

MORE THAN JUST SMOKE AND LIGHTS: THE ARCHITECTURE OF CONCERT STAGE DESIGN

by
Leah Dingman

A thesis
presented to the University of Waterloo
in fulfillment of the
thesis requirement for the degree of
Master of Architecture

Waterloo, Ontario, Canada, 2023

©Leah Dingman 2023

AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis.
This is a true copy of the thesis, including any required final
revisions, as accepted by my examiners.

I understand that my thesis may be made electronically
available to the public.

ABSTRACT

Live music creates an environment that allows your mind to go silent, where all your senses are stimulated in perfect harmony. It's a heightened sense of reality, a place to escape and be consumed in something that feels like your bones are being hugged. Architecture is what is used to make these ethereal moments a reality.

Architecture plays a pivotal role in amplifying the overall experience for the audience and performer by creating an immersive spectacle, yet architects have frequently been left out of the conversation of concert stage design, which has led to underdeveloped immersive concerts. Concert design has now become an oversaturated field and an architect's contributions have not yet been fully understood. By understanding how the skills of an architect can be utilized in concert design, elements such as space, scale, sightlines, functionality and aesthetics can transform arenas into engaging environments, and transcend the audience into new realms.

To understand the role of an architect within this field of design, research was conducted to understand the last 100 years of performance history, the core materials and effects used in sets, the different types of stages, the expectation of the spectacle, and design logistics. With this research, I seek to contribute to the broader discourse on the fusion of architecture, live music, and emotion, by analyzing how different architectural elements such as stage shape and scale can evoke different emotions for the audience.

The findings of this research are tested through the comprehensive design of three stages, each of which aims to emphasize specific emotional responses, and use different architectural elements that transform space to address said emotions. The stages are designed respectively around three songs composed and performed by the R & B artist Labrinth. Labrinth is a highly dynamic and versatile artist with a discography of music that includes a range of styles, tempos and emotions. Additionally, Labrinth has yet to go on a full arena scaled tour, allowing for an uninfluenced imagining of his performances. The first stage is designed for his song "Jealous". "Jealous" is a slow and dreamy composition, therefore the corresponding stage uses lightweight architectural elements, including hanging, interactive fabrics that evoke an ethereal environment. The second stage is designed for the song "When I R.I.P." which is a more rhythmic and high tempo song, so the corresponding stage design transitions into a profile stage with a grounded, heavy base and overhanging roof. This stage typology creates an intense and edgy environment due to its invasive protrusion into the audience, and added stark materiality. The final stage is for Labrinth's song "Sexy MF" which is an upbeat, high energy song that inspires dancing and togetherness. The resulting stage design utilizes a large roof structure that encapsulates both Labrinth and the audience, effectively creating an interconnection within the space.

These architectural contributions will envision new possibilities that push the boundaries of concert stage design past just smoke and lights, revolutionizing the way we experience live performances.

ACKNOWLEDGMENTS

To my supervisor Terri Boake and committee member David Correa, thank you for the enthusiasm towards my thesis topic, and for helping me continue to push it forward.

To my family, thank you for listening to the countless phone calls filled with overthinking and stress, I would be no where without you.

To my Cambridge friends, thank you for making this place feel like home.

TABLE OF CONTENTS

iii	Author's Declaration
v	Abstract
vii	Acknowledgments
xi	List of Figures
2	Chapter One - Introduction & Methodology
6	Chapter Two – A Walk Through Time & Concerts in North America
14	Chapter Three – Concerts Materials
	Time
	Light
	Scale
	Space
	Sound
	Audience
36	Chapter Four – Order & Complexity within Concert Stage Design
	Types of Stages
	Expectation of the Spectacle
	Logistics of Concert Design
84	Chapter Five – Design Work
	Labrinth 'Jealous' Stage Design
	Labrinth 'When I R.I.P.' Stage Design
	Labrinth 'Sexy MF' Stage Design
204	Chapter Six – Conclusion
189	Bibliography

LIST OF FIGURES

- fig. 01: Dingman, Leah. "Methodology Diagram". Digital Drawing. 2023.
- fig. 02 Jones, Max. "Evolution of the Concert." Vocal. Accessed May 31, 2023. <https://vocal.media/beat/evolution-of-the-concert>
- fig. 03 David Boaz, "Woodstock Crowd," Saturday, August 13, 2016, fee.org, <https://fee.org/articles/woodstock-sex-drugs-rock-and-roll-and-capitalism/>
- fig. 04 Ulrike Biets, "Mosh pits at heavy metal concerts can shed light on human collective motion," News Cornell, February 26, 2013, <https://news.cornell.edu/stories/2013/02/mosh-pits-can-shed-light-panic-situations>.
- fig. 05 "Coldplay Concert using Xylobands." Accessed June 30, 2023. <http://xylobands.com/live-music/>.
- fig. 06 Dingman, Leah. "Ingredients of Stage Design". Digital Drawing. 2023.
- fig. 07 Howe, Danny. "Festival Vibe." 2018. Unsplash. <https://unsplash.com/photos/74kSh-nX5zZl>
- fig. 08 Papanastasopoulos, Yannis. "Moderat". 2017. Unsplash. https://unsplash.com/photos/yWF2LLan_o
- fig. 09 Devlin, Es. "MTV Europe Music Awards" 2010. Es Devlin. <https://esdevlin.com/work/mtv-ema-2010>
- fig. 10 Devlin, Es. "MTV Europe Music Awards" 2010. Es Devlin. <https://esdevlin.com/work/mtv-ema-2010>
- fig. 11 Devlin, Es. "Take That - Progress Stadium Tour" 2011. Es Devlin. <https://esdevlin.com/work/take-that-progress>
- fig. 12 Devlin, Es. "Adele - World Arena Tour" 2016. Es Devlin. <https://esdevlin.com/work/adele-world-tour>
- fig. 13 Dingman, Leah. "Diagram showing the spaces at a concert". Digital Drawing. 2023.
- fig. 14 Devlin, Es. "The Weeknd at Coachella" 2019. Es Devlin. <https://esdevlin.com/work/weeknd-coachella>

- fig. 15: Dingman, Leah. "Diagram showing the location of concert speakers". Digital Drawing. 2023.
- fig. 16: Coules, Andy. "Concert Speaker Setup." 2021. Harman A Samsung Company. <https://pro.harman.com/insights/av/the-history-of-live-sound-part-1/>
- fig. 17: Eric. "How To Enjoy Heavy Rock Concerts Safely". September 14, 2022. Fuel. <https://www.fuelrocks.com/the-dangers-of-the-mosh-pit-how-to-enjoy-heavy-rock-concerts-safely/>
- fig. 18: Zigic, Drazen. "Photo back view of crowd of fans watching live performance on music concert at night". Freepik. https://www.freepik.com/free-photo/back-view-crowd-fans-watching-live-performance-music-concert-night-copy-space_25566911.htm#query=concert%20crowd&position=0&from_view=keyword&track=ais
- fig. 19: Dingman, Leah. "Types of Stages". Digital Drawing. 2023.
- fig. 20: Dingman, Leah. "Balance between Chaos and Boring". Digital Drawing. 2023.
- fig. 21: beasdown97. "Audience Configurations and Theatre Types" Septmeber 26, 2015. Word Press. <https://beasdown97.wordpress.com/2015/09/26/audience-configurations-and-theatre-types/>
- fig. 22: "Layout of Christopher Wren's Theatre Royal". Word Press. <https://restorationtheater.wordpress.com/category/articles/>
- fig. 23: Devlin, Es. "Adele - World Arena Tour" 2016. Es Devlin. <https://esdevlin.com/work/adele-world-tour>
- fig. 24: Devlin, Es. "Pet Shop Boys - Electric Tour" 2013. Es Devlin. <https://esdevlin.com/work/psb-electrid>
- fig. 25: Devlin, Es. "Lorde - Coachella" 2017. Es Devlin. <https://esdevlin.com/work/lorde-coachella>
- fig. 26: Devlin, Es. "Pet Shop Boys - Electric Tour" 2013. Es Devlin. <https://esdevlin.com/work/psb-electrid>
- fig. 27: Devlin, Es. "Lorde - Coachella" 2017. Es Devlin. <https://esdevlin.com/work/lorde-coachella>
- fig. 28: Devlin, Es. "Miley Cyrus - Bangers World Tour" 2014. Es Devlin. <https://esdevlin.com/work/miley-cyrus>
- fig. 29: Devlin, Es. "Kanye West - Revel Theatre" 2012. Es Devlin. <https://esdevlin.com/work/kanye-2012>
- fig. 30: Devlin, Es. "Rolling Stones - Hyde Park" 2013. Es Devlin. <https://esdevlin.com/work/rolling-stones>
- fig. 31: Devlin, Es. "Kanye West - Revel Theatre" 2012. Es Devlin. <https://esdevlin.com/work/kanye-2012>
- fig. 32: Devlin, Es. "Lady Gaga - Monster Ball US Theatre Tour" 2009-2010. Es Devlin. <https://esdevlin.com/work/lady-gaga>
- fig. 33: Devlin, Es. "Pet Shop Boys - Electric Tour" 2013. Es Devlin. <https://esdevlin.com/work/psb-electrid>
- fig. 34: Devlin, Es. "Beyonce - Formation World Stadium Tour" 2016. Es Devlin. <https://esdevlin.com/work/beyonce>
- fig. 35: Devlin, Es. "Pet Shop Boys - Electric Tour" 2013. Es Devlin. <https://esdevlin.com/work/psb-electrid>
- fig. 36: Devlin, Es. "Kanye West - Revel Theatre" 2012. Es Devlin. <https://esdevlin.com/work/kanye-2012>
- fig. 37: Fielding, Amy. "Swedish House Mafia" 2019. DJ Magazine. <https://djmag.com/news/swedish-house-mafias-creamfields-production-so-big-festival-closing-stage-full-day>.
- fig. 38: Hughes, Jordan. "The 1975 Tour". 2022. Alt Press. <https://www.altpress.com/the-1975-at-their-very-best-tour-recap/>
- fig. 39: Devlin, Es. "U2 – Experience + Innocence Tour" 2018. Es Devlin. <https://esdevlin.com/work/u2-experience-innocence>
- fig. 40: Devlin, Es. "The Weeknd at Coachella" 2019. Es Devlin. <https://esdevlin.com/work/weeknd-coachella>
- fig. 41: Dingman, Leah. "Front Stage Diagram". Digital Drawing. 2023.
- fig. 42: Devlin, Es. "Lorde - Coachella" 2017. Es Devlin. <https://esdevlin.com/work/lorde-coachella>
- fig. 43: Devlin, Es. "Lorde - Coachella" 2017. Es Devlin. <https://esdevlin.com/work/lorde-coachella>
- fig. 44: Devlin, Es. "Lorde - Coachella" 2017. Es Devlin. <https://esdevlin.com/work/lorde-coachella>
- fig. 45: beasdown97. "Audience Configurations and Theatre Types" Septmeber 26, 2015. Word Press. <https://beasdown97.wordpress.com/2015/09/26/audience-configurations-and-theatre-types/>

- fig. 46: CassStudio6. "Thrust Stage". Word Press. <https://cassstudio6.wordpress.com/types/>
- fig. 47: Ariana Grande – Sweatener World Tour. Youtube, 1:00. Posted Feburaqry 2 2021. <https://www.youtube.com/watch?v=2XJSgJkWoYl>
- fig. 48: Devlin, Es. "U2 – Experience + Innocence Tour" 2018. Es Devlin. <https://esdevlin.com/work/u2-experience-innocence>
- fig. 49: Greenwald, Victoria. "What Beyonce Taught Me At The Formation Tour" June 6, 2017. Forever Twenty Somethings. <https://forevertwentythings.com/beyonce-taught-formation-tour/>
- fig. 50: Devlin, Es. "U2 – Experience + Innocence Tour" 2018. Es Devlin. <https://esdevlin.com/work/u2-experience-innocence>
- fig. 51: "The Weeknd, After Hours til Dawn Tour". 2022. Pixmob. <https://www.pixmob.com/projects/detail/pixmob-the-weeknd>
- fig. 52: Devlin, Es. "U2 – Experience + Innocence Tour" 2018. Es Devlin. <https://esdevlin.com/work/u2-experience-innocence>
- fig. 53: Mondiale Media. "Jay-Z & Beyonce". 2018. Issuu. https://issuu.com/mondiale/docs/tpiaug18_digitalr/s/8261
- fig. 54: Devlin, Es. "The Brit Awards" 2015. Es Devlin. <https://esdevlin.com/work/the-brit-awards-2015>
- fig. 55: Ariana Grande – Sweatener World Tour. Youtube, 1:00. Posted Feburaqry 2 2021. <https://www.youtube.com/watch?v=2XJSgJkWoYl>
- fig. 56: Stufish. "Abba Arena". Stufish Entertainment Architects. <https://stufish.com/project/abba-voyage/>
- fig. 57: Luke Halls Studio. "Dua Lipa's Future Nostalgia World Tour". Notch. <https://www.notch.one/portfolio/dua-lipa-future-nostalgia/>
- fig. 58: Buckley, Keanen. "U2 Stage Vancouver". 2015. Twitter. <https://twitter.com/u2fanlife/status/599097476998635520/photo/1>
- fig. 59: Mac, TJ. "Yellow – Coldplay @ National Stadium Singapore". Youtube, 1:53. Posted March 31, 2017. <https://www.youtube.com/watch?v=prvrlJNc8R4>
- fig. 60: Holmes, Chris. "Paul McCartney One on One Tour. 2023. Insta360. <https://blog.insta360.com/paul-mccartney-chris-holmes-mettle-insta360-one/>
- fig. 61: "Wembley Stadium Harry Styles, Love On Tour. A View From My Seat. <https://aview-frommyseat.co.uk/photo/223583/Wembley+Stadium/section-226/row-7/seat-298/>
- fig. 62: DiSaverio, Rebecca. "Billie Eilish is 'Happier than Ever' at Madison Square Garden". The Ticker. March 4, 2022. <https://theticker.org/6294/arts/billie-eilish-is-happier-than-ever-at-madison-square-garden/>
- fig. 63: Ariana Grande – Sweatener World Tour. Youtube, 10:20. Posted Feburaqry 2 2021. <https://www.youtube.com/watch?v=2XJSgJkWoYl>
- fig. 64: Remogna, Daniela. "A Sky Full of Stars – Coldplay Live London Wembley". 2016. Youtube. <https://www.youtube.com/watch?v=fMmPGzwOonQ>
- fig. 65: Dingman, Leah. "Diagram of Typical Layout for Thrust Stage". Digital Drawing. 2023.
- fig. 66: Devlin, Es. "U2 – Experience + Innocence Tour" 2018. Es Devlin. <https://esdevlin.com/work/u2-experience-innocence>
- fig. 67: Devlin, Es. "U2 – Experience + Innocence Tour" 2018. Es Devlin. <https://esdevlin.com/work/u2-experience-innocence>
- fig. 68: Devlin, Es. "U2 – Experience + Innocence Tour" 2018. Es Devlin. <https://esdevlin.com/work/u2-experience-innocence>
- fig. 69: CassStudio6. "Center Stage". Word Press. <https://cassstudio6.wordpress.com/types/>
- fig. 70: Dingman, Leah. "Section of center stage showing blocked sight-lines". Digital Drawing. 2023.
- fig. 71: Goodman, Kris. "Take That Wonderland Live" 2017. Theatre Crafts. <https://www.theatrecrafts.com/pages/home/shows/take-wonderland-live/>
- fig. 72: Schubert, Alyssa. "How The Music Industry is Becoming More Friendly" 2022. The Crimson White. <https://thecrimsonwhite.com/98424/culture/how-the-music-industry-is-becoming-more-eco-friendly/>
- fig. 73: Ellis, Aman. "Eric Prydz Epic 5.0: 18 insanely amazing photos" 2017. DJmag. <https://djmag.com/news/eric-prydz-epic-50-insanely-amazing-photos>
- fig. 74: Grella, George. "Pierre Boulez illuminated in time and space at the Park Avenue Armory" 2017. New York Classical Review. <https://newyorkclassicalreview.com/2017/10/pierre-boulez-illuminated-in-time-and-space-at-the-park-avenue-armory/>
- fig. 75: Devlin, Es. "Kanye West & Jay-Z" 2011. Es Devlin. <https://esdevlin.com/work/kanye-jay-z>

- fig. 76: Yalcinkaya, Günseli. "Drakes super democratic tour features 200 drones and a flying Ferrari" 2018. Dezeen. <https://www.dezeen.com/2018/11/30/drake-migos-tour-willo-perron-set-design-drones-flying-ferrari/>
- fig. 77: 70. Chin, Mallory. "Go Behind the Design of Kanye West Saint Paolo Tour" 2016. Hypebeast. <https://hypebeast.com/2016/11/interiors-kanye-west-saint-pablo-tour-creative-inspiration>
- fig. 78: Shackell, James. "The day the music died: Eurovision's 13 worst acts of all time" 2015. The Good Time. <https://www.intrepidtravel.com/adventures/eurovision-worst-acts/>
- fig. 79: Devlin, Es. "Adele - World Arena Tour" 2016. Es Devlin. <https://esdevlin.com/work/adele-world-tour>
- fig. 80: Devlin, Es. "Kanye West & Jay-Z" 2011. Es Devlin. <https://esdevlin.com/work/kanye-jay-z>
- fig. 81: Devlin, Es. "Kanye West & Jay-Z" 2011. Es Devlin. <https://esdevlin.com/work/kanye-jay-z>
- fig. 82: Devlin, Es. "Muse – The Resistance Tour" 2009. Es Devlin. <https://esdevlin.com/work/muse>
- fig. 83: Baumann, Nicole. "Show Review: Arcade Fire @ The Frank Erwin Center: 2017. Austin Town Hall. <https://austintownhall.com/2017/10/02/show-review-arcade-fire-the-frank-erwin-center-0927/>
- fig. 84: Larmann, Ralph. "MA meets Adele" 2016. MA lighting. <https://www.malighting.com/news/article/ma-meets-adele-472/> "Simply Unbelievable..." 2013. U2. <https://www.u2.com/news/title/simply-unbelievable/>
- fig. 85: Borland, Kevin. "Celine Dion Stage Setup at the Verizon Center" 2014. Flickr. <https://www.flickr.com/photos/kevinborland/2842392724/in/photostream/> "Showcast with Bianca Ingresso and Alice Stenlof". <https://tourn.com/news/showcast-with-bianca-ingrosso-and-alice-stenlof>
- fig. 86: Cohen, Jerm. "Childish Gambino" 2019. Riff Magazine. <https://riffmagazine.com/festivals/outside-lands-20190810/> "Adele stopped the concert" 2017. Getty Images. <https://www.mirror.co.uk/3am/celebrity-news/adele-dedicates-song-fan-who-10013935>
- fig. 87: Larmann, Ralph. "MA meets Adele" 2016. MA lighting. <https://www.malighting.com/news/article/ma-meets-adele-472/> "Simply Unbelievable..." 2013. U2. <https://www.u2.com/news/title/simply-unbelievable/>
- fig. 88: Rivas, Samuel. "DMX at E11EVEN Saturdays" 2017. World Redeye. <https://worldredeye.com/2017/03/dmx-e11even-saturdays/>
- fig. 89: Dingman, Leah. "Diagram of Typical Layout for Center Stage". Digital Drawing. 2023.
- fig. 90: Devlin, Es. "Adele - World Arena Tour" 2016. Es Devlin. <https://esdevlin.com/work/adele-world-tour>
- fig. 91: Devlin, Es. "Adele - World Arena Tour" 2016. Es Devlin. <https://esdevlin.com/work/adele-world-tour>
- fig. 92: Devlin, Es. "Adele - World Arena Tour" 2016. Es Devlin. <https://esdevlin.com/work/adele-world-tour>
- fig. 93: Sindrey, Curtis. "Wilco performs at Budweiser Stage in Toronto" 2022. Aesthetic Magazine. <https://aestheticmagazinetoronto.com/2022/08/19/photos-wilco-bahamas-kathleen-edwards-budweiser-stage-toronto/toronto-on-aug-18-wilco-performs-at-budweiser-stage-in-to-3/>
- fig. 94: Sindrey, Curtis. "Wilco performs at Budweiser Stage in Toronto" 2022. Aesthetic Magazine. <https://aestheticmagazinetoronto.com/2022/08/19/photos-wilco-bahamas-kathleen-edwards-budweiser-stage-toronto/toronto-on-aug-18-wilco-performs-at-budweiser-stage-in-to-3/>
- fig. 95: Sindrey, Curtis. "Wilco performs at Budweiser Stage in Toronto" 2022. Aesthetic Magazine. <https://aestheticmagazinetoronto.com/2022/08/19/photos-wilco-bahamas-kathleen-edwards-budweiser-stage-toronto/toronto-on-aug-18-wilco-performs-at-budweiser-stage-in-to-3/>
- fig. 96: Harris, Amy. "How Travis Scott's \$5 million Solo Stage, et time may have contributed to Astroworld Festival Deaths" 2021. Variety. <https://variety.com/2021/music/news/travis-scott-astroworld-stage-deaths-1235106568/>
- fig. 97: Harris, Amy. "How Travis Scott's \$5 million Solo Stage, et time may have contributed to Astroworld Festival Deaths" 2021. Variety. <https://variety.com/2021/music/news/travis-scott-astroworld-stage-deaths-1235106568/>
- fig. 98: Harris, Amy. "How Travis Scott's \$5 million Solo Stage, et time may have contributed to Astroworld Festival Deaths" 2021. Variety. <https://variety.com/2021/music/news/travis-scott-astroworld-stage-deaths-1235106568/>
- fig. 99: Deville, Chirs. "Watch the 1975 Play Three Being Funn y In A Foreign Language Songs Live For The First Time" 2022. Stereogum. <https://www.stereogum.com/2205076/the-1975-at-their-very-best-tour-kickoff/news/>

