severe situation [19]. The Netherlands has enforced several basic rules for its citizens since March 2020. This study is concerned with the rules related to cultural aspects and hygiene, such as requiring that, if possible, citizens should work from home, avoid crowded areas, and walk around during busy hours [20]. Also, hand shaking

is strongly discouraged, and people should stand 1.5metersapart. The instructions on maintaining physical distance apply to everyone over the age of 18 [21]. The maximum number of people in an indoor setting is limited to 100, especially where the flow of people is active, such as in shops or museums [21]. These rules apply to all areas. For the purpose of this case study, information has been gathered specifically on Rotterdam, where the design museum Het Nieuwe Instituut is located.

Rotterdam has a website for tourist information [22]. There, people can learn about the overall culture of Rotterdam and its famous attractions. The website also includes information on the additional measures put in place in response to COVID-19. The limited number of people at indoor gatherings for Rotterdam is the same as those given by the Dutch government. In the case of museums and monuments, whether they are open depends on the maximum number of visitors and the health condition of those visitors [22]. For some attractions and museums, an online reservation is needed. The city's online platform also encourages people to make an online reservation by offering a discount using the Rotterdam Welcome Card [22]. In this way, Rotterdam is trying to keep the attractions and museums open by regulating the number of visitors to them.

Het Nieuwe Instituut is a design museum in Rotterdam that specializes in architecture, design, and digital design [23]. The institute has implemented a specific plan for functioning during the pandemic. Relevant information about COVID-19 can be found on the front page of the Het Nieuwe Instituut website [20]. Currently, tickets are only available through online reservations, allowing the museum to control the attendance numbers. The Het Nieuwe Instituut also provides various programs and projects through an online platform. Thus, it allows the public to enjoy the design museum both offline and online [24]. The website also shows previews of on-going offline projects. Visitors who access the website can also enjoy various programs offered by the design museum. In both online and offline visiting, the museum has created interactive ways for visitors to experience designs [24]. In this way, the museum helps reduce the cases of depression due to the difficult psychological conditions caused by the coronavirus.

The Het Nieuwe Instituut also introduced a specialized idea called "Thursday Night Live!" [Figure 2]. This is a weekly program of lectures and discussions on architecture, culture, and design offered both online and offline and created not only by Dutch designers but also by those from other countries [25]. By creating a space tocommunicate, the Het Nieuwe Instituut provides an interactive experience that brings people together so they can receive emotional comfort and relieve the stress caused by the pandemic.

The Het Nieweu Instituut has also found a creative way to keep people safe at the museum's physical location. The design agency 75 B (RensMuis and PierterVos), known for their colorful, bold, and playful designs, designed the floor of the museum [26] in such a way that it intuitively delivers the message of social distancing [Figure 3]. "It's a graphic language that people intuitively recognize," says Vos. "Abstract electric chemistry" is how Pieter Vos sums up 75B's way finding design for Het Nieuwe Instituut [Figure 4]. The designers realized that the new reality created by the arrival of COVID-19 calls for a new language [26].

Figure 3. Sketch for 'Abstract Electric Chemistry' Routing Design by 75B





Thus, the Het Nieuwe Instituut has altered their exhibition style along with the social circumstances. It has expanded its online programs which are interactive digital contents for users. It has reacted well to the global pandemic with its online plat form that is formed with various digital contents. Also, the exhibitions at its physical location are still open to the public while continuously reminding people to maintain COVID-19 safety measures.

3.2 The London Design Museum (The United Kingdom)

The government of the United Kingdom wants the country to function as close to normal as possible. It is also trying to avoid new infections while minimizing the number of deaths and maximizing citizens' health [27]. It has announced three simple actions to fight the coronavirus:1) wash your hands, 2) cover your mouth and nose in enclosed spaces, and 3) stay 2 meters apart or 1 meter with a face covering [28]. On September 23, 2020, the total number of confirmed cases in the United Kingdom is 398,629 with 41,788 deaths [29]. Like other countries, the U.K. has emphasized maintaining social distance and limiting the size of gatherings [30]. This means that, regardless of the size of the space, groups of more than six people are not permitted, except for special occasions such as funerals and weddings [31]. For those occasions, the legal number allowed to gather is 30 [32]. Interestingly, London does not have additional regulations in terms of opening museums, attractions, or any other social life, except for the online reservation system which is regulated by the government of the United Kingdom. It is still permissible to attend indoor and outdoor performances if the size restrictions given by the federal government are maintained. London has had 6,172 cases of COVID-19 and 242 deaths [33].