- fig. 100: Deville, Chirs. "Watch the 1975 Play Three Being Funn y In A Foreign Language Songs Live For The First Time" 2022. Stereogum. <https://www.stereogum.com/2205076/the-1975-at-their-very-best-tour-kickoff/news/>
- fig. 101: Deville, Chirs. "Watch the 1975 Play Three Being Funn y In A Foreign Language Songs Live For The First Time" 2022. Stereogum. <https://www.stereogum.com/2205076/the-1975-at-their-very-best-tour-kickoff/news/>
- fig. 102: "The Art of Bloom." The Art of Bloom, accessed June 3, 2023, <https://theartof-bloom.com>.
- fig. 103: "Van Gogh: The Immersive Experience," accessed June 3, 2023, <https://www.vangoghexhibit.ca>.
- fig. 104: Devlin, Es. "Forest of Us" 2018. Es Devlin. <https://esdevlin.com/work/forest-of-us>
- fig. 105: "The Art of Bloom." The Art of Bloom, accessed June 3, 2023, <https://theartof-bloom.com>.
- fig. 106: "The Art of Bloom." The Art of Bloom, accessed June 3, 2023, <https://theartof-bloom.com>.
- fig. 107: "The Art of Bloom." The Art of Bloom, accessed June 3, 2023, <https://theartof-bloom.com>.
- fig. 108: "The Art of Bloom." The Art of Bloom, accessed June 3, 2023, <https://theartof-bloom.com>.
- fig. 109: "Van Gogh: The Immersive Experience," accessed June 3, 2023, <https://www.vangoghexhibit.ca>.
- fig. 110: "Van Gogh: The Immersive Experience," accessed June 3, 2023, <https://www.vangoghexhibit.ca>.
- fig. 111: "Van Gogh: The Immersive Experience," accessed June 3, 2023, <https://www.vangoghexhibit.ca>.
- fig. 112: "Van Gogh: The Immersive Experience," accessed June 3, 2023, <https://www.vangoghexhibit.ca>.
- fig. 113: Devlin, Es. "Forest of Us" 2018. Es Devlin. <https://esdevlin.com/work/forest-of-us>
- fig. 114: Devlin, Es. "Forest of Us" 2018. Es Devlin. <https://esdevlin.com/work/forest-of-us>
- fig. 115: Devlin, Es. "Forest of Us" 2018. Es Devlin. <https://esdevlin.com/work/forest-of-us>
- fig. 116: Devlin, Es. "Forest of Us" 2018. Es Devlin. <https://esdevlin.com/work/forest-of-us>
- fig. 117: Mazur, Kevin. "Projects and Stage Lights Provide a Golden Glow During the Fearless era". 2023. Getty Images.
- fig. 118: Mazur, Kevin. "Swift uses a Moss-Covered Piano for Songs During this Set". 2023. Getty Images.
- fig. 119: Dingman, Leah. "Diagram Outlining the Timeline of a Typical Arena Sized Concert". Digital Drawing. 2023.
- fig. 120: Mothsauce. "Hockey to Concert Changeover". Youtube. Posted Novemeber 21, 2016. <https://www.youtube.com/watch?v=SSjbmj5e0w8>
- fig. 121: Dingman, Leah. "Scotia Bank Calendar for March 2023". Digital Drawing. 2023.
- fig. 122: Yaregal, Bizu. "Labrinth - Something's Got To Give". Euphoriazine. September 27, 2019. <https://www.euphoriazine.com/blog/2019/09/music/tracks-labrinth-somethings-got-to-give/>
- fig. 123: Dingman, Leah. "Tiered Stage Vignette Section". Digital Drawing. 2023.
- fig. 124: Dingman, Leah. "Tiered Stage Vignette". Digital Drawing. 2023.
- fig. 125: Dingman, Leah. "Two Triangle Stage Vignette Section". Digital Drawing. 2023.
- fig. 126: Dingman, Leah. "Two Triangle Stage Vignette". Digital Drawing. 2023.
- fig. 127: Dingman, Leah. "Wall Stage Vignette Section". Digital Drawing. 2023.
- fig. 128: Dingman, Leah. "Wall Stage Vignette". Digital Drawing. 2023.
- fig. 129: Dingman, Leah. "Two Height Backdrop Stage Vignette Section". Digital Drawing. 2023.
- fig. 130: Dingman, Leah. "Two Height Backdrop Stage Vignette". Digital Drawing. 2023.
- fig. 131: Dingman, Leah. "Roof Stage Vignette Section". Digital Drawing. 2023.
- fig. 132: Dingman, Leah. "Roof Stage Vignette". Digital Drawing. 2023.
- fig. 133: Dingman, Leah. "Stair Stage Vignette Section". Digital Drawing. 2023.
- fig. 134: Dingman, Leah. "Stair Stage Vignette". Digital Drawing. 2023.
- fig. 135: Dingman, Leah. "Tilted Roof Stage Vignette Section". Digital Drawing. 2023.
- fig. 136: Dingman, Leah. "Tilted Roof Stage Vignette". Digital Drawing. 2023.

- fig. 137: Dingman, Leah. "Two Tilted Roofs Stage Vignette Section". Digital Drawing. 2023.
- fig. 138: Dingman, Leah. "Two Tilted Roofs Stage Vignette". Digital Drawing. 2023.
- fig. 139: Dingman, Leah. "Wing Stage Vignette Section". Digital Drawing. 2023.
- fig. 140: Dingman, Leah. "Wing Stage Vignette". Digital Drawing. 2023.
- fig. 141: Dingman, Leah. "Connected Runway Stage Vignette Section". Digital Drawing. 2023.
- fig. 142: Dingman, Leah. "Connected Runway Stage Vignette". Digital Drawing. 2023.
- fig. 143: Dingman, Leah. "Circle Runway Stage Vignette Section". Digital Drawing. 2023.
- fig. 144: Dingman, Leah. "Circle Runway Stage Vignette". Digital Drawing. 2023.
- fig. 145: Dingman, Leah. "Tired Cutting Through Audience Stage Vignette Section". Digital Drawing. 2023.
- fig. 146: Dingman, Leah. "Tired Cutting Through Audience Stage Vignette". Digital Drawing. 2023.
- fig. 147: Dingman, Leah. "Block Stage Vignette Section". Digital Drawing. 2023.
- fig. 148: Dingman, Leah. "Block Stage Vignette". Digital Drawing. 2023.
- fig. 149: Dingman, Leah. "Floating Block Stage Vignette Section". Digital Drawing. 2023.
- fig. 150: Dingman, Leah. "Floating Block Stage Vignette". Digital Drawing. 2023.
- fig. 151: Dingman, Leah. "The Wall Stage Vignette Section". Digital Drawing. 2023.
- fig. 152: Dingman, Leah. "The Wall Stage Vignette". Digital Drawing. 2023.
- fig. 153: Dingman, Leah. "The Floating Box Stage Vignette Section". Digital Drawing. 2023.
- fig. 154: Dingman, Leah. "The Floating Box Stage Vignette". Digital Drawing. 2023.
- fig. 155: Dingman, Leah. "Three Covered Walkways Stage Vignette Section". Digital Drawing. 2023.
- fig. 156: Dingman, Leah. "Three Covered Walkways Stage Vignette". Digital Drawing. 2023.
- fig. 157: Dingman, Leah. "The Frame Stage Vignette Section". Digital Drawing. 2023.
- fig. 158: Dingman, Leah. "The Frame Stage Vignette". Digital Drawing. 2023.
- fig. 159: Dingman, Leah. "The Center Stage with Varied Height Walls Section". Digital Drawing. 2023.
- fig. 160: Dingman, Leah. "The Center Stage with Varied Height Walls". Digital Drawing. 2023.
- fig. 161: Dingman, Leah. "The Center Hovered Stage Section". Digital Drawing. 2023.
- fig. 162: Dingman, Leah. "The Center Hovered Stage". Digital Drawing. 2023.
- fig. 163: Dingman, Leah. "The Middle Surrounding Wall Stage Section". Digital Drawing. 2023.
- fig. 164: Dingman, Leah. "The Middle Surrounding Wall Stage". Digital Drawing. 2023.
- fig. 165: Dingman, Leah. "The Floating Wall Stage Section". Digital Drawing. 2023.
- fig. 166: Dingman, Leah. "The Floating Wall Stage". Digital Drawing. 2023.
- fig. 167: Dingman, Leah. "The Center Wall Stage". Digital Drawing. 2023.
- fig. 168: Dingman, Leah. "The Tilted Roof Stage". Digital Drawing. 2023.
- fig. 169: Dingman, Leah. "The Three Covered Walkways Stage". Digital Drawing. 2023.
- fig. 170: Labrinth. "Jealous". Youtube video, 3:08. Posted October 31, 2014. <https://www.youtube.com/watch?v=50VWOBi0VFs>
- fig. 171: Labrinth. "Jealous". Youtube video, 0:05. Posted October 31, 2014. <https://www.youtube.com/watch?v=50VWOBi0VFs>
- fig. 172: Labrinth. "Jealous". Youtube video, 2:51. Posted October 31, 2014. <https://www.youtube.com/watch?v=50VWOBi0VFs>
- fig. 173: Anonymous. "Scotia Bank Arena John Mayer" 2023. <https://aviewfrommyseat.com/venue/Scotiabank+Arena/301/1/23/>
- fig. 174: Scotiabank Arena. "Concert Floor Map". <https://www.scotiabankarena.com>
- fig. 175: Dingman, Leah. "Diagram Showing placement of stage elements, speakers, and lights for Labrinth's song "Jealous"". Digital Drawing. 2023.
- fig. 176: Dingman, Leah. "Diagram Showing floor plan of Scotia Bank Arena". Digital Drawing. 2023.

- fig. 177: Dingman, Leah. "3D Model Images showing sightlines for the song "Jealous"". Digital Drawing. 2023.
- fig. 178: Dingman, Leah. "Plan of stage for Labrinth's song "Jealous"". Digital Drawing. 2023.
- fig. 179: Dingman, Leah. "Front Elevation of stage for Labrinth's song "Jealous"". Digital Drawing. 2023.
- fig. 180: Dingman, Leah. "Side Elevation of stage for Labrinth's song "Jealous"". Digital Drawing. 2023.
- fig. 181: Dingman, Leah. "Render showing how the song "Jealous" will open". Digital Drawing. 2023.
- fig. 182: Dingman, Leah. "Render showing how the song "Jealous" will open". Digital Drawing. 2023.
- fig. 183: Dingman, Leah. "Render for the song "Jealous"". Digital Drawing. 2023.
- fig. 184: Dingman, Leah. "Render for the song "Jealous"". Digital Drawing. 2023.
- fig. 185: Dingman, Leah. "Fabric Test". Photograph. 2023.
- fig. 186: Dingman, Leah. "Light Behind Fabric". Photograph. 2023.
- fig. 187: Dingman, Leah. "Light in front of Fabric". Photograph. 2023.
- fig. 188: Dingman, Leah. "Fabric Falling". Photograph. 2023.
- fig. 189: Dingman, Leah. "Hanging Fabric Stage". Digital Drawing. 2023.
- fig. 190: Dingman, Leah. "Falling Fabric Stage". Digital Drawing. 2023.
- fig. 191: Dingman, Leah. "Wind Blowing Fabric Stage". Digital Drawing. 2023.
- fig. 192: Dingman, Leah. "Fabric Encompassing the Stage". Digital Drawing. 2023.
- fig. 193: Dingman, Leah. "Fabric Acting as Roof Stage". Digital Drawing. 2023.
- fig. 194: Dingman, Leah. "Fabric as a Backdrop with Projections". Digital Drawing. 2023.
- fig. 195: Dingman, Leah. " "Jealous" stage logistics, showing the steps for the set-up process.". Digital Drawing. 2023.
- fig. 196: Labrinth. "When I R.I.P.". Youtube video, 0:28. Posted August 31, 2020. <https://www.youtube.com/watch?v=OsD1SJKtO9U>.
- fig. 197: Labrinth. "When I R.I.P.". Youtube video, 0:14. Posted August 31, 2020. <https://www.youtube.com/watch?v=OsD1SJKtO9U>.
- fig. 198: Labrinth. "When I R.I.P.". Youtube video, 2:28. Posted August 31, 2020. <https://www.youtube.com/watch?v=OsD1SJKtO9U>.
- fig. 199: Breakfast Television. "You don't want to miss the food and concert lineup at Budweiser Stage". <https://www.breakfasttelevision.ca/videos/you-dont-want-to-miss-the-food-and-concert-lineup-at-budweiser-stage/>
- fig. 200: Ticketmaster "Budweiser Floor Chart". <https://www.ticketmaster.ca/budweiser-stage-tickets-toronto/venue/131073?tab=seatingCharts>
- fig. 201: Dingman, Leah. "Diagram showing placement of stage elements, speakers, and lights for Labrinth's song "When I R.I.P.". Digital Drawing. 2023.
- fig. 202: Dingman, Leah. "Floor plan of Budweiser Stadium". Digital Drawing. 2023.
- fig. 203: Dingman, Leah. "3D Modeled Images of sightlines for the song "When I R.I.P.". Digital Drawing. 2023.
- fig. 204: Dingman, Leah. Plan of stage for Labrinth's song "When I R.I.P.". Digital Drawing. 2023.
- fig. 205: Dingman, Leah. "Front Elevation of stage for Labrinth's song "When I R.I.P.". Digital Drawing. 2023.
- fig. 206: Dingman, Leah. "Section of stage for Labrinth's song "When I R.I.P.". Digital Drawing. 2023.
- fig. 207: Dingman, Leah. "Opening render for Labrinth's song "When I R.I.P.". Digital Drawing. 2023.
- fig. 208: Dingman, Leah. "Render for Labrinth's song "When I R.I.P." as the screens begin to move up". Digital Drawing. 2023.
- fig. 209: Dingman, Leah. "Render for Labrinth's song "When I R.I.P." with the screens fully up". Digital Drawing. 2023.
- fig. 210: Dingman, Leah. "Render for Labrinth's song "When I R.I.P.". Digital Drawing. 2023.
- fig. 211: Dingman, Leah. "Hanging fabric stage". Digital Drawing. 2023.
- fig. 212: Dingman, Leah. "Roof pulled down". Digital Drawing. 2023.
- fig. 213: Dingman, Leah. "Walkway used as screens". Digital Drawing. 2023.

- fig. 214: Dingman, Leah. "Hanging objects from walkway". Digital Drawing. 2023.
- fig. 215: Dingman, Leah. "Walkway pulled up". Digital Drawing. 2023.
- fig. 216: Dingman, Leah. "Walkway tilted". Digital Drawing. 2023.
- fig. 217: Dingman, Leah. "'When I R.I.P.' stage logistics, showing the steps for the set-up process.". Digital Drawing. 2023.
- fig. 218: Labrinth. "The Producer". YouTube video. Posted November 21 2019. <https://www.youtube.com/watch?v=dwaFlyWXCzc>
- fig. 219: Labrinth. "Sexy MF". Youtube video. Posted November 21, 2019. <https://www.youtube.com/watch?v=-wm6hX1cHbc>
- fig. 220: "Modern Classics: Labrinth's Sexy MF" July 6, 2023. Switched On Pop. <https://switchedonpop.com/episodes/labrinth-sexy-mf-sam-sanders-modern-classics>
- fig. 221: "Echo Beach". Trip Advisor. https://www.tripadvisor.ca/Attraction_Review-g155019-d6352304-Reviews-TD_Echo_Beach-Toronto_Ontario.html
- fig. 222: "Echo Beach Floor Chart". Rate Your Seats. <https://www.rateyourseats.com/rbc-echo-beach/seating/seating-chart>
- fig. 223: Dingman, Leah. "Diagram showing placement of stage elements, speakers, and lights for Labrinth's song "Sexy MF"". Digital Drawing. 2023.
- fig. 224: Dingman, Leah. "Floor Plan of Echo Beach". Digital Drawing. 2023.
- fig. 225: Dingman, Leah. "3D Modeled Images showing sightlines for song "Sexy MF" ". Digital Drawing. 2023.
- fig. 226: Dingman, Leah. "Plan of stage for Labrinth's song "Sexy MF"". Digital Drawing. 2023.
- fig. 227: Dingman, Leah. "Front Elevation of stage for Labrinth's song "Sexy MF"". Digital Drawing. 2023.
- fig. 228: Dingman, Leah. "Side Elevation of stage for Labrinth's song "Sexy MF"". Digital Drawing. 2023.
- fig. 229: Dingman, Leah. "Render for Labrinth's song "Sexy MF"". Digital Drawing. 2023.
- fig. 230: Dingman, Leah. "Render for Labrinth's song "Sexy MF"". Digital Drawing. 2023.
- fig. 231: Dingman, Leah. "Render for Labrinth's song "Sexy MF" showing projections on the roof". Digital Drawing. 2023.
- fig. 232: Dingman, Leah. "Render for Labrinth's song "Sexy MF" showing projections on the roof". Digital Drawing. 2023.
- fig. 233: Dingman, Leah. "Render for Labrinth's song "Sexy MF" showing projections on the roof". Digital Drawing. 2023.
- fig. 234: Dingman, Leah. "Tilted roof". Digital Drawing. 2023.
- fig. 235: Dingman, Leah. "Smaller roof only over performer". Digital Drawing. 2023.
- fig. 236: Dingman, Leah. "Roof cut in two". Digital Drawing. 2023.
- fig. 237: Dingman, Leah. "Roof curved over performer". Digital Drawing. 2023.
- fig. 238: Dingman, Leah. "Roof creating backdrop and roof". Digital Drawing. 2023.
- fig. 239: Dingman, Leah. "Roof as just a backdrop". Digital Drawing. 2023.
- fig. 240: Dingman, Leah. "'Sexy MF' stage logistics, showing the steps for the set-up process.". Digital Drawing. 2023.

CHAPTER ONE: INTRODUCTION & METHODOLOGY

As I stand shoulder to shoulder in a crowd that seems to have no end, anticipation and excitement fills the space between us all. In this moment, I can't help but marvel at the transformative power that concert stage design holds. The influence that architecture and design have when it comes to live music performance has the ability to transport individuals beyond the confines of their physical bodies, creating an ethereal experience that resonates deep within their souls. In this thesis, I dive into the realm of concert stage design, exploring how architecture aids in crafting immersive experiences that elevate and change the audience's emotions.

Architecture can play a pivotal role in amplifying the overall experience for the audience and performer by adding visuals to pair with the music. The stage design becomes an extension of the artist's vision, a visual aspect to the already produced artwork that is their music, something that simple smoke and lights cannot do. Through careful consideration of spatial planning, lighting techniques, acoustics, and visual elements, architects and designers have the power to shape the very essence of the concert venue, converting it into a new realm of possibilities and wonder.

In this thesis, I will be exploring the intense impact of concert stage design on an audience's experience and emotional entanglement with the performer. This research will first start by looking into the evolution of concerts in North America with a focus on the boom of rock concerts in the 1980's. Then analyzing the pivotal concert materials; time, light, scale, space, sound, and the audience which all need to be carefully designed and connected to contribute to the immersive experience. The next chapter will discuss the interplay of order and complexity in stage layout by analyzing different types of stages considering the strength and limitation of them and how they influence the audience's perception and engagement. I will also discuss the expectation of the spectacle; how architectural elements play a role in the visual and emotional impact of a performance. Additionally, I will be exploring the logistics of concert design, highlighting the before and after timeline of a concert. The final chapter of this thesis will showcase my own design work, including three distinct stages that evoke different emotions and incorporate various architectural elements. Each stage reflects careful consideration of time, light, scale, space, sound, and the audience. Through the use of 3D modeling and visual renders I explore the concepts and design processes behind these stages, highlighting how architectural decisions can shape the emotional landscape of a concert.

With this research, I seek to contribute to the broader discourse on the fusion of architecture, live music, and emotion, envisioning new possibilities that will push the boundaries of concert stage design and revolutionize the way we experience live performances.

As I begin this journey into the world of concert stage design, I am filled with an eagerness to understand the immense potential architecture has to transform a venue into a spectacle for a single night. Let's dive into this captivating realm and start to blur the boundaries between live music and architecture, where the power of design can ignite a room into an unforgettable moment.

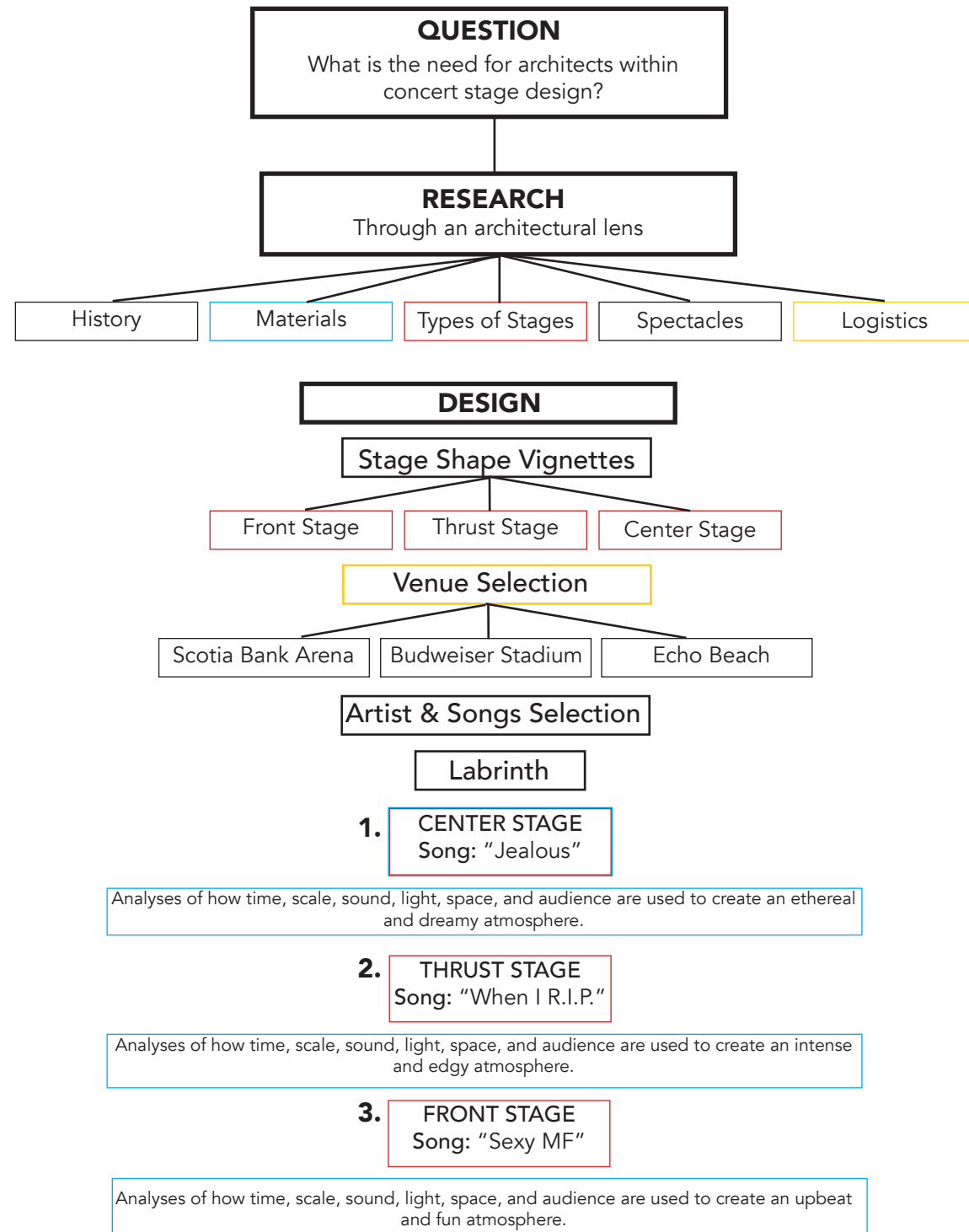


fig. 01: Methodology Diagram

METHODOLOGY

The architectural thesis methodology aims to address the pivotal role of architects in concert stage design and their potential to enhance the overall immersive experience for both the audience and performers. The thesis acknowledges the historical oversight of architects in the field, resulting in underdeveloped immersive concerts.

QUESTION:

This thesis began with a question: what is the need for architects within concert stage design? And how can architects help advance the knowledge within this area?

RESEARCH:

Research then was conducted through an architectural lens and looks at the history of concerts, the materials that make up a concert, the types of stages and their affects, what the exception of a spectacle is, and finally the logistics within a concert.

DESIGN:

Design began by creating stage shape vignettes that pushed the boundaries of typical front, thrust, and center stages. Each diagram is analyses for positives, negatives, and flexibility between songs.

From this, three stages, one front, thrust, and center were selected to accompany three different songs.

VENUE SELECTION:

Each song will be represented in a different venue that best suits the stage shape. Each venue is located in Toronto, Ontario as it is a hub for live music in Canada.

'Jealous' will be a center stage and be played in Scotia Bank Arena

'When I R.I.P.' will be a thrust stage and played in Budweiser Stadium

'Sexy MF' will be a front stage and played at Echo Beach

ARTIST & SONGS SELECTION:

Labrinth was selected as the artist to design for because he is an emerging artist without prior experience of touring. This allowed for the designs to take shape without the influence of what has been done before. His discography also has a wide range of songs with distinctly difference sounds that would reflect well with the different stage shapes.

CHAPTER TWO: A WALK THROUGH TIME & CONCERTS IN NORTH AMERICA

The evolution of a concert has changed from a religious event into an all-out experience for the audience.¹ The modern concert that we know today “was born in jazz halls in the early 1900s, and the evolution of the concert we see today has come from technological developments, growing fan bases, and more disposable income”.² Before the 1960s concerts tended to be casual, drop-in events and were often based on religious activities.³ The boom of rock and roll demanded the need for larger venues, advanced ticketing, and assigned seats. Power groups such as the Beatles made music more mainstream and an active part of social life, and people began to regularly attend the shows of their favorite bands. Youth culture shifted in the late 1950’s to “resist what had previously been perceived as the unavoidable responsibilities of adulthood and lead to a hedonistic responsibilities of adulthood, which was based around a display of spontaneous, exhibitionist, sexually vigorous and emotionally unconstrained behavior”.⁴ Rock music glorified its audience and was known to be “for the fans”. Unlike previous classical live shows where the performers play and await applause, rock and roll performances became more for the audience, including cheers, song request, and overall a lot of energy. It was thought that the rise of rock concerts and young audiences were inducing social breakdown in North America. The tension in rock audience history began with the notion that “audiences were managed props for big acts, signifiers of success, and autonomous entities pressing their own desires”.⁵ The relationship between the performer and audience has now become of equal importance and bands started to see that making a connection with the audience makes for a non-forgettable show.

1 “Evolution of the Concert.” Vocal Media. Accessed May 26, 2023. <https://vocal.media/beat/evolution-of-the-concert>.

2 “Evolution of the Concert”.

3 “Evolution of the Concert”.

4 Eric Holding, Mark Fisher: Staged Architecture (Chichester, West Sussex: Wiley-Academy, 2000).

5 <https://www.encyclopedia.com/humanities/encyclopedias-almanacs-transcripts-and-maps/rock-concert-audiences>



fig. 02: Jazz hall concert in early 1900s showing where modern concerts grew from.



fig. 03: Woodstock music festival played in Sullivan County, NY, 1969.

In August 1969, the first Woodstock took place, “inventing the modern music festival and creating a new audience for concerts with over 40,000 attendees”.⁶ The social element of Woodstock was an important development “tying partying, peace, and drugs to the idea of music”.⁷ Music festivals have continued to grow showing there is a feasible need for destination based shows with multiple acts each day.

By the 1970s the fan base of concert goers in North America had grown substantially and bands started experimenting with the sets and settings of their shows by adding elements beyond the music. Pink Floyd added light and laser performances to their concerts, adding a visual dimension to each show that complemented and enhanced the music.⁸

Concerts continued to evolve in the 1990s, embracing new elements to enhance the overall experience. Alongside the advancements in technology; lights, fashion, and added stage elements became key components to the concert spectacle.⁹ Visual effects became more elaborate, with dazzling light shows and synchronized lighting rigs illuminating the stage, elevating the immersive nature of the performance. The 1990s also saw the rise of new and influential genres, such as hip hop, metal, and punk, each bringing its own distinct concert experiences. Punk rock shows created a sense of raw energy within the audience and had intense mosh pits that emerged as a physical expression of the music. The 1990s brought in a wave of new concert dynamics, enabling the audience to connect with the performers in a visceral way.¹⁰

With the advancements in technology within the last 20 years, concerts have moved past being just a place to hear music, and into an all encompassing experience. With the added lights, visuals, and interactive elements within concerts it allows the audience to go through a concert in a completely new and unprecedented way. These elements break down the wall between performer and audience member, allowing the audience to fully participate and feel involved in the show.

⁶ “Evolution of the Concert.” Vocal Media. Accessed May 26, 2023. <https://vocal.media/beat/evolution-of-the-concert>.

⁷ “Evolution of the Concert”.

⁸ Edward Macan, *Rocking the Classics: English Progressive Rock and the Counterculture* (United Kingdom: Oxford University Press, 1997).

⁹ Steve Knopper, “How Concerts Shifted from Songs to Spectacles,” *The Washington Post*, May 24, 2014, accessed May 31, 2023, https://www.washingtonpost.com/entertainment/music/how-concerts-shifted-from-songs-to-spectacles/2014/05/22/ca521340-d6ce-11e3-8a78-8fe50322a72c_story.html.

¹⁰ Steve Knopper.



fig. 04: U2 concert using augmented reality, BOK Center, 2018.

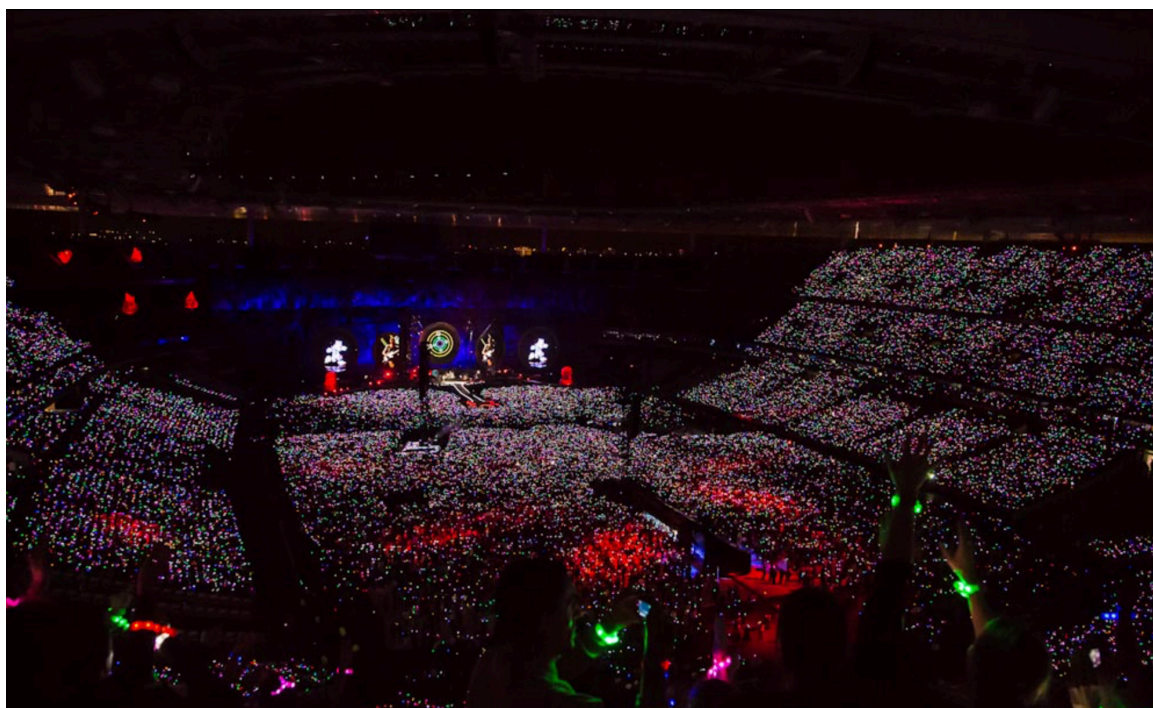


fig. 05: Coldplay concert showing audience light-up wristbands, 2022.

Similarly, the progression of lighting a concert or theatre has changed drastically over time from only using natural sunlight in the 1500's, to the advanced technology that is used now. Lighting design is a sophisticated art form, using an array of cutting-edge technologies, such as intelligent light systems, lasers, and LED displays to connect perfectly with the music during a concert. There must be a dynamic relationship between the lights and music to create a synchronized environment. This is executed by having well designed lights that complement and add a level of shock for the audience, in comparison to the lights merely being a way to see the performers as done for classical concerts. Simply changing the colour of the lights and changing their pulse can create a multi-sensory journey that can elevate a concert to a whole new level.

Advancement within the visuals of a concert have also developed significantly, with the use of video projections and mapping techniques. Stages have become dynamic canvases for artists to weave immersive narratives into. Huge LED screens, holographic projections, and intricate stage backdrops are a new mesmerizing aspect to almost all concerts. This can be understood when looking at the augmented reality spectacle forms that were part of U2's 2018 tour. When the audience members look through an app on their phones, superimposed AR images will appear on stage¹¹.

Technological advancements continue with the introduction of motion sensors, augmented reality, and virtual reality. These have pushed concerts into an almost unimaginable evening. These technologies have been implemented in live voting, crowd-controlled lights, and AR overlays that augment the stage with digital elements which empower the audience to shape and personalize the concert to them specifically.¹² During the 2022 Coldplay tour, every audience member was given a light wristband that would match the light show on stage.¹³ The viewers become co-creators, coexisting in a shared space of creativity and participation, which fosters a sense of belonging and connection with the artist on stage.

¹¹ Natashah Hitti, "Es Devlin creates augmented-reality avatar of Bono for U2's tour stage design," Dezeen, last modified May 9, 2018, accessed June 1, 2023, <https://www.dezeen.com/2018/05/09/es-devlin-augmented-reality-avatar-bono-u2-set-design/>.

¹² Xylobands, accessed June 1, 2023, <https://xylobands.com>.

¹³ Xylobands

CHAPTER TWO: CONCLUSION

The “A Walk Through Time and Concerts in North America” chapter highlights the evolution of concerts and emphasizes the significance of architecture in enhancing the overall concert experience for both the audience and performers. It draws attention to the lack of involvement of architects in this field, which has resulted in underdeveloped immersive concert experiences.

Initially, the chapter explores the historical development of concerts, showcasing how they have evolved over time. It discusses the introduction of new technologies, such as lighting and sound systems, which have transformed the way concerts are produced and experienced. However, despite these advancements, the chapter highlights a crucial gap in architectural input in concert stage design.

The overall argument of the chapter is that architecture plays a pivotal role in amplifying the concert experience by creating an immersive spectacle. Involving architects in the design process can lead to more creative and engaging concert environments. By integrating architectural elements and principles, concert stages can be transformed into captivating spaces that enhance the connection between the audience and performers, creating a more memorable and immersive experience for all involved.

CHAPTER THREE: CONCERT MATERIALS

Architectural materials can change the tone and feel of a space, from the warmth of all wood to concrete’s crisp clean lines that evoke a sense of power. In a similar sense, live music uses different materials to create an unforgettable experience for the audience, including light, time, scale, space, sound and the audience. These elements are treated in a similar way as traditional architectural materials and need to be carefully planned and linked to produce a captivating environment for the audience. A live concert is more than just a performance of music, it’s a multi-sensory experience that incorporates various materials to create an immersive and engaging experience for the audience. These elements of light, time, scale, space, sound and the audience are integral aspects of creating an immersive concert experience and need to work in unison with each other to be successful.¹

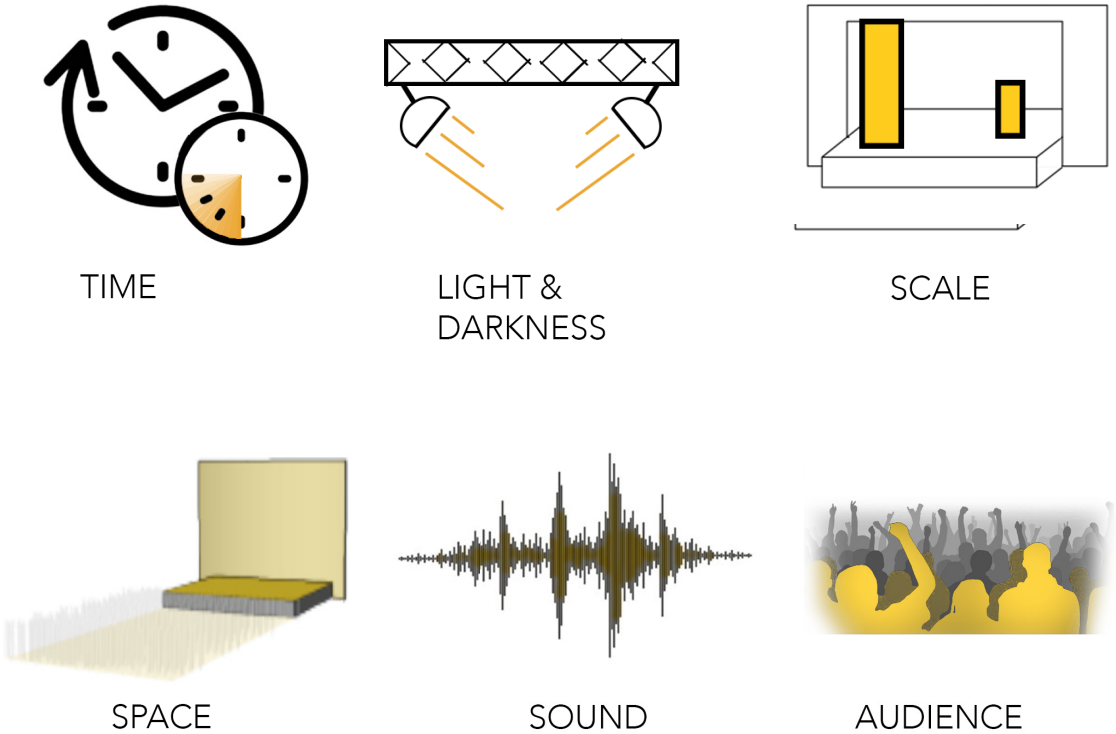


fig. 06: Visuals for each concert elements

¹ Critical Theory and Interaction Design (United Kingdom: MIT Press, 2018), 178.



fig. 07: Showing a perfectly timed concert where the lights and music are connected



fig. 08: The 1975 concert showing the timing of moody lights with the song, 2020



TIME

Time affects every level of a concert starting with the transportation and set-up of the stage, continuing with the actual concert, and finishing with the takedown of the stage. Each of these elements needs to be organized and planned perfectly for a concert to run smoothly and create a seamless experience for the audience. Time needs to be connected with the sound, lights, and audience so all these building materials work together in unison.

Live music concerts must be designed around segments of time, involving a “scripted sequence of events which is presented in a pre-determined order, that take the audience on a journey”.¹ The physical environment before the audience transforms to create an appropriate atmosphere that accompanies the performance of each song.² For traditional architecture time, is used in relation to the sun, and different times of day and year can be shown within a building. For live music, time is of the essence because the experience only has a set time frame, so every minute even second needs to be calculated and planned. Can architecture move in time? Daniel Libeskind believes “that architecture, the way it is produced and received, is very similar to music”.³ So, should the comparison between architecture and music stay in the theoretical sense, or can this be brought to the literal with live music concerts?

Concerts are time sensitive not only because of the connection between stage elements and music but also because of the set-up and takedown of the stage. This aspect of a concert is a complicated task and has to be well organized by a team of professionals.⁴ This team consists of local hands and traveling workers that are responsible for all aspects of the stage set-up.⁵ To ensure that everything is set up correctly and runs smoothly during the performance, timing is critical. The set-up process typically starts the morning of the concert, allowing the rigging team enough time to make adjustments to make up for the different sizes of venues. The timing of this set-up is crucial because any delays can have a domino effect on the start time of the concert. Similarly, taking down the stage after the concert is over is also a time-sensitive process. This process must be completed quickly and efficiently, as many venues have strict time limits for when the stage must be cleared.⁶

¹ Robert Kronenburg, *Live Architecture: Venues, Stages and Areas for Popular Music* (Abingdon, Oxon: Routledge, 2012), 4.

² Eric Holding, *Staged Architecture* (Chichester, West Sussex: Wiley-Academy, 2000), 17.

³ Gernot Böhme and Jean-Paul Thibaud, *The Aesthetics of Atmospheres*. (London: Routledge, Taylor & Francis Group, 2017).

⁴ “The Importance of Timing in Concert Production” Eventbrite UK, accessed April 16, 2023, <https://www.eventbrite.co.uk/blog/the-importance-of-timing-in-concert-production-ds00/>.

⁵ The Importance of Timing in Concert Production”.

⁶ The Importance of Timing in Concert Production”.

This is similar to the construction of traditional architectural buildings but differs because it also must include the deconstruction. Architecture focuses on the construction of a project but concert design must equal focus on how it can come apart and be transport to then be built again. This can also be seen in temporary structures for architectural expos which can be defined as “any space that is mobile or intended only to be used for a short period of time before it is demolished”.⁷ These structures are often responsive and adaptive to function and are used for expositions, conventions, and biennials.⁸ Concert design differs from these temporary structures because the construction needs to work in a cyclical movement, meaning it needs to continue to be built, unbuilt and re-built again, where as, temporary structures are only built once and then demolished.

Time is also related to the series of songs and corresponding set changes that happen during a concert. A concert is not a static environment, and the stage elements are meant to move and change throughout the evening. This need for flexibility and adaptation is why architects are needed within the design of concerts. Architects are able to understand how to modify an environment with the use of structural elements instead of the go to change of light colour and smoke. Stages can move and fold to change shape throughout a concert, and this adaptation is a necessary part of a concert. Reflecting back to what Libeskind said, architecture needs to unfold similarly like a song unfold, there needs to be a progression through a building that feel connected and thoughtful, this is similar to how a concert stage needs to be designed.

This level of timing goes hand in hand with when the actual show begins. From the first moment of the show to the end cue each second is scheduled with a sequence of events. The lights, music, and stage elements all need to be connected to achieve a uniform and immersive experience for the audience. This will also effect how the performer feels during the show. A well timed concert will add energy to the crowd which will help a performer feel more powerful and important. The highs of the lights need to happen at the exact moment when the song speeds up in tempo creating a monumental moment for the performer and audience.⁹ These moments are what keep the audience engaged and entertained, and what helps create a connection between the artists and listeners.