The Design Museum in London is a place where people can learn about and experience various designs [34]. After closing down briefly when the pandemic began, the museum has partially re-opened and established policy changes to keep their visitors safe. The main page of their website gives people important information for visiting the museum during this time [34]. Visitors are told to book tickets in advance, as only online reservations are available due to the limits on the size of gatherings [35]. Also, the amount of time for a visit is limited to one hour and 30 minutes. However, "to avoid feeling rushed, all ticket holders will be emailed a link to catch up with most of the videos in the exhibition home" [36]. Also, the Design Museum has announced that visitors should bring their own wired headphones and has made their exhibits hands-free experiences to maintain hygiene [36]. Adistinctive characteristic of the Design Museum is that visitors can watch a preview video of the exhibitions on online to make them aware of any warnings.

The Design Museum has active online exhibitions, programs, and projects. Recently, it announced #DesignFromHome as new online content [37], adding its digital followers by over 5 million [37]. The followers were able to access valuable resources while the resources during the museum's initial closure at the start of the COVID-19 pandemic [37]. Online, the museum provides four different programs divided into four sections:#DesignDispatches, which features the world of architecture, fashion, and design; Young Design Museum, which is for students who are homeschooling [38]; Learn with Design Museum, where people can learn about specific areas of design; and Into the Archive, which tells the story behind present and past exhibitions [39]. These programs can be found under the Digital Design Calendar, which connects people looking for inspiration [38]. The Digital Design Calendar "builds on the regularity of weekly #FontSunday activity" [38], which has been trending on Twitter [38]. The temporary closure inspired the museum to turn 'inside out' by scaling up the online museum "to offer new daily content" [38] as the output of the museum can provide time for experimentation, reflection, and consolation through the optimism of design [38].

The onset of COVID-19 has altered the way people live, interact, and work [40]. The Design Museum conducted a project called "Connected: 9 designers – 3 hardwoods – 1 workshop" [40] that encouraged designers to "adapt their processes using new technologies to work together at a distance" and improvise home offices [40]. This project was a collaboration between the American Hardwood Export Council, Benchmark Furniture, and the Design Museum. The designers, who came from multiple countries [Figure 5] were challenged to create a table and seating for any purposes [41]. This project involved online meetings, and the videos are available on the Design Museum's website and the official "Connected" page [Figure 6].

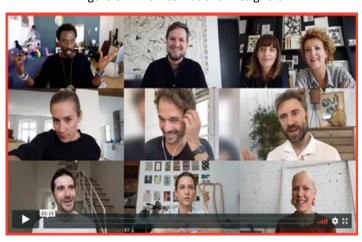


Figure 5. Nine International Designers

This project exemplifies an innovative and creative way to do design work as a team. "Made together apart" [40] as awaken another level of creation and the spirit of experimentation. Although the project was started because of the pandemic, it has the potential to be developed as a long-term project, particularly with the development of new technologies. Cultural exchange in terms of design and technologies ultimately enriches the field of design.

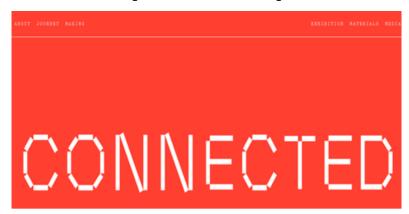


Figure 6. Connected Web Page

3.3 Picnakothek-Der-Moderne: Die Neue Sammlung (Germany)

Pinakothek-Der-Moderne museum covers four categories: art, prints and drawings, architecture, and design [42]. It is one of the largest museums of modern and contemporary art but also has its own design division known as Die Neue Sammlung [43] that specializes in industrial and product design. The museum has more than 100,000 items of industrial design, graphic design, computer culture, mobility, and arts and crafts. At around 100 years old, it is believed to be the world's oldest design museum [43]. The mission statement of the Die Neue Sammlungis to identify, collect, and preserve new designs of the highest quality [43] with a chronological spectrum from the "1900s to the immediate present" [43]. It contains more than 20 different areas with diverse themes. Die Neue Sammlung not only displays different types of designs, it also reveals hidden meanings, explores cultures, and educates on the history of design [44],providing visitors with the opportunity to expand and absorb new insights, experiences, and stories.

Die Neue Sammlung provides information about their exhibitions online so that people have basic knowledge before visiting [45]. For one program, a 360-degree virtual tour is provided [Figure 7] that allows viewers to learn about the project 'Design or What?' even though the exhibition has ended [46]. Certain programs are only held at the physical location; these are divided into three categories: adults; children, family, and youth; and inclusion and intercultural groups [8]. Interestingly, Die Neue Sammlung is the only design museum that has a special program for people with mental health issues; these programs fall under the inclusion and intercultural section [46]. During the COVID-19 pandemic, Die Neue Sammlung created a separate webpage for questions and answers relating to the virus [43]. Due to social distancing and safety policies, group visiting is limited to a maximum of seven persons, including the guide. Visitors can book their tickets online, but individuals or groups of less than seven can purchase tickets in person [45]. Die Neue Sammlung doesnot limit the time of exploring the museum; instead, it has designated spots for people to maintain social distance [45].

DESIGN +. 360°, INGO MAURER INTIM. DESIGN OR WHAT?

13.10.2020 by ROSA CAROLE RODECK

Ingo Maurer Intim. Design or What?

360° exhibition archive

Since October 2020, our exhibitions have been documented in a 360° tour, so that you have the opportunity to visit Die Neue Sammlung – The Design Museum even after an exhibition has ended.

To do so, please click on the following link with your mobile device, computer or mac:

VIRTUAL TOUR

Concept/virtual tour: Konstantin Landuris Studio

See also: Archiv Exhibition

INGO MAURER INTIM. DESIGN OR WHAT?

Figure 7. Virtual Tour Exhibition

4. Findings

The COVID-19pandemic has caused much loss and presented many challenges to daily living, but it has also been a catalyst to the invention of innovative communication platforms as a means to provide connection and comfort.

Table 2. Comparison of the Museum Case Studies

	The Het Nieuwe Instituut	The Design Museum	Pinakothe-Der-Moderne: Die Neuesammlung
offline exhibition	yes	yes	yes
online exhibition	Yes	no (currently has one online project)	no (it used to has 360° virtual tour archives and previews)
regular special programs	yes (Thursday night live!)	yes (design digital calendar - lectures, courses, and workshops with designers)	no
open or closed due to covid-	fully open for a limited number of people	partially re-opened	fully opened (groups of seven persons, including guide, are allowed)
preview of exhibitions	yes	yes	yes (some previews are using virtual reality
warning or provision of necessary information on the website	no	yes	no
educational programs	no	yes	yes (it has only offline hands- on experience programs)
library	yes	yes	no (it has its own magazine collection online)
online design shop	no	yes	no

Both the Het Nieuwe Instituut and the Design Museum are great places to learn and experience designs [Table 2]. However, the latter covers a broader spectrum of design, while the former has its own areas of expertise: architecture, design, and digital design. Consequently, since the Het Nieuwe Instituutis bigger and covers a wider area of design, it is the more appropriate place to learn about all fields of design.

These design museums had to either close or limit the number of visitors allowed at a time due to the COVID-19 outbreak. With this in mind, the online platforms of design museums area crucial means by which people can enjoy cultural activities from home. Online exhibitions are a different approach to enjoying works of design. Thus, the Het Nieuwe Institutt has a well-systemized online design museum [23], and the London Design Museum is more focused on interactive exhibitions on online [34]. However, the latter also ran an online design project that it presented through its online platform.