⁷ “Temporary Architecture & Architecture For the Temporary,” Future Landscapes (2012), accessed June 20, 2023, URL: <https://futurelandscapes.ca/articles-of-interest/2012/11/11/aydmor0qf0keauiz1bsmul4yp1pft2#:~:text=%3E,the%20community%20they%20enter%2C%20e.g..>

⁸ “Temporary Architecture & Architecture For the Temporary,”

⁹ Holding, 10.

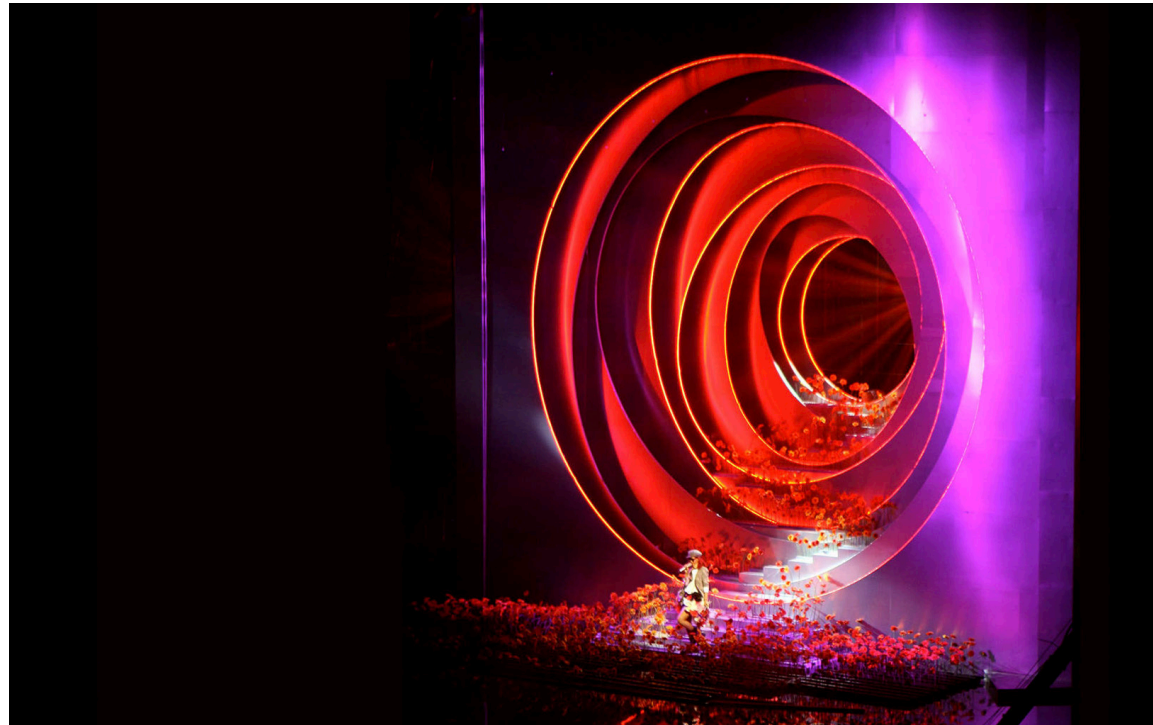


fig. 09: MTV music awards showing how lighting changes can create romance, 2010.

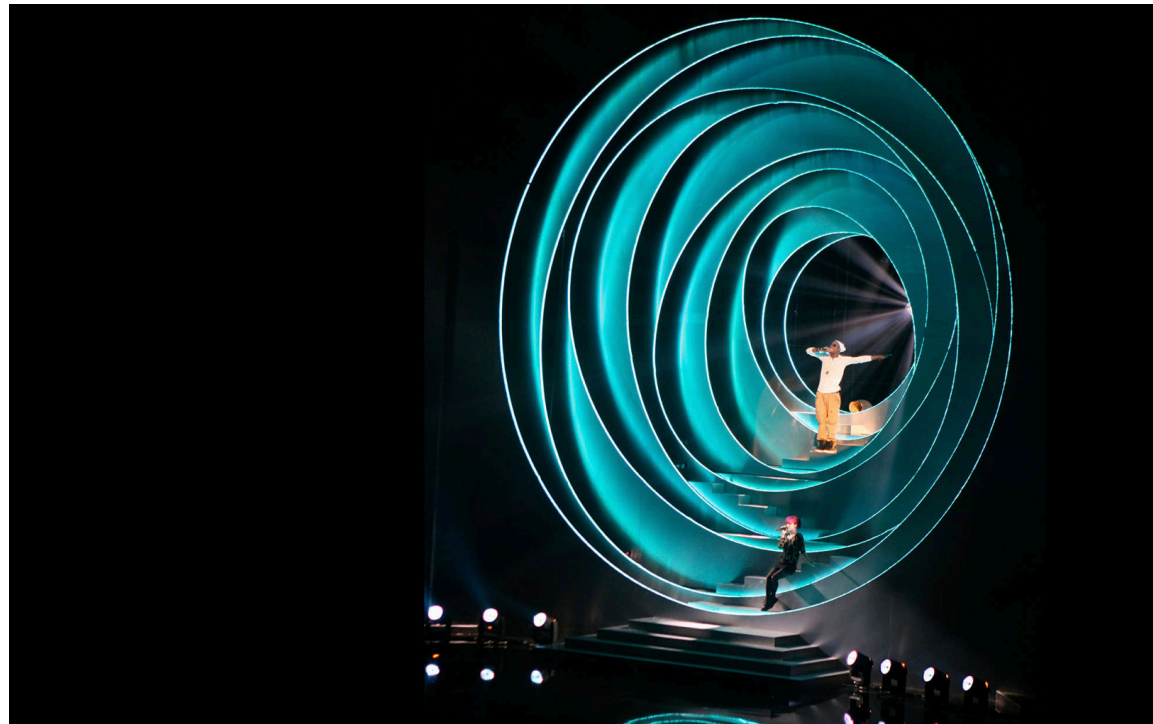
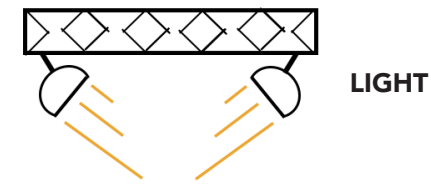


fig. 10: MTV music awards showing how the change in lighting now creates a more edgy feel, 2010.



Lights are used to transform a concert space by changing the atmosphere and thereby the audience's perception of the space and event. The connection of lights with time, sound, space, and the audience is a crucial aspect that can elevate the concert experience.

Just at the peak of a song's momentum, bright lights absorb the audience, letting them know they are all feeling the high together, and as the chorus of the song drops, the lights react, creating movement that is reflected in the audience as a symphony dancing sway begins.¹ When light is connected to sound, it is a direct connection to the audience, it unites people together and instead of 1000 single bodies, they become one.

Throughout history, lighting for stage design has shifted from the sun to candles, to gas, into what we know today as electric and modern lighting.² Lighting is used to create an atmosphere that encompasses the audience and can be used to shift their perspectives when needed. Lighting can change a room from a bright and safe environment into a dark and ominous one with the shift of a few light colours and intensities.³ Modern lighting now allow for stage design to experiment with color and focus creating complex lighting plots. LED lights and lighting consoles allows these limits to be pushed even further by having the lights instantly and repeatedly change.⁴ These lighting advancements are important elements of concert stage design and are used to push the overall concert themes forward. In the simplest way light allows us to see, visible wavelengths of light are required for us to see, which is an important part of going to visual performance.

In a similar way, lighting for a concert has gone from being quite generic to extremely precise and focused. Lighting originally was used as a way to simple see the performer on stage which progressed into spotlights, allowing darkness to play a role on the stage. With the use of simple smoke it allowed the traces of light to be seen, giving it an overall greater impact. Now with LED lights and advanced lighting techniques, light can be used in a precise way to not only show the performer but to highlight and work with the architectural set on stage.

1 Holding, 15.

2 <https://pragueyouththeatre.wordpress.com/2019/09/17/a-history-of-lighting-design-from-sunlight-to-stage-light/>

3 Richard Cadena, *Lighting and Sound for Concerts and Tours* (Burlington, MA: Focal Press, 2009).

4 Cadena.

Architects are needed in the process of lighting a concert because of the studied knowledge on artificial lights and the implications lights have on an environment. This knowledge goes beyond simple restaurant mood lighting and will elevate a concert past merely lighting so everything can be seen. Because of the complex nature of lighting a concert where the mood is continuously shifting, architects are well equipped to work with lighting engineers so they can design a suitable backdrop for the lights to act upon.

The architects needs to be able to work with a lighting engineer to facilitate a perfectly timed and interesting concert. The architects role is to create the backdrop for which the lights can act upon with the help and coordination of the lighting engineering.

Moving past just the necessity of viewing, stage lights are used to create a mood or craft an atmosphere for the audience and performer that usually supports the artist's story. A well crafted light show that is in unison with the stage elements will boost the performer up and enhance their performance quality. Lights also need to enhance and balance all the components of a stage performance. It helps create a focus area or a place that needs to be highlighted.⁵ Looking at MTV music awards performances in 2010, it can be understood how change in lighting types, colours and intensity can change the environment from romantic to edgy. Stage lighting design can create plausibility or a new reality to draw an audience into. The use of light colour, angles, intensity, and effect can completely transform a room and sculpt the performer to make them seem larger-than-life, drawing them into the foreground and setting them apart from a two-dimensional stage.⁶ These lighting techniques are enhanced by the stage set and these two elements need to work in conjunction. The stage set is designed as areas for the lights to hit and reflect, creating an interplay between the physical environment and the light's dynamics. The stage set acts as a canvas, allowing the designer to craft a visually captivating experience that complements the performance and amplifies its impact. The stage set and lighting design can come together like a symphony, and elevate the space not only for the audience but for the performer as well.

⁵ Jacob Fiss-Hobart, *Concert Production Techniques* (New York: Routledge, 2013), Scott Hunter Stark, *Live Sound Reinforcement: Mix Pro Audio Series* (Boston, MA: Cengage Learning, 2009),

⁶ Fiss-Hobart.

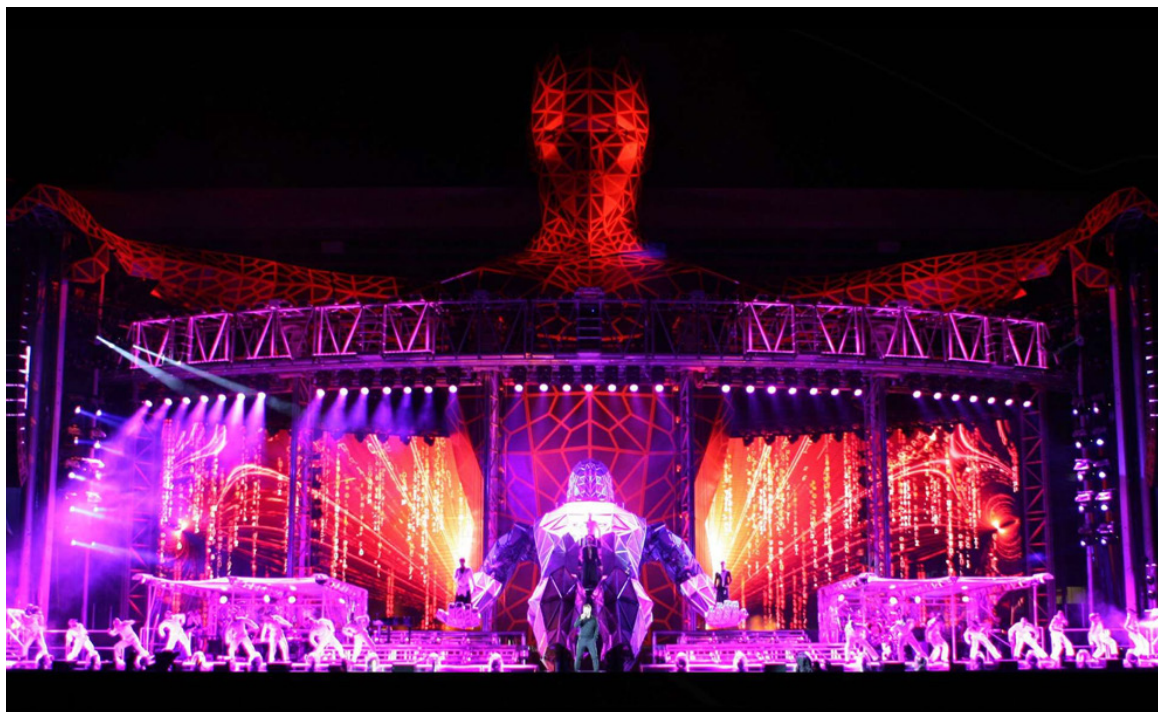


fig. 11: Take That Concert, 2011.

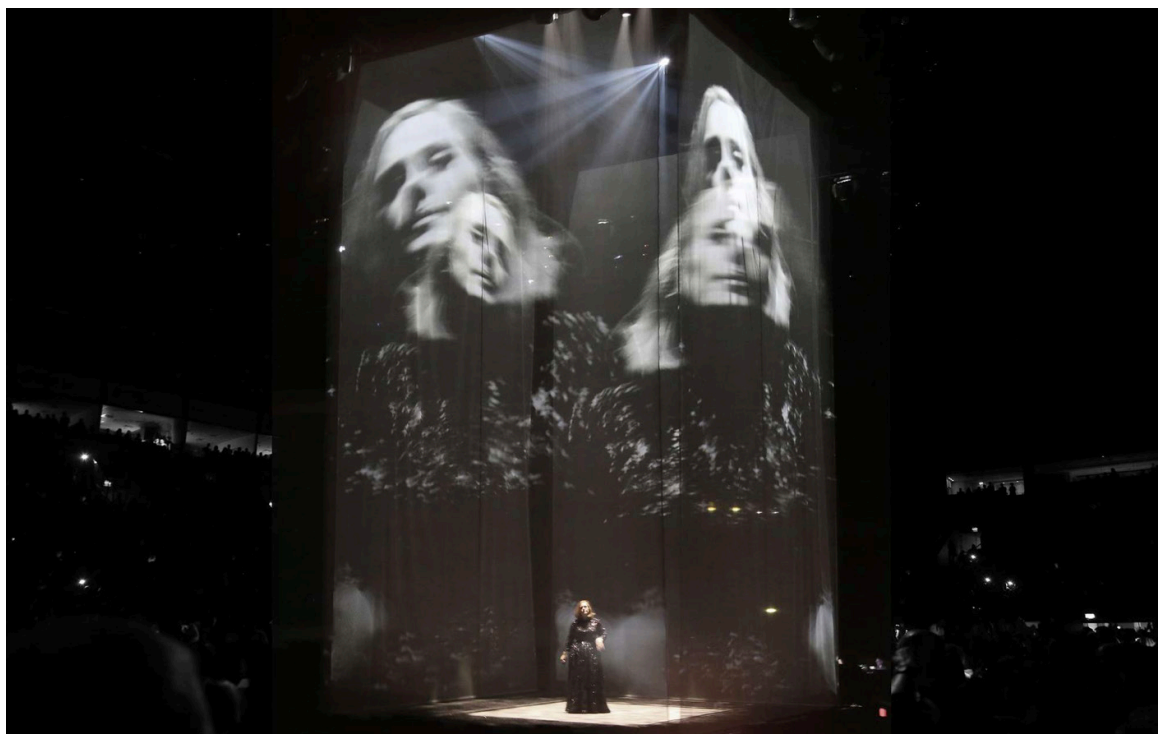
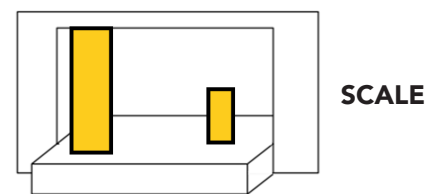


fig. 12: Adele Concert, 2016.



Scale can be understood in reference to different aspects of concert design including the scale of the venue, the scale of the stage within the venue and the scale of the elements on the stage. Scale itself is the ratio based on the relation of elements with each other and their surroundings along with being in harmony with the human body geometry.¹ Each of these play a role in pulling out different emotions in people and creating an overall captivating experience for the audience. This is similar in traditional architecture where the scale of the building, the scale of the interior elements such as ceiling heights, entryways, and rooms all effect the experience for the user.

The scale of the venue can drastically change the environment for the audience and performer. Concerts venue scales can range from 100 people at a local bar to 100 000 people at a large arena.² This is similar to how the scale of a building must be designed for the program it needs to hold. Architects must analyze the function of a building and determine how large the footprint needs to be. Similarly, for concert design the size of the venue needs to be an appropriate size to hold the wanted number of people and stage design so it feels cohesive. The scale of the concert venue is also impacted by the nature of the performer including the type of performance and draw of the crowd. Performers with a smaller audience needed, are matched with a smaller venue, but as the performances can be enhanced within the space, the possibility of growth is there, thus the need for a larger venue.

The scale of the stage within the venue must relate to the size of the venue, the number of

1 "The Psychology Behind Scale in Architecture" accessed July 4 2023. <https://www.re-thinkingthefuture.com/architectural-community/a5412-the-psychology-behind-scale-in-architecture/#>

2 Steve Harvey, "Concerts can create memories that last a lifetime," The Atlanta Journal-Constitution, July 10, 2019, sec. Living, <https://www.ajc.com/lifestyles/concerts-can-create-memories-that-last-lifetime/BBTfH3q43PJgUp9fjKefKl/>.

performers, and the type of performance being presented. This is similar to when architects are choosing the scale of rooms, ceilings entries etc. They need to feel appropriate for the building size and program use.³ A concert stage needs to do the same, and needs to be designed with the venue size and stage elements in mind.

The scale of the elements on the stage are crucial elements in creating the visual aesthetics for a concert. These can range from simple and minimalist to grand and elaborate, and they can significantly impact the overall feel and experience of the concert. With concerts only becoming larger and larger the size of the stage elements have become essentials to the designs. To make sure all seats still have something to look at and still feel connected and involved in the performance concert must use very large elements on the stage. This is similar to architects choosing the furniture that goes within a building, too small will look awkward and too large will take away from the buildings architecture.⁴

Two examples of similarly sized venues but different scale stages and stage elements is the "Take That" concert and "Adeles" concert. The "Take That" concert designed by Es Devlin which uses elaborate stage elements including a 60' robotic person, where as the "Adele" concert uses a small center stage with simple hangings for projections. These concerts have similar audience capacity yet create remarkably different shows because of the stage sizes and sizes of the elements on the stage.⁵

³ Heath Licklider, "Architectural Scale". United Kingdom: G. Braziller, 1966.

⁴ Heath Licklider.

⁵ Es Devlin, "Take That - Progress Stadium Tour" (2011), Es Devlin, accessed June 21, 2023, <https://esdevlin.com/work/take-that-progress>.

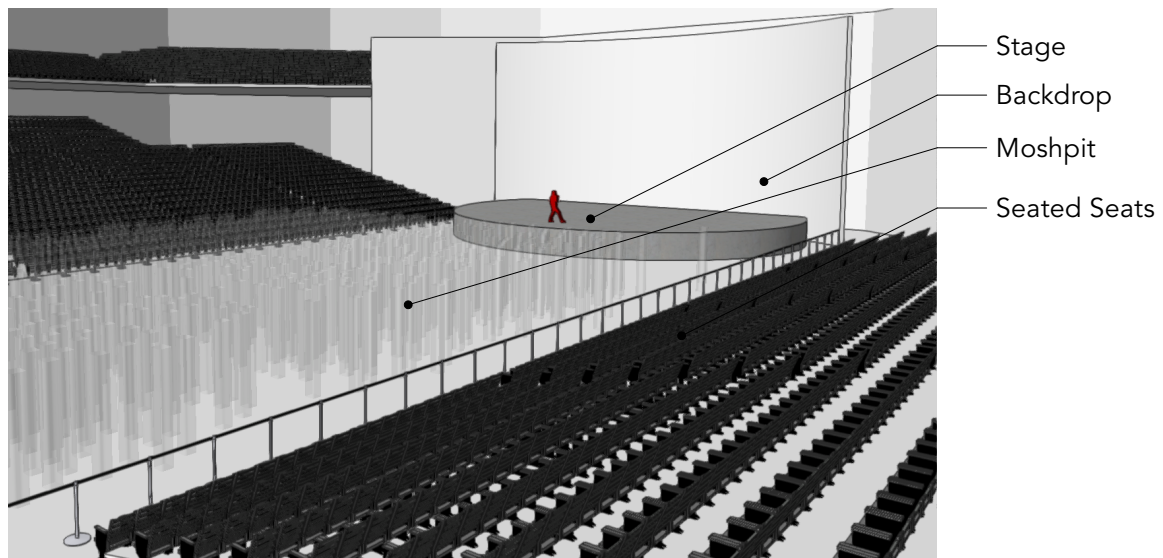
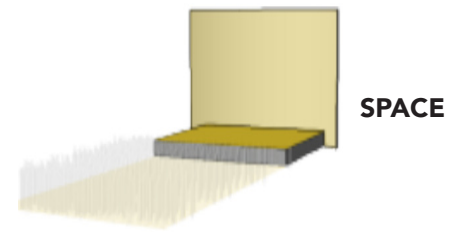


fig. 13: Diagram showing the spaces at a concert.



Every musical performance can be categorized as an ephemeral event because it can never be repeated with the same performers and audience. This creates a distinctive relationship between live music and architecture, one that is different from traditional architecture where the designer's role is over at the end once construction is done.¹ This also adds to the difficulty in designing a stage that needs to be able to fit many different stage sizes and setups.