The online design museum has the potential to grow and to be developed. By enlarging the online design platform, the field of design can be more approachable, allowing for the dispersal of knowledge showing the difference between design and art. Most design museums have introduced an online platform for visitors. Online communication and visiting platforms have become another trend in cultural interests. As a consequence of the corona virus, most museums have tried to establish online museums. Previously, online museums were considered merely complements to physical museums. However, their significance has increased as the importance and breadth of digital content has increased. Successful online museums will include more imaginative space for personal exhibitions, interactive exhibitions, and game-style interactions and will create a place for curators and people of diverse backgrounds to interact.

The founding is that design museums should expand their online design museum platform by adding various methods, such as the formation of virtual reality, augmented reality, mixed reality, or gamification [48]. The online design museum can be made in chronological order and in such a way that encourages visitors to explore a big design museum at home where they are safe from COVID-19. For example, the 360-degree virtual reality exhibition archived on the Die Neue Sammlung website is a good example of an effective exhibit from an online design museum [44]. In this way, experience-based museums can encourage people to increase their communication [49] and the skills of "holistic thinking, empathy, imagination, creativity, visualizing problems and solutions" [50].

5. CONCLUSION

Online communication platforms of various design museums should be developed further to make an online design museum that can be enjoyed using all five of the senses—touch, sight, hearing, smell, and taste [39]—and provide new ways to help people communicate about design. To investigate how design museums are reacting to the global COVID-19 pandemic authors conducted three design museums' online exhibitions from Het Nieuwe Instituut: Rotterddam (Netherlands), The London Design Museum (United Kingdom), and Picnakothek-Der-Moderne: Die Neue Sammlung (Germany). Then we analyzed the characteristics of the museums both online and offline, particularly in how they have responded to COVID-19. Since the beginning of the COVID-19 pandemic, the importance of online platforms and online culture has increased, and new issues have emerged as topics of discussion. All countries are in a state of emergency because of the highly infectious nature of the deadly virus. Now, it is impossible to freely walk around or visit any place without following necessary precautions. Under these circumstances, the use of online platforms has increased, and social life has become an online activity. As this paper has explained, more design museums should create online design museums that will resonate with people as they spread knowledge of design and make it more easily approachable.

REFERENCES

Bavel, J. Van Jay, Baicker, Katherine., Boggio, S. Paulo. et al. "Using social and behavioral science to support COVID-19 pandemic response." Natural Human Behavior 4 (2020): 460-471. https://doi.org/10.1038/s41562-020-0884-z

Kramer, D. I. Adam, Guillory, Jamie. E. and Hancock, T. Jeffrey. "Experimental evidence of massive-scale emotional contagion through social networks." Proceedings of the National Academy of Science of the United States of America. 111 (2014): 8878-8790. https://doi.org/10.1073/pnas.1320040111

Martin, R. What are design museums for? The International Art Magazine/Apollo, 2016. Retrieved July 6, 2020, from https://www.apollo-magazine.com/what-are-design-museums-for/

Heller, S., & Petit, E. Design dialogues. New York: Allworth Press, 1998.

Design Museum. "Design Museum Launches Digital #DesignFromHome Initiative." Disegno Daily, Design Museum, 1 April 2020, www.disegnodaily.com/article/design-museum-launches-digital-designfromhome-initiative.

The Design Museum. "Digital Design Calendar." Design Museum, Retrieved April 29, 2020, fromttps://designmuseum.org/digital-design-calendar.

O'Nolan, John. "The Difference Between Art and Design." Web designer Depot RSS, 21 September 2009. www.webdesignerdepot.com/2009/09/the-difference-between-art-and-design/.

Kee-Jung Bang. A Study on Non-verbal Visualization Elements of Traditional Performing Arts. International Journal of Interactive Storytelling 2 (2018): 13-18. http://dx.doi.org/10.21742/IJIS.2018.2.2.03

Wright, Robin, "Finding Connection and Resilience during the Coronavirus Pandemic." The New Yorker, 12 March 2020: 2.www.newyorker.com/news/our-columnists/coping-camaraderie-and-human-evolution-amid-the-coronavirus-crisis?itm_content=footer-recirc.