Space can relate to not only the venue but also how the space on and around the stage is used. The stage area is not just a physical platform for musicians to perform on, but it is a canvas for creativity and expression.² Concerts use this space in a variety of ways such as adding large or small stage sculptures to enhance the show. These props can add to the visual spectacle of the show and help create a cohesive theme or storyline. These also help the performer emerge themselves within the show and helps bounce energy off of the audience, creating a more dynamic and exciting show. This can also be done with lighting and special effects, which can transform the stage area into a completely different environment.³ During "The Weeknds" 2019 Coachella performance there was a large face sculpture that was light different depending on the song and would drastically change the atmosphere.⁴ These visual elements take up space within a venue and transform the atmosphere thus creating an immersive experience.

In addition to the physical stage area, concerts also make use of the space in front of the stage, called the pit, where fans can stand and dance. As well as adding different platforms and catwalks that extend out from the stage which allows musicians to perform closer to the audience.

Overall, the use of space on and around the stage is an important aspect of concert production. It allows for creativity and expression and helps to engage the audience and create a memorable experience.



fig. 14: The Weeknd's Concert, 2019.

¹ Holding, 14.
² Richard Cadena, "The Art of Concert Lighting and Stage Design," LiveAbout.com, accessed April 16, 2023, <https://www.liveabout.com/the-art-of-concert-lighting-and-stage-design-2803182>.
³ "The Most Creative Use of Space in Concerts" by Joni Sweet, Eventbrite <https://www.eventbrite.com/blog/most-creative-use-of-space-in-concerts-ds00/>
⁴ Es Devlin, "The Weeknd Coachella" (2020), Es Devlin, accessed June 21, 2023, <https://esdevlin.com/work/weeknd-coachella>

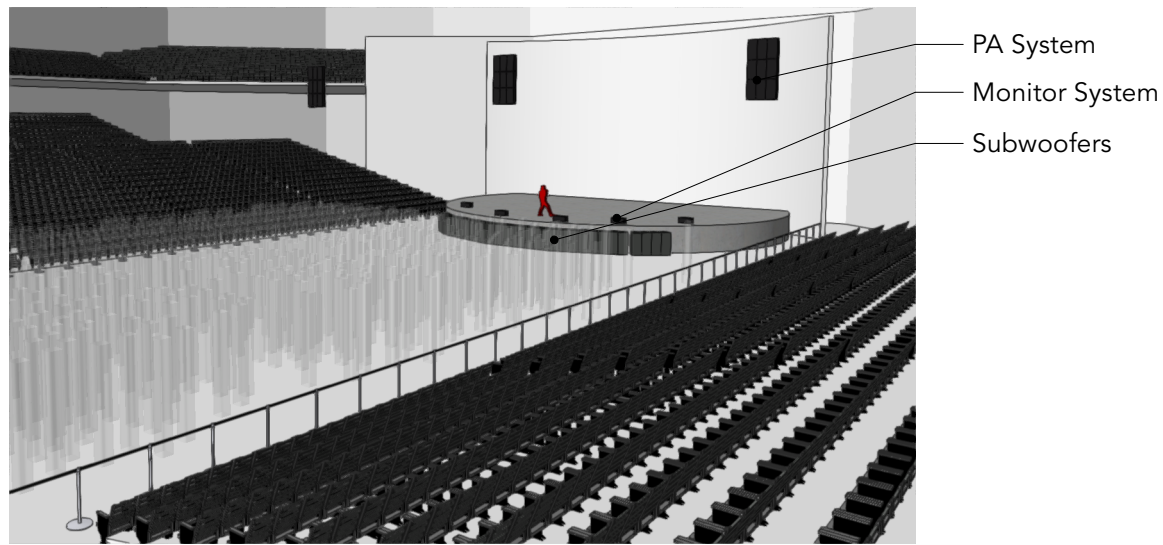
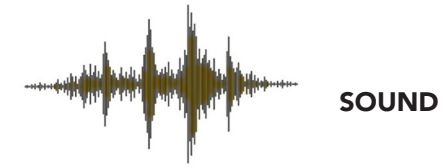


fig. 15: Diagram showing the location of concert speakers.



Sound is such a crucial material in live music, as it is the medium through which the music is experienced. The sound system, the acoustics of the venue, and the mixing and mastering of the music are all critical in creating a high-quality and immersive sound experience for the audience.

Can we create space by means of sound? If so, then can the absence of sound, silence also be a material? Sound, in its physical nature, is vibration, fluctuation of air pressure it is the medium that connects us with the space outside us. Richard Buckminster Fuller once said that “architecture’s role is to provide a controlled environment for humans”, this opens up thinking about architecture not only in material but also in immaterial terms; light and sound.¹

For live music concerts, the sound is the architecture. The music is what is bringing everything together in the space, and the people in that space forms the architecture. The music takes physical form and is the main purpose that has brought everyone together.² The music sets the tone and feel of the room while the added lights and stage elements are tools to manifest the artist’s musical vision.

Good live music engineering and concert sound engineering requires more than plugging in some amplifiers. It demands knowledge of acoustics and electronic combined with the collaborative skill of an artist to work with the band to produce the sound they want during the show.³ Every venue is different, from a small bar to an outdoor arena, each brings its own challenges to audio engineering. A live sound engineer’s job is to manage all the different levels of sounds from the performers and coax the correct overall sound out to the audience. This is done with the used of equipment such as amplifiers, microphones, audio lines, monitors, and mixing boards to control and direct the various sounds emitted by the musicians. After setting up the sound equipment, mixing comes into play. The mixing board allows the audio engineer to mix various sounds including guitars, bass, drums, and vocals, so that they’re in balance.

Advanced speaker systems now allow us to project the same sounds across any distance, making it possible for architecture to form in any open space. There is a high importance placed on projecting the sound during a concert because at the end of the day, that’s the whole purpose of a concert.⁴ Concerts use three typical types of speakers for large concerts including a PA system, monitor systems, and subwoofers. PA systems are designed to amplify the sound of a band so everyone in the audience can hear them clearly, this usually consists of different speakers placed around the stage. Monitor systems are designed to help the band hear themselves clearly so they can play together and stay in rhythm.⁵ Subwoofers, which are designed to reproduce the low frequencies that are often used during concerts, these are placed on the floor near the stage.



fig. 16: Showing the placement of speakers within the overall spatial layout of a typical arena sized concert. These can change slightly depending on the arena size but will usually follow this pattern.

1 Lukasz Partyka, LIVE - Exploring motion in live music shows and architecture. (2017).
 2 Richard Cadena, Lighting and Sound for Concerts and Tours (Burlington, MA: Focal Press, 2009), “Immersive Experiences: The Use of Materials in Live Music Production”
 3 Tim Crosby, How Live Sound Engineering Works. <https://entertainment.howstuffworks.com/live-sound-engineering>
 4 Cadena.
 5 Cadena.



fig. 17: Audience as a material - fluid in nature.



fig. 18: Audience as a material - reflecting and interacting with light.



AUDIENCE

The audience is the most important material when it comes to concerts because everything is done for them. They are not just an added factor to consider at the end, but instead, a factor that should be considered first when thinking about every other concert material.

The audience provides energy and reaction to the performers, which can help to create a dynamic and exhilarating atmosphere. When the audience is engaged and enthusiastic, it can inspire the performance to transform into a new world for the audience thus generating a truly immersive experience.¹ The atmosphere created by the audience can also enhance the mood and emotions of the music being played. An example of this is how a quiet and observant audience can create an intimate and emotional atmosphere, while a rowdy and energetic crowd can create a sense of excitement and exhilaration.²

The audience also fills the empty space around the stage and becomes a new material for light and sound to interact with. The propagation of a sound wave in air is influenced by all atmospheric conditions, and also by the processes of reflection, absorption and transmission at every surface with which it comes into contact. Sound and spatial continuum can be broken down into three categories; anechoic space, interactive space, and diffuse sound field. Anechoic space is where all surfaces are highly absorbent with minimum reflection, and is an acoustically neutral spaces used for testing sound sources. Interactive space is a balance of absorption and reflection where sound and space interact. Diffuse sound field has a maximum reflection of sound, and minimum absorption, where the sound is the space. This last category is what a concert would be, a place where it may be disorienting for the listener because there is little directionality to incoming sounds, and one might feel like they are swimming in the sound.

Similarly, light interacts with our environment through reflection, absorption, transmission, diffraction, and refraction. Reflection is when light bounces off the surface of the object, absorption is the energy from the light, transmission is when the light moves through the object, diffraction is the spreading or bending of lights as it goes through openings, and refraction is the bending of transmitted light as it travels across the boundary of one material into another material. When light is interacting with a concert audience it is being absorbed because of the dark nature of an audience, thus continually creating new light patterns. As the lights move around the audience the visibility and intensity of them will change depending on the density of the group it is shown on.

The audience is an integral material for a concert because they provide energy, reaction, and atmosphere. Without an engaged and enthusiastic audience, a concert can feel flat and uninspiring.

¹ Robert Pattison, *Music Festivals and the Politics of Participation* (New York: Routledge, 2018), 32.

² Pattison, 32.

CHAPTER THREE: CONCLUSION

In conclusion, the use of different materials in live music production is absolutely essential in crafting an immersive and unforgettable experience for the audience. Live music possesses the remarkable ability to create a transformative experience, one that unites the artists and the audience on a profound emotional and mental level. This powerful connection is forged by thoughtfully utilizing various elements such as light, time, scale, space, sound, and the audience itself.

Within this realm, architects can play a vital role due to their knowledge and expertise in light, time, scale, space, sound, and the audience. Their understanding of these elements allows them to curate spaces that enhance the live music experience, ensuring that every aspect contributes to the overall atmosphere and impact. Architects possess the ability to harness the potential of materials to create visually stunning and acoustically optimized venues that captivate the senses.

With their understanding of light, architects can manipulate it to set the mood and create dramatic effects during live performances. They consider the passage of time in their designs, incorporating elements that engage the audience throughout the entire event, from the anticipation leading up to the performance to the lingering memories afterward. Scale and space are carefully considered to ensure optimal sightlines and acoustic properties, allowing the music to resonate and envelop the audience.

Architects are well-versed in the intricacies of sound, understanding how to optimize acoustics in a venue to ensure clarity and balance. They collaborate with sound engineers to create spaces that showcase the music in its truest form, enhancing the emotional impact on the audience. Additionally, architects are mindful of the audience's experience, considering their comfort, sightlines, and overall engagement throughout the event.

In essence, architects bring their advanced knowledge and skills to the realm of live music production, enhancing the audience's experience and elevating it to new heights. Through their mastery of light, time, scale, space, sound, and the audience, architects create awe-inspiring venues that facilitate a profound connection between artists and listeners. Their contribution ensures that live music remains a transformative and unforgettable experience for all involved.

CHAPTER FOUR: ORDER & COMPLEXITY WITHIN CONCERT STAGE DESIGN

TYPES OF STAGES

In the book "Basics of Perception in Architecture", the Swiss architect Jorg Kurt Grutter describes the perception of aesthetics in architecture as an equal mix of order and complexity.¹ As he states, the order can give a kind of familiarity and feel of safety to a subject, whereas the complexity adds excitement and variety.² This theory can be connected with concert stage design by analyzing how order and complexity need to equally balance each other in order to create the best environment for a concert audience. Different types of stages add levels of order and complexity which need to be counter-parted with either more or less complex stage elements, lights, and projections. Grutter explains that something highly complex will need to be balanced with something that has a sense of order so it create a harmonized environment. With this idea a highly complex stage layout will need to be balanced with stage elements that have a sense of order. Similarly, simple stage layouts will allow for more complex stage elements. This theory can be understood when looking at the three most common types of stages for concerts; audience on one side, audience on three sides, and audience on four sides (see fig.18).

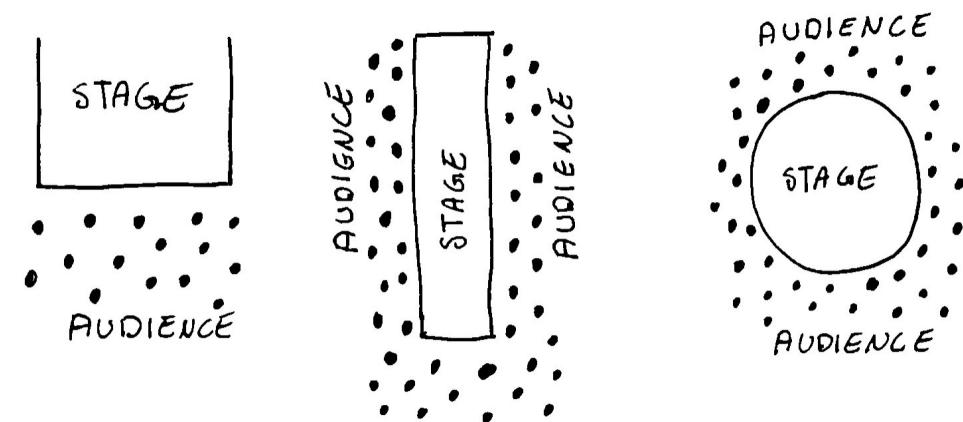


fig. 19: Diagram showing the three types of stages - front, thrust, and center



fig. 20: Diagram showing the balance between chaos and boring is interesting

¹ J. Grütter, "Introduction—The Foundations of Perception," in Basics of Perception in Architecture, ed. Springer Vieweg (Wiesbaden, 2020), https://doi.org/10.1007/978-3-658-31156-8_1.

² J. Grütter

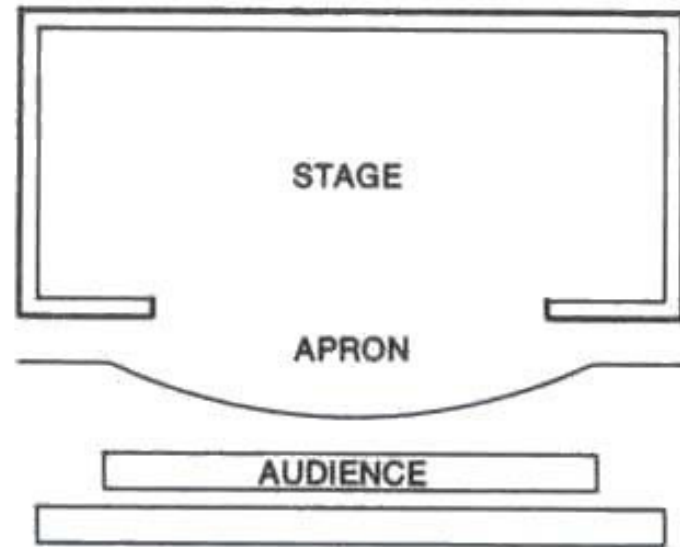


fig. 21: Diagram showing a front stage setup.

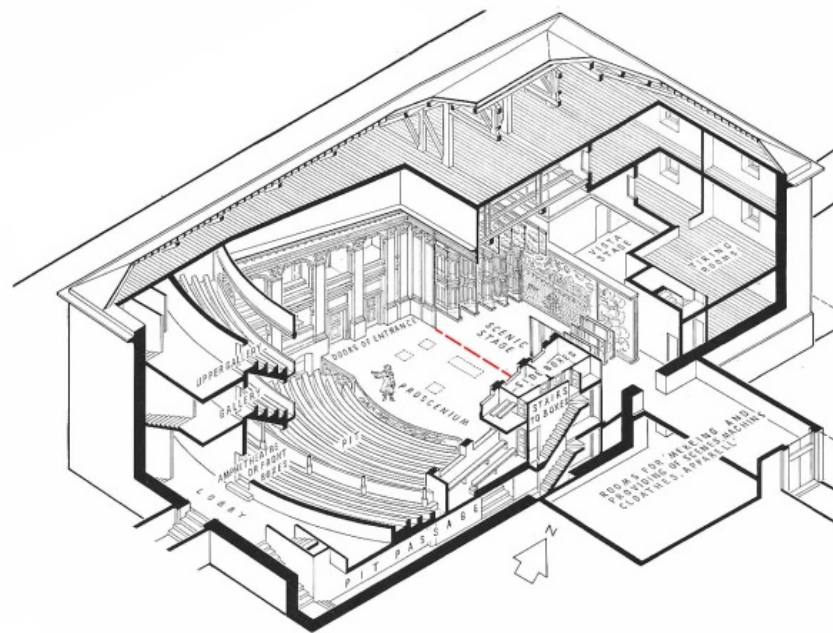


fig. 22: Example of front stage for theatre: Theatre royal Westminster, London, 1674.

FRONT STAGE - HISTORY

A front stage is where the audience sits on one side of a raised stage, and the audience faces one side of the stage.¹ This setup makes the stage reflect a picture frame because it is shaped in such a way that the audience watches the concert as it would regard a picture. End stages do not need to be limited to a square or rectangular design. These stages could be round, triangular, or another irregular shape.

The setup of a front stage is designed to create a clear distinction between the performers on the stage and the audience. It allows for a focused and direct line of sight between the performers and the audience members, enhancing the visual experience of the concert or performance.²

In a front stage setup, the audience is typically seated facing one side of the stage, which is elevated to provide a better view for the audience members. This configuration ensures that everyone in the audience has a relatively unobstructed view of the performers and allows for better sound projection from the stage to the audience.³

The front stage setup often features a proscenium arch, which is a decorative or architectural element that frames the stage, further emphasizing the picture frame analogy. The proscenium arch provides a clear boundary between the stage and the audience, enhancing the illusion and separation between the two.⁴

While front stages are commonly rectangular or square in shape, they can also be designed in other irregular shapes such as circles, triangles, or even asymmetrical configurations. The choice of stage shape depends on various factors, including the venue's architecture, performance requirements, and artistic vision.

In summary, a front stage is a raised platform with the audience seated on one side, facing the performers. It creates a distinct separation between the stage and the audience, resembling a picture frame, and allows for a focused and immersive experience for both the performers and the audience members.

1 Nagler, A. M.. A Source Book in Theatrical History. United States: Dover Publications, 2013.

2 Nagler.

3 Nagler.

4 Nagler.

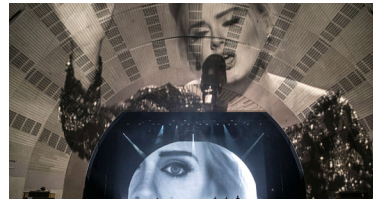


fig. 23: Adele, 2023.

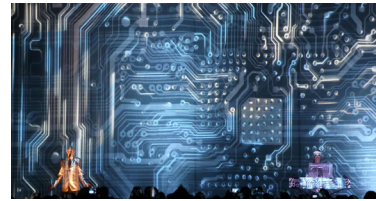


fig. 24: Pet Shop Boys, 2013.



fig. 25: Lorde, 2017.

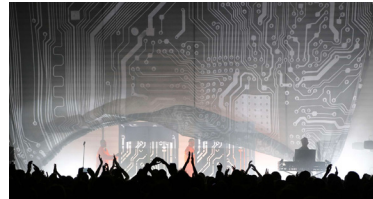


fig. 26: Pet Shop Boys, 2013.



fig. 27: Lorde, 2017.



fig. 28: Miley Cyrus, 2014.



fig. 29: Kanye West, 2012.



fig. 30: Rolling Stones, 2013.



fig. 31: Kanye West, 2012.



fig. 32: Lady Gaga, 2009.

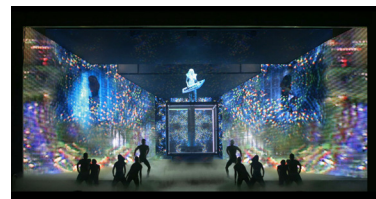


fig. 33: Pet Shop Boys, 2013.

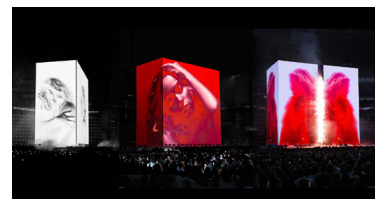


fig. 34: Beyonce, 2016.



fig. 35: Pet Shop Boys, 2013.

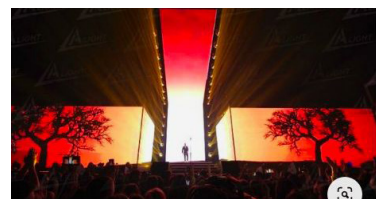


fig. 36: Kanye West, 2012.



fig. 37: Swedish House Mafia, 2019.



fig. 38: The 1975, 2022.



fig. 39: U2, 2018.



fig. 40: The Weeknd, 2019.

fig. 23-40: Here are multiple examples of front stages showing the typical one big idea that is used on the stage.

FRONT STAGE - ANALYSES

Having the audience on one side or known as a front stage, is one of the most common and easy set-ups for a concert.¹ A front stage brings a level of familiarity to the audience, it is a typical set-up that many people feel comfortable with and understand.² It is also the easiest stage set-up because these are typical pre-existing venues that have been around for while and been adapted from theatre to concerts. The audience has one direction to focus on and can take in the full show with one view-line. It is common for front stage added elements to be more complex to achieve that level of excitement that the audience is seeking. This can be done by creating a large sculpture that keeps the audience in awe, or by adding projections and even by adding levels where the performers can move upwards. This can be seen in the multiple case studies that have been analyzed and broken down. This stage layout allows for realistic backdrops to be presented that can easily transport the audience into a new world. Overall some positives to a front stage are; having the audience face one direction, simple set up and take down, the ability to easily hide elements, the facilitation of an 'us' and 'them' environment which creates realism, realistic stage elements are easy to create, and technical effects are easier to achieve.³ Some downfalls to a front stage set up are; it's difficult for the audience to become heavily involved, and stage elements can only be one-sided.⁴

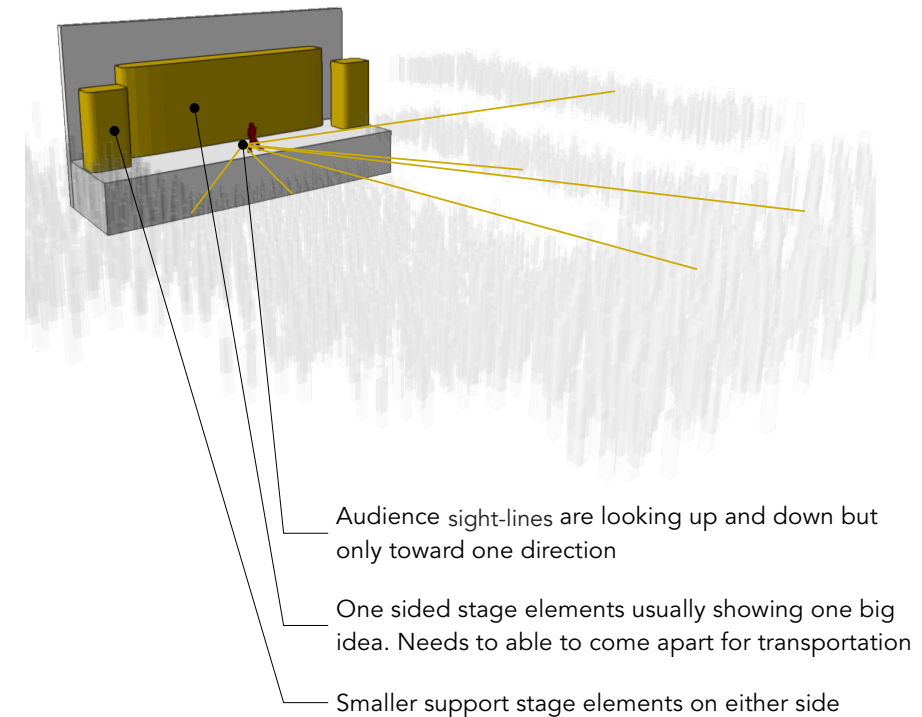


fig. 41: Diagram of typical layout for a front stage.

1 Nagler.
 2 Robert Kronenburg, *Live Architecture: Venues, Stages and Arenas for Popular Music*, 1st ed. (Abingdon, Oxon ; Routledge, 2012).
 3 Robert Kronenburg.
 4 Robert Kronenburg.

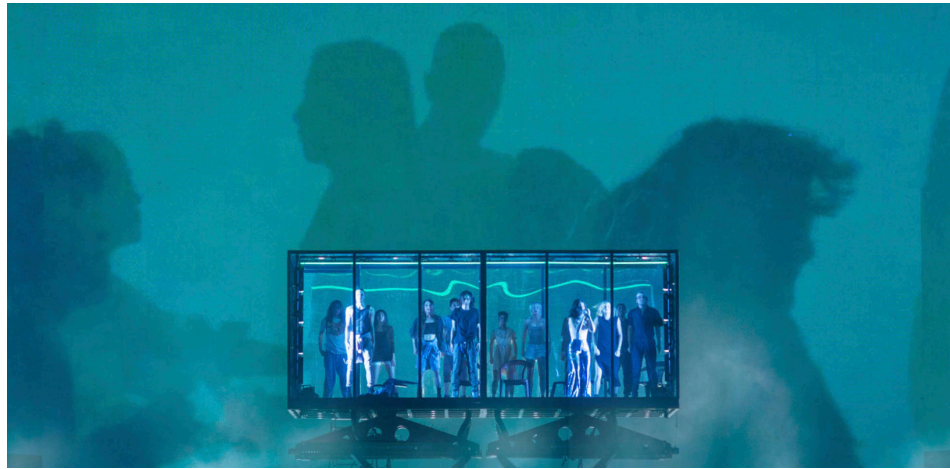


fig. 42-44: Lorde's Coachella performance in 2017. The stage opened with her inside a glass box with multiple people and progressed with everyone leaving until the box tilted and she "fell" out.

FRONT STAGE - PRECEDENT

Lorde - Coachella 2017
 Design: Es Devlin
 Lighting: Rob Sinclair
 Video: Good Company

Lorde's concert design at Coachella 2017 was notable for its unique and immersive staging elements, which added depth and visual impact to her performance. The design incorporated various elements to enhance the overall experience for the audience, aligning with Lorde's artistic vision and the theme of her music.

One of the key features of Lorde's concert design was the glass box that could be lifted and tilted, allowing Lorde and her accompanying performers to move and perform on different platforms.¹ The glass box was the one big idea to the stage design and worked well for a front stage because it was able to focus the audience in one direction. The glass box has the ability to be manipulated with the use of light and shadow between songs, as well as being raised to different heights to continue to change the environment.

In addition to the glass box, the concert design included a backdrop featuring large LED screens.² These screens displayed captivating visuals that complemented the music and added a visual narrative to the performance. The visuals included a mix of abstract patterns, colorful animations, and live footage, creating a visually engaging backdrop that enhanced the atmosphere of the concert.

The front stage also worked well with Lorde's music type of pop because it created a basic set-up that created an entertaining stage element that could transition between her different levels of pop. It created a central mosh pit that was full of energy for her more upbeat songs, while also keeping her in focus and the audience entertained.

This stage design used a simple idea of a glass box but utilized it to its full potential which allowed her to create a captivating performance. Behind the "big idea" was screens that would help activate what was happening within and onto of the glass box to further engulf the audience within each song's world.

¹ Es Devlin, "Lorde Coachella | Es Devlin," accessed July. 18 2023, <https://esdevlin.com/work/lorde-coachella>.
² Es Devlin.

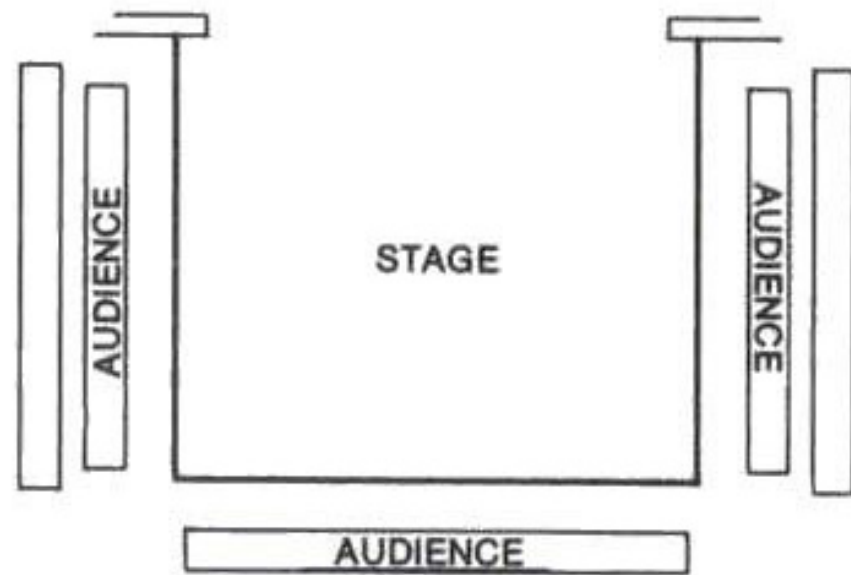


fig. 45: Diagram showing a thrust stage set-up with the audience on three sides.

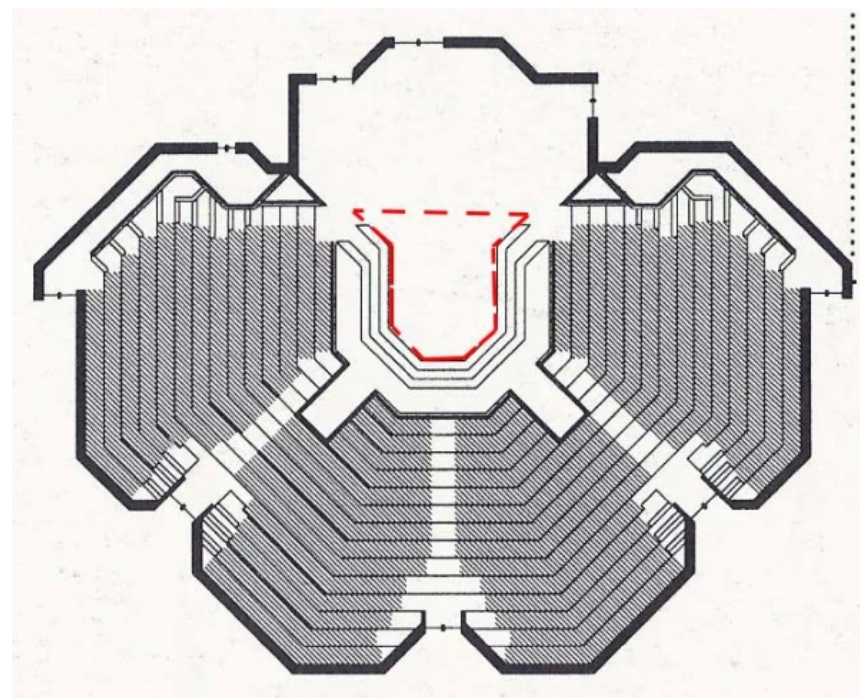


fig. 46: Example of thrust stage in theatre: Crucible Theatre, Sheffield, South Yorkshire, 1971.

THRUST STAGE - HISTORY

Thrust stages are named after the stage being projected beyond the front stage and into the auditorium with the audience sitting on three sides.¹ A thrust has the benefit of greater intimacy between the audience and performers than a front stage, while retaining the utility of a backstage area.

The history of the thrust stage can be traced back to ancient Greek and Roman theaters, where performances took place in open-air amphitheaters.² In these early theaters, the stage was a platform that projected forward into the seating area, surrounded by a semicircular or rectangular audience. This configuration allowed for a more intimate connection between the performers and the spectators, fostering a sense of engagement and proximity.

During the Elizabethan era in England, the thrust stage experienced a revival with the construction of the iconic Globe Theatre.³ The Globe's stage extended into the audience, creating a unique theatrical experience. This design choice not only facilitated a closer relationship between actors and viewers but also enabled a larger number of spectators to be accommodated. The thrust stage at the Globe Theatre became synonymous with the works of William Shakespeare and his contemporaries, leaving a lasting impact on theater history.⁴

Over time, the thrust stage continued to evolve and find its place in different cultural contexts and performance traditions. In the 20th century, theater practitioners and architects started incorporating thrust stages into contemporary theater designs.⁵ The thrust stage gained recognition for its ability to offer a sense of immediacy, intimacy, and enhanced sightlines.

Thrust stages have proven to be versatile and adaptable to various performance genres, including drama, dance, and music. The layout allows for dynamic interactions between performers and audiences from multiple angles, breaking the traditional proscenium barrier and fostering a more immersive experience.⁶

In addition to the advantages of intimacy and audience engagement, the thrust stage also retains the practicality of a backstage area. This backstage space facilitates seamless scene changes, prop storage, and performer entrances and exits, ensuring the smooth flow of the performance.

Contemporary theaters around the world continue to incorporate thrust stages, embracing their historical significance and recognizing their potential to create compelling and immersive theatrical experiences. By projecting the stage into the auditorium and placing the audience on three sides, the thrust stage provides a unique spatial relationship between performers and viewers, amplifying the sense of connection and shared experience within the theatrical space.

1 George Riley Kernodle, *The Theatre in History* (United States: University of Arkansas Press, 1989), 318.
 2 Kernodle.
 3 Kernodle.
 4 Kernodle.
 5 Kernodle.
 6 Kernodle.



fig. 47: Ariana Grande, 2019.



fig. 48: U2, 2018.



fig. 49: Jay-Z & Beyonce, 2018.



fig. 50: U2, 2018.

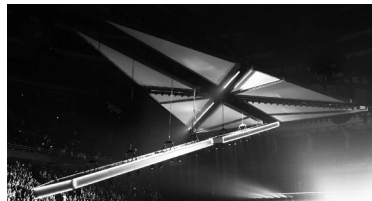


fig. 51: The Weeknd, 2017.

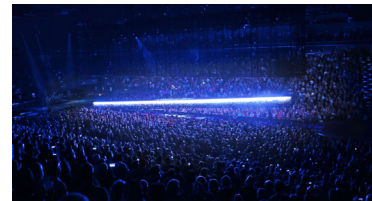


fig. 52: U2, 2018.



fig. 53: Jay Z & Beyonce, 2018.



fig. 54: The Brit Awards, 2015.



fig. 55: Ariana Grande, 2017.



fig. 56: Elton John, 2013.



fig. 57: Dua Lipa, 2022.



fig. 58: U2, 2015.

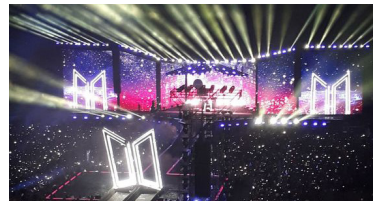


fig. 59: Coldplay,



fig. 60: Paul McCartney, 2023.

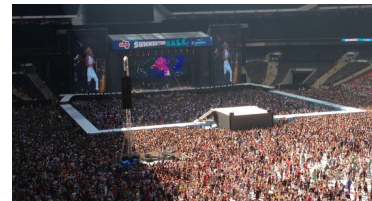


fig. 61: Harry Styles, 2023.



fig. 62: Billie Eilish, 2022.

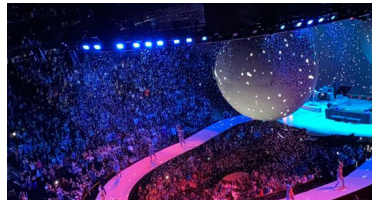


fig. 63: Ariana Grande, 2019.



fig. 64: Coldplay, 2016.

fig. 46-63: Here are multiple examples of thrust stages showing the different shapes and sizes of walkways and the simplicity in the added stage elements.

THRUST STAGE

Thrust stages add a level of complexity for the audience by providing performers with increased mobility and the opportunity to move closer to the audience. Unlike the front stage where the audience views the performers from a frontal perspective, thrust stages provide multiple vantage points. The extended stage space allows for surprises and unexpected moments as performers move throughout the arena.¹ Despite the added complexity in the movement, thrust stages still maintain a level of order and predictability. While performers may have more variation in their movement, there are still designed areas the audience can anticipate them being. This balance between unpredictability and familiarity ensures that the audience will be engulfed in the spectacle while still feeling comfortable. Thrust stages offer several positive aspects that enhance the audience experience. They provide more sight-lines for the audience, the stage is usually created off site and is easily assembled, they have many shapes and pattern options, and it provides a deeper connection between audience and performer.² However, there are also certain challenges associated with a thrust stage including how the performer may not always be in sight for the audience, the performers have to relate to three sides to get interaction, lighting plots need to be more complex, and stage elements can cause audience view-line issues.³ Thrust stages are usually introduced for large arena concerts as the added walkway takes away seating space on the floor, so it is only financially smart to do this when the arena is large to make up for those lost seats.

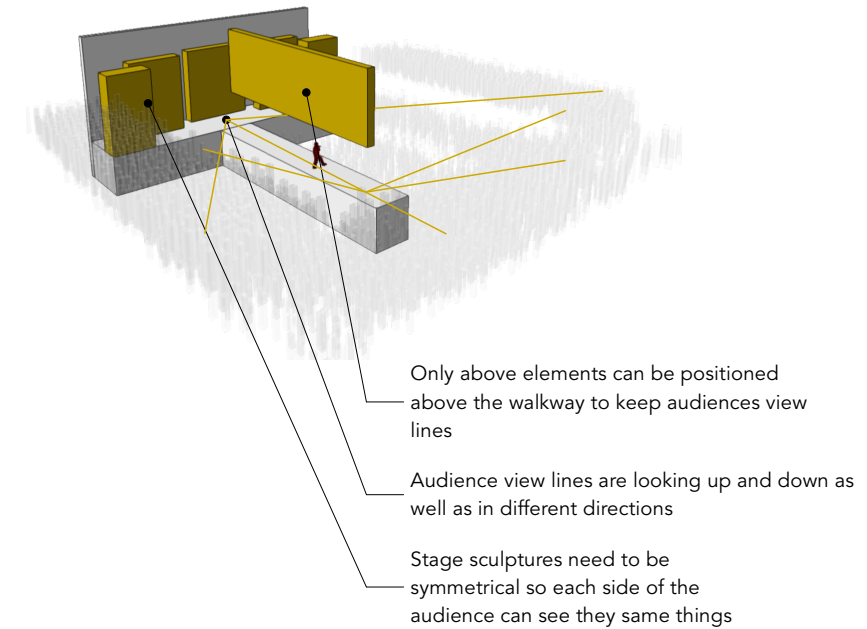


fig. 65: Diagram of typical layout for thrust stage

¹ Robert Kronenburg, *Live Architecture: Venues, Stages and Arenas for Popular Music*, 1st ed. (Abingdon, Oxon ; Routledge, 2012).

² Robert Kronenburg.

³ Robert Kronenburg.

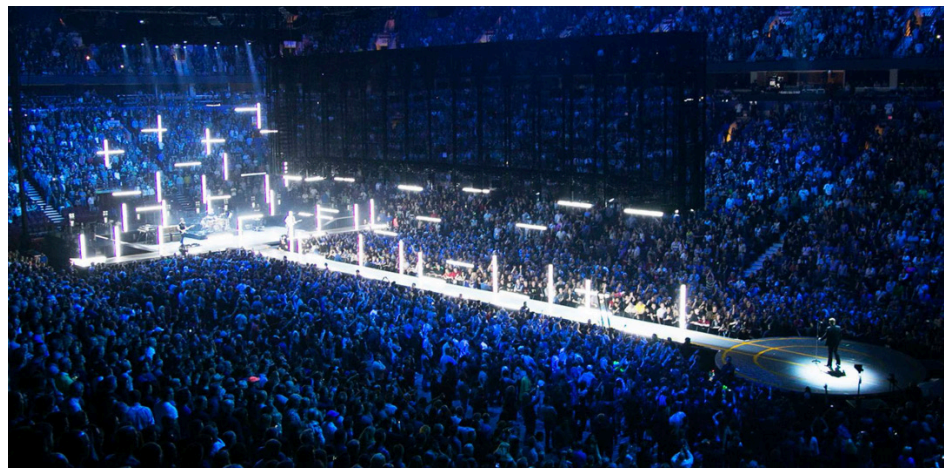
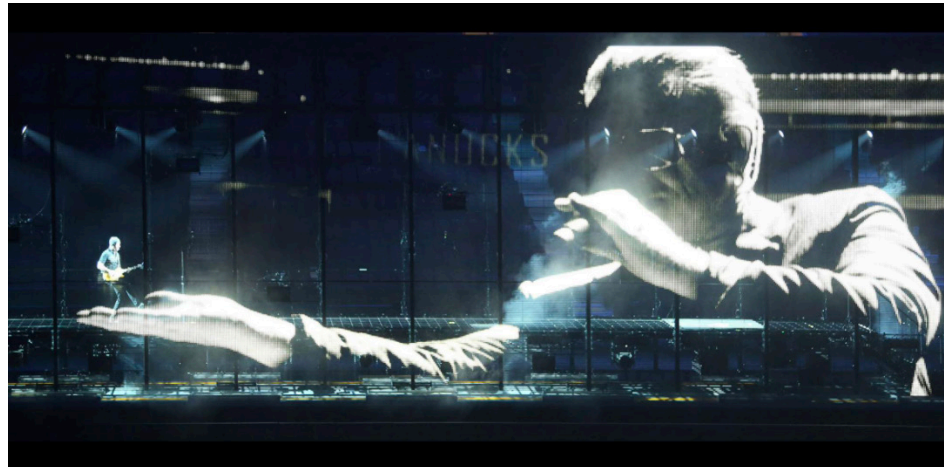
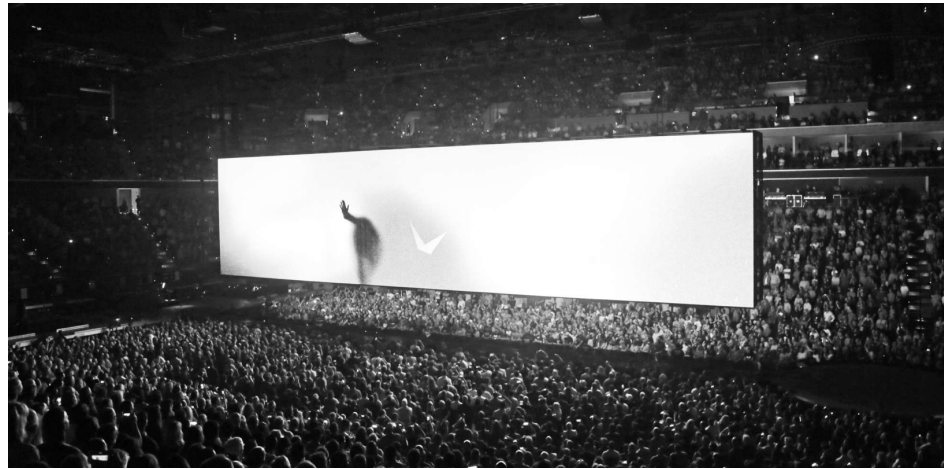


fig. 66-68: U2 - Experience + Innocence Tour in 2018. The thrust stage took different forms throughout the show including a walkway, a screen, and a light show.

THRUST STAGE - PRECEDENT

U2 - Innocence & Experience World Tour, 2015.

Design: Es Devlin

Set Designer: Ric Lipson / Stufish

Lighting: Stedaan 'Snasher' Desmedt

Video: Treatment Studio

The U2 Innocence & Experience World Tour, held in 2018, had a visually stunning stage design that captivated audiences worldwide. The stage itself was characterized by a front stage, complemented by a large walkway, and featured a prominent LED screen suspended above it.¹ What made this stage design truly unique was its ability to transform and adapt throughout the course of the show, aligning with the emotions and themes of the different songs.