Kim, Hye-Ryoung. "MIT Virtual Hackaton, "A new chapter in cooperation to overcome COVID-19". Trend _ Design Trend, Design DB,10 June 2020, www.designdb.com/index.html?menuno=1278.

"Design." Dictionary.com, Dictionary.com, www.dictionary.com/browse/design

Singh, Aishwarya. "Difference between ART and DESIGN." Medium, DETAUX (Designers Talks), 19 September 2018, medium.com/designerrs/what-is-the-difference-between-art-and-design-d3af93ea8543.

O'Nolan, John. "The Difference Between Art and Design." Web designer Depot RSS, 21 September 2009. www.webdesignerdepot.com/2009/09/the-difference-between-art-and-design/.

Muñoz-Alonso, Lorena. "Artnet Asks: Artist & Designer Maurizio Cattelan." Artnet News, 3 December 2015, Retrieved July 6, 2020 from https://news.artnet.com/art-world/artnet-asks-maurizio-cattelan-383957.

Singh, A. Difference between ART and DESIGN, 2018. Retrieved July 6, 2020, from https://medium.com/dschool/whatis-the-difference-between-art-and-design-d3af93ea8543

Ralph P., Wand Y. A Proposal for a Formal Definition of the Design Concept. In: Lyytinen K., Loucopoulos P., Mylopoulos J., Robinson B. (eds) Design Requirements Engineering: A Ten-Year Perspective. Lecture Notes in Business Information Processing, vol 14. Berlin, Heidelberg: Springer, 2009. https://doi.org/10.1007/978-3-540-92966-6_6

Martin, R. What are design museums for? The International Art Magazine/Apollo, 2016. Retrieved July 6, 2020, from https://www.apollo-magazine.com/what-are-design-museums-for/

Young, Philip. "Definition of Design and the Difference with Art." Philip Young, 25 August. 2014, www.philipyoungg.com/thoughts/definition-of-design-and-the-difference-with-art.

Worldometer. "Netherlands." Worldometer, 9 September 2020, 14:24 GMT, www.worldometers.info/coronavirus/country/netherlands/.

Ministerie van Algemene Zaken. "Dutch Measures against Coronavirus: Basic Rules for Everyone." Coronavirus COVID-19|Government.nl, Ministerie Van Algemene Zaken, 2 September 2020, www.government.nl/topics/coronavirus-covid-19/tackling-new-coronavirus-in-the-netherlands/basic-rules-for-everyone.

Ministerie van AlgemeneZaken. "Rules That Apply Indoors and Outdoors." Coronavirus COVID-19|Government.nl, Ministerie Van AlgemeneZaken, 2 September 2020, www.government.nl/topics/coronavirus-covid-19/tackling-new-coronavirus-in-the-netherlands/public-life.

Rotterdam Tourist Information. "Coronavirus." Rotterdam Tourist Information, 2020, en.rotterdam.info/visitors-info/additional-measures-coronavirus/.

Het Nieuwe Instituut. About Het Nieuwe Instituut, 2018. Retrieved September 22, 2020, from https://hetnieuweinstituut.nl/en/about-us

Het Nieuwe Instituut. Opening hours and entrance, 2020. Retrieved from https://hetnieuweinstituut.nl/en/opening-hours-and-entrance

Het Nieuwe Instituut. Het Nieuwe Instituut, n.d. Retrieved September 22, 2020, from https://thursdaynight.hetnieuweinstituut.nl/en

Het Nieuwe Instituut. 75B, 2020. Retrieved September 22, 2020, from https://grafisch-ontwerp.hetnieuweinstituut.nl/en/graphic-designers/75b

Department of Health and Social Care. Government's approach to managing local coronavirus outbreaks, 2020. Retrieved September 22, 2020, from https://www.gov.uk/guidance/governments-approach-to-managing-local-coronavirus-outbreaks

GOV.UK. Coronavirus (COVID-19): Guidance and support, 2020. Retrieved September 23, 2020, from https://www.gov.uk/coronavirus

World Health Organization. The United Kingdom: WHO Coronavirus Disease (COVID-19) Dashboard n.d. Retrieved September 23, 2020, from https://covid19.who.int/region/euro/country/gb