The centerpiece of the stage was the LED screen, which served as a dynamic backdrop for the band's performances. The screen was not static but rather adjustable in height, allowing it to be lifted above the walkway or lowered to interact with the musicians on the front stage.² This versatility enabled the screen to change its position and configuration, creating various visual effects and immersive experiences for the audience.

Throughout the concert, the LED screen played a pivotal role in enhancing the storytelling aspect of the performance. It showcased a wide range of visuals, including live footage, pre-recorded videos, animations, and artistic graphics.³ The content displayed on the screen was carefully curated to align with the specific songs being performed, reflecting their themes and adding an additional layer of depth to the overall experience.

The large walkway extending from the front stage further enhanced the connection between the band and the audience. This walkway provided an extended performance area, allowing the musicians to move closer to the crowd and engage with fans in a more intimate manner. The LED screen above the walkway served as a dramatic backdrop during these moments, amplifying the energy and excitement of the live performance.

In summary, the U2 Innocence & Experience World Tour featured a stage design that incorporated a front stage, a large walkway, and a dynamic LED screen. The screen, adjustable in height, changed throughout the concert to reflect different songs, showcasing a wide range of visuals and adding a captivating visual element to the performances.

¹ Es Devlin, "U2 Innocence & Experience | Es Devlin," accessed July 18 2023, <https://esdevlin.com/work/u2-innocence-experience>.

² Devlin.

³ Devlin.

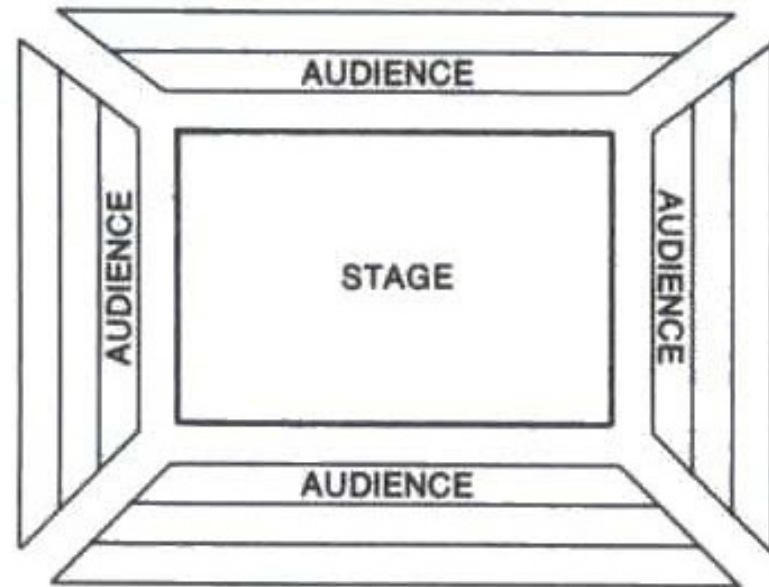


fig. 69: Diagram showing a center stage with the audience on four sides.

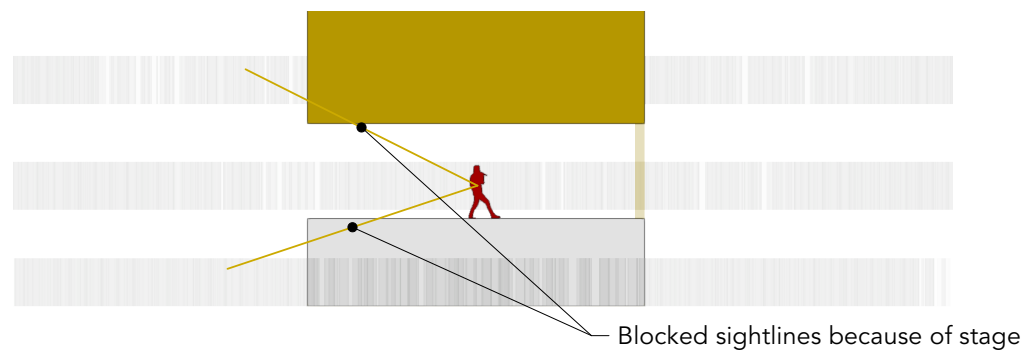


fig. 70: Section of center stage showing blocked sight-lines

CENTER STAGE - HISTORY

The concept of a center stage has played a significant role in both theatre and concert performances throughout history. It has served as a focal point for performers and has allowed for dynamic and engaging presentations.¹

The idea of a center stage can be traced back to ancient Greek theater, where performances took place in open-air amphitheaters.² The Greeks developed a semi-circular performance space known as the orchestra, which served as the central area for actors and chorus members. This circular space allowed for an intimate connection between performers and the audience, as well as easy access to all sections of the audience.

During the Renaissance period, theater stages evolved into more elaborate and complex structures. The proscenium stage, characterized by a large arch framing the performance area, became popular.³ However, even with this architectural shift, the concept of the center stage remained crucial. Performers would often gravitate towards the center to ensure their visibility and to engage with the audience more effectively.

As theater practices continued to develop, the center stage remained a vital element in theatrical performances. In the 19th and 20th centuries, the center stage was used strategically to create dramatic effects and emphasize key moments in the play. Actors and directors would use the center stage to draw the audience's attention and convey important emotions or actions.

In addition to theater, the concept of a center stage also influenced concert performances, especially in classical music. In symphony halls and opera houses, the central area in front of the stage, often referred to as the "center stage," is the focal point for soloists and the conductor.⁴ Soloists, such as pianists, violinists, or singers, would position themselves at the center to ensure their music and performance are well-projected and reach all corners of the auditorium.

The concept of a center stage also extended to more contemporary concert performances, including rock, pop, and other genres. In large arenas or stadium concerts, the center stage remains the main focus, where the lead singer or band members often position themselves. This central location allows for better visibility and interaction with the audience, creating a more immersive experience for concertgoers.

While the concept of a center stage has historical and practical significance, it is also symbolic. The center stage represents a position of prominence and authority, both in theater and music. The performer at the center becomes the focal point, commanding attention and guiding the audience through the narrative or musical journey.

¹ George Riley Kernodle, *The Theatre in History* (United States: University of Arkansas Press, 1989), 325.

² Kernodle.

³ Kernodle.

⁴ Kernodle.



fig. 71: Take That, 2017.



fig. 72: Harry Styles, 2022.



fig. 73: Swedish House Mafia, 2019.



fig. 74: Night of Proms, 2012.



fig. 75: Kanye & Jay-Z, 2011

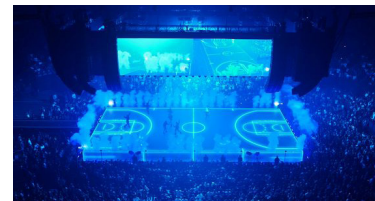


fig. 76: Drake, 2018.



fig. 77: Kanye West, 2012.



fig. 78: Stewart Copeland, 2007.

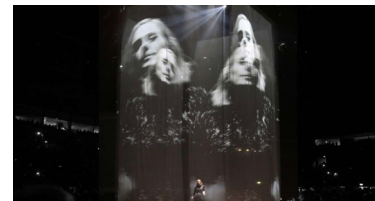


fig. 79: Adele, 2016.

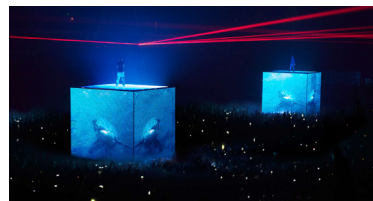


fig. 80: Kanye West & Jay Z, 2011.



fig. 81: Kanye & Jay-Z, 2011



fig. 82: Muse, 2009.

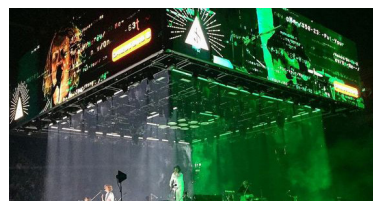


fig. 83: Arcade Fire, 2017.



fig. 84: Adele, 2016.



fig. 85: Bianca Ingrassio, 2015.



fig. 86: Childish Gambino, 2019.



fig. 87: Adele,



fig. 88: Diplo, 2018.

fig. 71-88: Here are multiple examples of center stages showing the use of a raised platform with nothing above or a lower stage with hanging material above.

CENTER STAGE

Center stages are simple in design and offer a clear and straightforward layout that is easily understood by the audience. They need to have this simplicity so all four sides of the audience are treated equally. With this level of simplicity needed in the stage layout an added level of excitement and visual stimulation must come from lights or projections.¹ Lighting design plays a crucial role in center stages, as it can dynamically transform the atmosphere. The simplicity of a center stage design allows the focus to be on the performer and provides a blank canvas for the artist to express themselves and connect directly with the audience. Front stages offer many positives including the unique characteristic of being surrounded on all sides by the audience which creates a completely immersive experience. The absence of a fixed background can also enhance imagination and encourage creative interpretations.² The center stage can also offer some negatives including how the performer's back will be toward the audience at times throughout the concert, moving performer's on and off stage is tricky, it doesn't allow for a fixed background, and it's impossible to have a realistic feel.³ Moving the performer on and off the stage is a major aspect to a center stage as there is no back of house area like a front or thrust stage has. Movement to and from a center stage is done in two ways, either the stage with have a trick bottom where the performer can be lifted up onto the stage or the will enter on the side of the stage using a staircase.

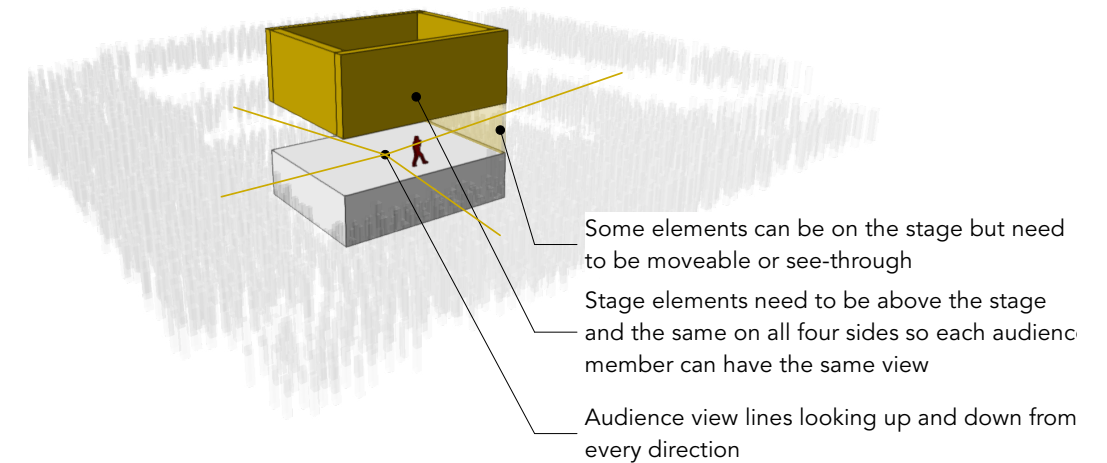


fig. 89: Diagram of typical layout for center stage

¹ Robert Kronenburg, *Live Architecture: Venues, Stages and Arenas for Popular Music*, 1st ed. (Abingdon, Oxon ; Routledge, 2012).

² Robert Kronenburg

³ Robert Kronenburg

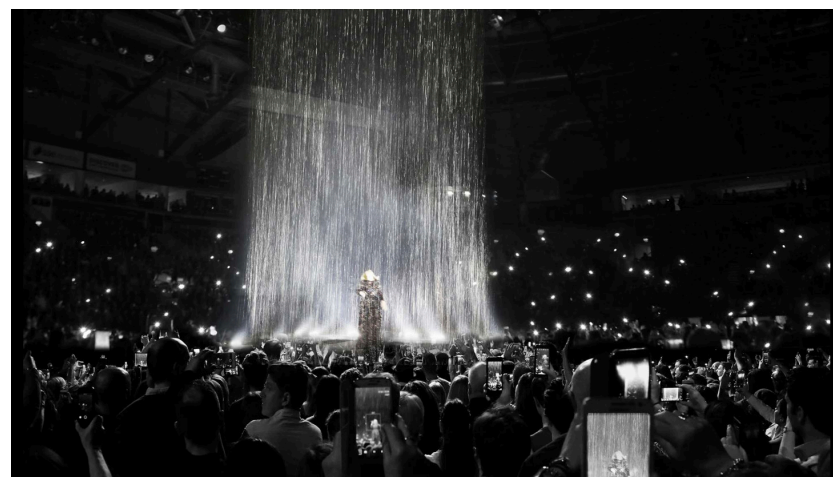
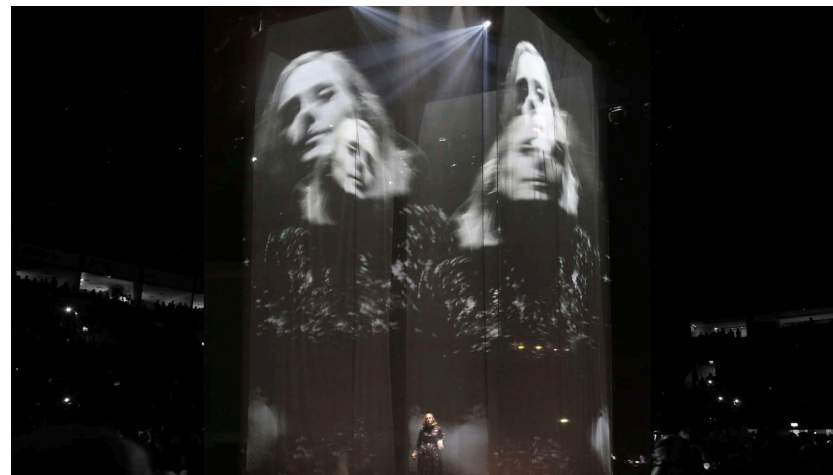


fig. 90-92: Adele's World Tour in 2016 utilized a center stage that transformed from being a simple stage with musicians, to hanging projections surrounding it, to raining encompassing it.

CENTER STAGE - PRECEDENT

Adele - World Tour, 2016.

Design: Es Devlin

Lighting: Patrick Woodroffe

Video: Treatment Studio

Adele's World Tour in 2016 was a highly anticipated event for fans all around the globe. One notable aspect of the tour was the design of the center stage, which played a crucial role in creating an intimate atmosphere that complemented Adele's soft and lyrical music.¹

The design of the center stage was deliberately kept simple, yet it had a profound impact on the overall concert experience.² Instead of opting for elaborate and extravagant stage setups, Adele and her team focused on creating an environment that would enhance the emotional connection between the artist and her audience.

The center stage was designed as a circular platform surrounded by a circular catwalk that extended into the audience, allowing Adele to move freely and interact closely with her fans from all sides.³ This setup ensured that no matter where a fan was seated, they would have a chance to see Adele up close and personal.

The simplicity of the design emphasized Adele's voice and lyrics, drawing the attention primarily to her performance rather than relying on flashy visual effects or elaborate stage props. This approach was perfectly suited for Adele's music, which often carries deeply personal and emotional themes. By eliminating distractions, the center stage allowed the audience to fully immerse themselves in the music and connect with Adele on a more intimate level.

In conclusion, the design of the center stage during Adele's World Tour in 2016 was a testament to the power of simplicity. By keeping the focus on Adele's voice and lyrics, the design allowed for an intimate and emotionally charged atmosphere. The circular shape of the stage and Adele's interactions with the audience created a sense of unity and inclusivity, making the concert a truly unforgettable experience.

¹ Es Devlin, "Adele World Tour | Es Devlin," accessed July 18 2023, <https://esdevlin.com/work/adele-world-tour>.

² Devlin.

³ Devlin.

Uncomplicated Concert Stage



fig. 93-95: Wilco & Bahamas concert at Budweiser Stadium, 2020.

Chaotic Concert Stage



fig. 96-98: Travis Scott's Astroworld concert, 2019.

Balanced Concert Stage



fig. 99-101: The 1975's Being Funny in a Foreign Language concert, 2022.

UNCOMPLICATED, CHAOTIC & BALANCED STAGES

Too much order can lead to things becoming boring and too much complexity can lead to chaos and over stimulation. People's brains are always searching to find patterns in things to help make sense of what's going on around them.¹ If something is very simple people can find the pattern immediately and will lose interest. But if the pattern is too difficult to see or if there's no pattern at all, people will get frustrated and annoyed.² This is why there is a midpoint between these two situations that creates a perfect environment for people. This is directly related to concert stage design and the relationship between the type of stage and the added stage elements. When designing a concert stage there needs to be a balance between the level of complexity and order with the design to facilitate the best immersive experience.

Too much order in a concert stage design can result in a monotonous and predictable experience. Imagine a stage that lacks any creative elements or visual appeal. While the simplicity may initially be easy to understand, it can quickly become uninteresting and fail to captivate the audience. Humans have a natural inclination to seek novelty and stimulation, and if a concert stage lacks complexity or visual interest, it may not hold the audience's attention for long. This notion is very apparent within the last decade as people are no longer happy to just go out and hear live music, now the music is not enough and people expect to be blown away with each concert experience.

On the other hand, an excessively complex stage design can lead to chaos and over stimulation. If a stage is filled with an overwhelming number of elements, lights, props, and visuals without any coherent pattern or structure, it can confuse and frustrate the audience. The lack of a discernible pattern or the inability to make sense of the design can create a sense of disconnection and dissatisfaction among concert-goers. The stage and effects will start to overpower and detract from the music itself, varying on the type of music.

Therefore, finding the midpoint between these two extremes is crucial in creating a captivating and immersive concert experience. This means carefully integrating elements of complexity and order into the stage design. The complexity should be present enough to engage the audience's curiosity and provide visual interest, while the order should ensure that there is a coherent structure and a discernible pattern that viewers can comprehend.

The three concert examples shown in fig. 87-95 show the range between uncomplicated, chaotic, and balanced concerts. Each reflect the nature of the music being played, Wilco & Bahamas play slow soft music that pairs with the uncomplicated stage. Travis Scott is a rapper with heavy and loud beats that matches the chaotic stage. Lastly, The 1975 play upbeat indie music that matched the perfectly curated house stage design.

¹ J. Grütter, "Introduction—The Foundations of Perception," in *Basics of Perception in Architecture*, ed. Springer Vieweg (Wiesbaden, 2020), https://doi.org/10.1007/978-3-658-31156-8_1.

² J. Grütter.

CHAPTER FOUR - TYPES OF STAGES: CONCLUSION

In conclusion, front, thrust, and center stages play essential roles in the context of a concert, catering to different genres and creating distinct atmospheres for performers and audiences.

The front stage usually has one big idea as added stage elements with simple screens and projections to accompany it. It is also particularly well-suited for pop and hip-hop music due to its ability to facilitate the creation of visually captivating backdrops. The dynamic and energetic nature of these genres often benefits from elaborate stage designs, lighting effects, and multimedia displays that enhance the overall performance.

A thrust stage offers an intimate setting that allows performers to establish a profound connection with the audience. It is usually designed with hanging elements above the walkway or elements that can be moved up and down. This stage type is particularly effective for rhythmic and intense songs where the goal is to elicit strong emotional responses. The close proximity between the performer and the audience on three sides of the stage enhances the sense of engagement and involvement, creating a shared experience that intensifies the impact of the music.

Center stages are designed with different stage shapes and usually have transparent materiality and elements that hang above the stage. They are also ideal for slow, soft songs that rely on the pure emotive power of the music itself. With minimal stage elements and distractions, the focus remains solely on the artist and their heartfelt performance. This stage setup complements soulful music, allowing the nuanced emotions and delicate melodies to take center stage, and enabling the audience to fully immerse themselves in the evocative experience.

Understanding the unique characteristics and capabilities of each stage type enables concert organizers to curate immersive and engaging experiences for audiences. Whether it's the vibrant spectacle of a front stage, the intimate connection of a thrust stage, or the soulful simplicity of a center stage, the appropriate choice can enhance the overall impact of the music and ensure a memorable concert experience for all.

CHAPTER FOUR: ORDER & COMPLEXITY WITHIN CONCERT STAGE DESIGN

EXPECTATION OF THE SPECTACLE

An immersive experience describes the perception of being surrounded by, and being a part of a different environment than one's normal day to day. An immersive experience is transformative in nature. This can be shown by how the sights, sounds, energy, and even food are experienced within a venue can take someone to another place entirely.¹ Some examples of this are a champion final soccer game in England, a 3D voyage through the stars where constellations expand as one travels through them, or a fictional world from a favorite movie. People are enveloped in a captivating environment that stimulates the senses and deceives perception. An immersive experience is an illusory environment that surrounds someone such that they feel that they are inside it and part of it.² The main elements of an immersive spectacle are its ability to tell a story, fulfill the wish, entice all senses, its use of materials, overall inclusiveness, and plan layout. These elements will be explained through examples of immersive experiences including; The Art of Bloom, Immersive Van Gogh, and Forest of Us Superblue.



fig. 102: The Art of Bloom, 2019.



fig. 103: Immersive Van Gogh, 2021.

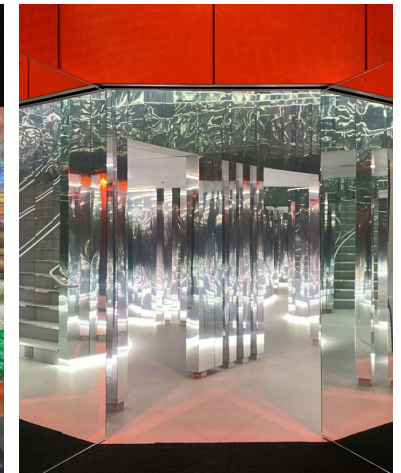


fig. 104: The Forest of Us, 2018.