Cabinet Office. Coronavirus (COVID-19): Meeting with others safely (social distancing), 2020. Retrieved September 23, 2020, from https://www.gov.uk/government/publications/coronavirus-covid-19-meeting-with-others-safely-social-distancing

Government of the United Kingdom. Coronavirus outbreak FAQs: What you can and can't do, 2020. Retrieved September 22, 2020, from https://www.gov.uk/government/publications/coronavirus-outbreak-faqs-what-you-can-and-cant-do/coronavirus-outbreak-faqs-what-you-can-and-cant-do

LDN_gov. Face covering guidance, 2020. Retrieved September 23, 2020, from https://www.london.gov.uk/coronavirus/face-covering-guidance

LDN_gov. Coronavirus numbers in London, 2020. Retrieved September 23, 2020, from https://www.london.gov.uk/coronavirus/coronavirus-numbers-london#:~:text=In the week ending 18,COVID-19 is now 6,172.

The Design Museum. Home, n.d. Retrieved September 23, 2020, from https://designmuseum.org/?gclid=CjwKCAjw5Kv7BRBSEiwAXGDEIUGIOeD7x8WzQPgXXEOrKK1NH7Ed5NcQSVImsXeun JgudfSJ29EBjxoCONcQAvD_BwE

The Design Museum. Plan your visit, n.d. Retrieved September 23, 2020, from https://designmuseum.org/plan-your-visit

The Design Museum. Safe and Sound, n.d. Retrieved September 23, 2020, from https://designmuseum.org/safe-and-sound

Design Museum. "Design Museum Launches Digital #DesignFromHome Initiative." DisegnoDaily, Design Museum, 1 April 2020, www.disegnodaily.com/article/design-museum-launches-digital-designfromhome-initiative.

The Design Museum. "Digital Design Calendar." Design Museum, Retrieved September 23, 2020 from https://designmuseum.org/digital-design-calendar.

H. K. Leeand M. K. Kim, "Importance of Design Museum from the Perspective of Millennium Generation", International Journal of Art and Culture Technology 4(2020): 1-6.

The Design Museum. Connected, n.d. Retrieved September 23, 2020, from https://designmuseum.org/exhibitions/connected

The Design Museum, American Hardwood Export Counsel, and Benchmark. Connected, n.d. Retrieved September 23, 2020, from https://www.connectedbydesign.online/

Pinakothek-der-moderne. MUNICH, n.d. Retrieved October 31, 2020, from https://www.pinakothek-der-moderne.de/en/

Pinakothek-der-moderne. Design n.d. Retrieved October 31, 2020, from https://www.pinakothek-der-moderne.de/en/design/

Dr. Xenia Riemann-Tyroller. Beckmann-Buscher-Eliasson-Kere, n.d. Retrieved October 31, 2020, from https://www.pinakothek-der-moderne.de/en/experience/beckmann-buscher-eliasson-kere/

Die NeueSammlung. Design Museum n.d. Retrieved October 31, 2020, from https://dnstdm.de/en/

Rodeck, C. Rosa, Design 360°. Design or What? n.d. Retrieved October 31, 2020, from https://dnstdm.de/en/360-ingo-maurer/\

Bongkwan Moon, Sangin Nam, Dongkyum Kim, Hyeonjeong Kim, Eunju Park, Hankyu Lim. "Design and Production of Educational VR Contents Learning about Design's Principle and Flow," Asia-Pacific Journal of Convergent Research Interchange 6 (2020): 31-39. http://dx.doi.org/10.21742/apjcri.2020.01.03

YoungbongSeo, O-Kaung Lim, JiinEom. "Design Process for Global Service Learning Project," Asia-Pacific Journal of Convergent Research Interchange 3 (2017): 35-42. http://dx.doi.org/10.14257/apjcri.2017.12.01

Lee, H., &Breitenberg, M. Education in the New Millennium: The Case for Design-Based Learning, International Journal of Art & Design Education, Vol. 29, Number 1, (2010): 54-60. https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1476-8070.2010.01631.x.