¹ IGI Global, "Trends, Experiences, and Perspectives in Immersive Multimedia and Augmented Reality" (United States: IGI Global, 2018).

² IGI Global.

INTRODUCTION

Taking a step back from concerts specifically and analyzing immersive experiences will help understand what an audience expects from a concert. These three exhibitions each brought in a large crowd of diverse people who left the event feeling fulfilled from the experience. Being able to understand how that was done can be brought into concert stage design and help push the boundaries of what has already be done.¹

When analyzing such immersive experiences, it is essential to consider various factors that contribute to their success. These include the telling a story, fulfilling a wish, enticing the senses, the overall inclusiveness of the exhibition and its layout. By understanding how these elements are orchestrated to create immersive environments, architects and stage designers can draw inspiration and adapt them to the concert context.

For instance, the spatial layout of an exhibition might employ clever use of space, guiding participants through different zones or immersive installations that evoke a sense of discovery and engagement. Integrating interactive elements, such as touchscreens, motion sensors, or augmented reality, can create opportunities for active participation and personalized experiences.

Sensory stimulation can play a crucial role in creating immersive environments. This can involve the use of lighting, sound, visuals, and even scents to enhance the emotional impact and immerse participants in a multisensory experience. Additionally, storytelling techniques that weave a narrative or convey a message can create a sense of purpose and deeper connection with the audience.

Thematic coherence is another essential aspect to consider. Successful immersive experiences often have a clear overarching theme or concept that unifies the various elements and installations, creating a cohesive and immersive atmosphere. This thematic consistency helps to guide the audience's emotional journey and fosters a more profound sense of fulfillment.

By studying these diverse immersive experiences, architects and stage designers can identify patterns and strategies that can be translated into concert stage design. Applying principles such as spatial engagement, interactivity, sensory stimulation, storytelling, and thematic coherence can push the boundaries of traditional concert experiences, elevating them into more immersive and memorable spectacles.

By incorporating these insights, architects and stage designers have the opportunity to transform concert venues into captivating environments that transcend the ordinary, creating unique and fulfilling experiences for both the audience and performers.

¹ Renée Stevens, *Designing Immersive 3D Experiences: A Designers Guide to Creating Realistic 3D Experiences for Extended Reality* (United States: New Riders, 2021).

Tell a Story:

A story is more than a conventional narrative with a linear storyline. It is a theme that binds everything together. The story can include what happens and the time and place it occurs, but it is the thematic elements that create the experience. Each spectacle needs to consider the individual days, emotions, and mentalities of each guest as it influences the way they perceive the story.² Consideration should be made for these real-life factors including activities they have experienced before arriving, and whether they will need to leave the space for eating or using the restrooms. The story must also be focused to be relevant to the type of experience being created, as well as the audience and cultural factors of those who is experiencing it.³ The story is both a premise and a promise. For guests to decide to spend the time, money, and effort to visit this world, they need to know generally what to expect, with room for surprises.

Fulfill the Wish:

Immersive experiences are grounded in wish fulfillment. They transport participants into a fantastical version of a new world, where they realize new desires. Understanding the guests' desires drives what the experience should be, what they want to do, where they want to do it, and why their participation is worth it.⁵ For most guests, there is a core wish to meet that will gauge whether they are satisfied with their experience. Uncover the main desires to fulfill the wish for the guest.

Entice all Senses:

Art is subjective in nature, so understanding the process of how someone experiences a space can influence the effectiveness of an immersive spectacle. People use their sense of sight, touch, smell, hearing and taste to make conclusions about the world around them. The more senses that can be engaged at the same time, the more it becomes tailored to being inclusive by giving a chance for people to experience it through the sense that works best for them.⁶

What one sees and hears are typically the primary factors for them to think about and control. Engaging both senses simultaneously makes the experience more accessible to individuals who only possess one of those senses. The embrace of physical and emotional touch is encouraged. Holding something in one's hands reinforces its reality, conveying a magical simplicity inherent in tactile elements such as buttons, wheels, and textured surfaces. However, guests do not necessarily need to physically touch everything to experience physical sensations.⁷ Practical special effects are employed to engage the physical senses, such as heat blasts, air blasts, mist, smoke, fog, and haptic vibrations.

² Devin Penner, *Rethinking the Spectacle: Guy Debord, Radical Democracy, and the Digital Age* (Canada: UBC Press, 2019).

³ Eric P. Olsen, *The Principles of Spectacle: A Geographic Model* (N.p.: University of Wisconsin--Madison, 2003).

⁴ Eric P. Olsen..

⁵ Eric P. Olsen.

⁶ Erica McCay, "7 Principles for Creating Immersive Worlds," Valtech, 2022, accessed June 3, 2023, <https://www.valtech.com/en-ca/blog/7-principles-for-creating-immersive-worlds/>.

⁷ Erica McCay,

"There are other ways to think about touch, too. Beyond the five external senses, there are emotional, intellectual, and social aspects to meet. What is the mood of the space? Is it scary, heartwarming, or epic? Is the guest learning a new skill? Is there a sense of belonging? How do guests engage with each other? Each of these senses, when present, allow the guest to feel more immersed in the space."⁸

Inclusiveness:

What inclusive design strives to do, "is go beyond compliance and account for the diverse contexts and abilities of a wide audience in order to better inform the ways that different users may seek different approaches to gain the same benefit from immersive technology".⁹ This can be described as using multiple solutions in consideration of multiple kinds of users. Physiological fulfillment and safety are the first inclusive requirements for an immersive experience. Comfort is also a foundational need; the moment guest experiences too much discomfort they are no longer enjoy oneself.

Other design considerations need to be understood for disabilities these can include, mobility; serious difficulty walking or climbing stairs, cognition; serious difficulty concentrating, remembering, or making decisions, hearing; deafness or serious difficulty hearing, and vision; blindness or serious difficulty seeing.¹⁰

Layout:

It depends where the immersive experience is taking place and the mobility it needs to have, but it is common for them to be built within existing buildings. This gives some flexibility for the layout but also constants on accessibility and location of doors and washrooms.¹¹ The common layouts for immersive experiences include a lobby, entrance before the experience, the immersive area, and a decompression area at the end. This beginning and ending sequence is important because it give people a sense of safety and understanding of where they can go if they get overwhelmed.¹²

The next section will begin to analyse three immersive experiences and how they achieved these different elements. The works being discussed are "The Art of Bloom", "Immersive Van Gogh", and "Forest of Us: Superblue", which are all very different yet equally effective immersive experiences. It will be analyzed how each of these exhibitions achieved telling a story, fulfilling the wish, enticing the senses, inclusiveness, and over successful layouts.

⁸ Erica McCay.

⁹ Erica McCay.

¹⁰ Eric P. Olsen, *The Principles of Spectacle: A Geographic Model* (N.p.: University of Wisconsin--Madison, 2003).

¹¹ Erica McCay, "7 Principles for Creating Immersive Worlds," Valtech, 2022, accessed June 3, 2023, <https://www.valtech.com/en-ca/blog/7-principles-for-creating-immersive-worlds/>.

¹² Erica McCay.

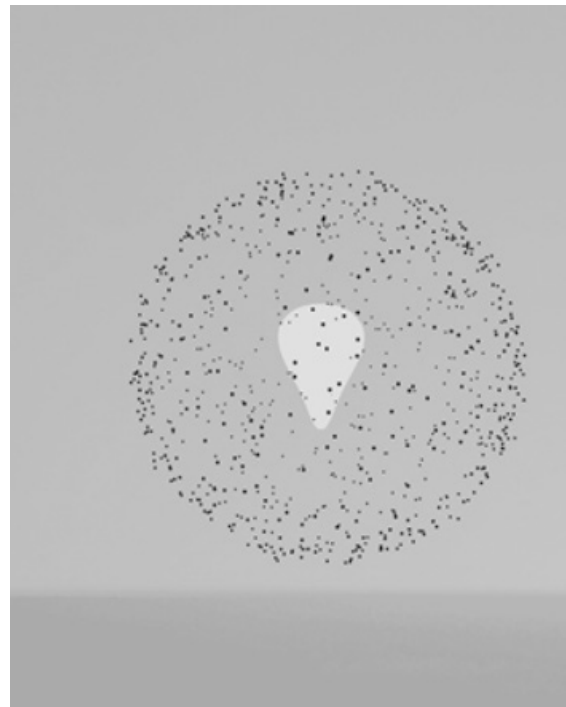


fig. 105-108: The Art of Bloom, 2019.

THE ART OF BLOOM

The Art of Bloom is an immersive and interactive experience centered on the symbiotic relationship between humans and nature. It was created by Intertrend in collaboration with design firm Daikoku Design Institute and exhibited July 2019 in downtown long beach, California. It engaged physical interaction by making use of sensor technology to capture visitors body temperatures. Showers of petals, light, and sound aim to “awaken the sense while creating a meditative space in which to more deeply ponder man’s relation ship to nature”.¹

Tell a Story:

Symbiosis is the theme of the debut installation of The Art of Bloom. Flowers have instilled in us great meaning and symbols. In turn, we cultivate flowers to help convey our deepest emotions, signal change, and celebrate life stages. Humans and flowers are stimulated by one another, reacting to each other to learn and grow.² Showers of petals, light, and sound will awaken our senses, and create a meditative space to connect to a deeper state of mind.

Fulfill the Wish:

With real flowers, light, and AR interactions that blend both the physical and digital, this exhibit gives you the opportunity to connect with nature in an elevated environment.

Entice all Senses:

This exhibition “stimulates not only sight, but also senses of smell, sound, and touch like you have never experienced.”³ They do this with the use of white floral bouquets, translucent vellum petals, and vibrant saturated lighting.

Use of Materials:

The exhibition “uses sensor technology to capture body temperature, and can connect physical interaction into the experience”.⁴ Taking microscopic scans of real flowers, the interactive projections allow one to connect with nature on both a micro and macro level, while also using real and vellum flowers.⁵

Inclusiveness:

This exhibition is accessible because it is all one level, and the sounds are not overwhelming.

Layout:

Layout allows for an entrance before entering, and two areas of decompression after the exhibit that allows one to take a minute and fully understand what they just experienced.

Order/Complexity:

The balance between order and complexity is a little closer to order as it is an overall simple concept. The added layers of smell and touch give a level of complexity for the user.

¹ “The Art of Bloom,” accessed June 3, 2023, <https://theartofbloom.com>.

² “The Art of Bloom”.

³ “The Art of Bloom”.

⁴ “The Art of Bloom”.

⁵ “The Art of Bloom”.

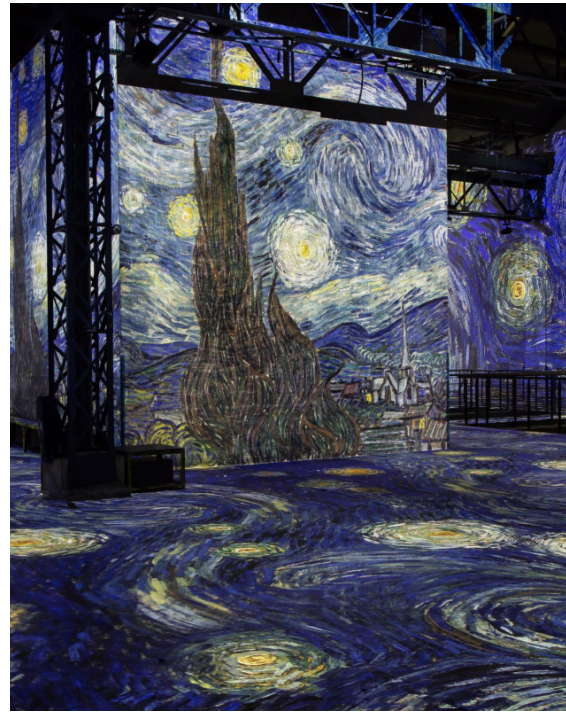


fig. 109-112: Immersive Van Gogh, 2021 - Currently.

IMMERSIVE VAN GOGH

Immersive Van Gogh features more than 500,000 cubic feet of Van Gogh paintings projected on the wall and floor of a large room and lasts one hour. The exhibition opened in September 2021 and is currently still happening. It includes all of Van Gogh's iconic works, as well as digital animations added to some that are set to original songs composed by Italian multimedia composer Luca Longobardi. It was created and run by one of the directors behind the Van Gogh show at Atelier des Lumieres in Paris.

Tell a Story:

The very concept of Imagine Van Gogh is grandiose: visitors wander amongst giant projections of the artist's paintings, swept away by every brushstroke, detail, painting medium and colour. Immersed in an extraordinary experience where all senses become fully awakened, viewers will be truly moved by such spectacular beauty. Visitors discover more than 200 of Van Gogh's paintings, including his most famous works, painted between 1888 and 1890 in Provence, Arles and Auvers-sur-Oise.¹ The entire experience is through projections only, no real paintings are seen, but the projections make them feel larger than life.

Fulfill the Wish:

The audience becomes a part of Van Gogh's work and creates an environment that is soothing and emotional. For some this may be better than going to see the actual paintings as they are projected larger and it eliminates the need to visit a museum.

Entice all Senses:

While only activating sounds and sight, this exhibition still manages to create an out-of-body experience by fully incorporating the audience within the work.²

Use of Materials:

The main material is projection so it is an overall easy exhibition for people to understand and interact with.

Inclusiveness:

Overall it is a pretty inclusive exhibit that every age group would enjoy. It does lack seating so it involves a lot of standing which makes it hard for some. The sound was at a good level that doesn't overwhelm people, and the visuals are at a good pace so everyone can feel involved.³

Layout:

Similar to most exhibitions there is a lobby, after that is an entrance area that has a written story so people can understand the point of the exhibition. Then you enter the large room where you are able to move at your own pace and exit whenever you like.⁴ The exhibition is contained within one room so it makes it easy to take in the full experience and not miss anything.

Order/Complexity:

Because the only material used is projection that creates a lot of order to the exhibition, the added complexity comes from the creative use of the projections. They move and advance the paintings and create a constantly changing and interesting viewpoint.

¹ "Van Gogh: The Immersive Experience," accessed June 3, 2023, <https://www.vangoghexhibit.ca>.

² "Van Gogh: The Immersive Experience".

³ "Van Gogh: The Immersive Experience".

⁴ "Van Gogh: The Immersive Experience".

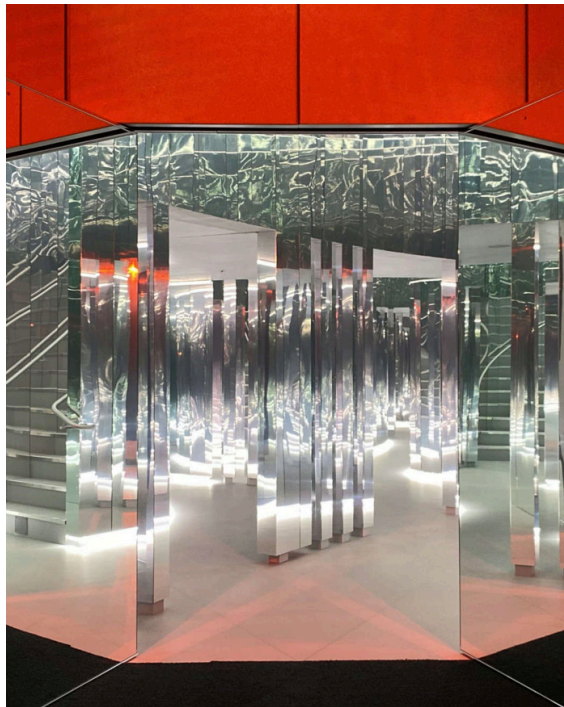


fig. 113-116: The Forest of Us, 2018.

FOREST OF US: SUPERBLUE

The Forest of Us was created by Es Devlin in 2018 and exhibition in the United Kingdom. It starts with a three minute video about human breathing and the breathing that trees do, the screen the becomes a portal into a two-story labyrinth comprised of optical-glass mirrors and polished aluminum dividers.

Tell a Story:

Forest of Us draws parallels between human breathing structures, the bronchial trees that exchange oxygen for carbon dioxide inside our lungs, and the trees that exchange carbon dioxide for oxygen in the world around us. After watching a short film that establishes the relationship between human respiration and the breathing that trees do, one will enter a maze of mirrors and begin trying to navigate its pathways, its mirrored walls reflecting every turn.¹ Surrounded and enveloped, the audience will begin to realize, as Devlin puts it, "that the exchange of gas that's going on inside of us and outside of us is mutually dependent."²

Fulfill the Wish:

The experience serves as a metaphor for the "dazzling feedback loops of human design that enchant our gaze so seductively we lose awareness of our connection to the rest of the biosphere."³

Entice all Senses:

Polyphonia created a soundtrack that encouraged the audience to explore the maze, inspiring the work to resonate with the audience. The audio system design featured over 75 speakers across the installation, including a surround sound film room, concealed speakers across the maze split into contrasting zones and floor based transducers creating sub-sonic sensory pockets.⁴

Use of Materials:

The main material used is mirrors and aluminum that are laid out in geometry forms to create optical illusions that confused and stimulate the user.

Inclusiveness:

This installation is not the most inclusive because of its complex nature. Visitors that might have difficulties include ones with that are hard of seeing or trouble walking may not enjoy this, also people who get claustrophobic or overwhelmed easily.

Layout:

The journey begins with a large open room that has hanging flowers above, this creates a calming environment before the complexity of the maze begins. They a then prompted with a video to watch and then the doors to the maze opens.⁵

Order/Complexity:

Forest of Us takes as its starting point the striking visual symmetries between the structures within humans that allow people to breathe and the structures around them that make breathing possible: the bronchial trees that exchange oxygen for carbon dioxide within our lungs and the trees which exchange carbon dioxide for oxygen within our environment.⁶

¹ "Digital Dozen: Forest of Us," accessed June 3, 2023, <https://digitaldozen.io/projects/forest-of-us/>.

² "Digital Dozen: Forest of Us".

³ "Digital Dozen: Forest of Us".

⁴ "Digital Dozen: Forest of Us".

⁵ "Digital Dozen: Forest of Us".

⁶ "Digital Dozen: Forest of Us".

CHAPTER FOUR - EXPECTATION OF THE SPECTACLE CONCLUSION

In conclusion, this chapter of research provides valuable insights into the exploration of immersive experiences and their integration into the realm of concerts, with the collaboration of architects. By taking a step back from traditional concert formats, the focus shifts towards understanding the needs and desires of audiences in order to create transformative and engaging experiences.

Immersive experiences have become increasingly sought-after in various entertainment fields, offering a unique way to captivate and connect with audiences on a deeper level. By applying architectural principles and design thinking, concerts can be transformed into immersive spectacles that go beyond the boundaries of traditional performances.

Architects play a pivotal role in this process, as their expertise in spatial design, acoustics, and atmosphere can greatly enhance the concert experience. By collaborating closely with artists, event organizers, and production teams, architects can bring innovative ideas and concepts to the table, creating visually stunning and emotionally evocative concert environments.

These immersive concert experiences have the potential to satisfy the growing demand for more interactive and multisensory engagements. By integrating elements such as projection mapping, interactive installations, spatial sound design, and dynamic lighting, architects can help shape the physical spaces in a way that immerses the audience in a truly transformative journey.

Moreover, the inclusion of immersive technologies like virtual reality (VR) and augmented reality (AR) further expands the possibilities for creating captivating concert experiences. Architects can work hand in hand with technology experts to seamlessly integrate these technologies into the concert environment, blurring the boundaries between reality and the virtual world.

By embracing the needs and wants of immersive experiences, and by collaborating with architects, the concert realm can evolve into a more dynamic and engaging form of entertainment. These endeavors have the potential to redefine the concert experience, offering audiences unforgettable moments of connection, exploration, and immersion.

CHAPTER FOUR: ORDER & COMPLEXITY WITHIN CONCERT STAGE DESIGN

LOGISTICS OF CONCERT DESIGN

In the world of concert production, the logistics of setting up and taking down stages for large arena style concerts are crucial to the success of the event. At the end of the day we can imagine these spectacular concert stage designs, but if they can't be set-up and taken down in the same day and also loaded up onto truck then the show can't happen.¹

During the concert itself, understanding the logistics of transitioning between songs is essential. This involves coordinating the movement of equipment, instruments, and props on and off the stage in a seamless manner. Stage crews work diligently behind the scenes to ensure that the stage is set up for each performance, making sure that everything is in its right place and ready for the next act. Quick and efficient stage changes are vital to keep the momentum of the concert going and to maintain the audience's engagement.

Then looking into a typical 24-hour timeline for a large arena style concert, from start to finish. This study focuses on a large concert venue but similar requirements need to be made for any concert that has more than just lights and speakers. The difficulty of the stage design will vary based on its size and complexity, but proper consideration always needs to be made to understand the limitations inferred on the design by the time and travel restrictions.

In conclusion, the logistics of setting up and taking down stages for large arena-style concerts are integral to the overall success of the event. Understanding the intricacies of transitioning between songs during the concert and meticulously planning the 24-hour timeline from start to finish are essential. By considering the limitations imposed by time and travel restrictions, concert production teams can create efficient and well-executed stage designs that allow for seamless transitions, contributing to an unforgettable concert experience for both artists and audiences.

¹ "The logistics of stadium set design," Designweek, 2009, accessed June 3, 2023, <https://www.designweek.co.uk/issues/july-2009-online/the-logistics-of-stadium-set-design/>.



fig. 117: Taylor Swifts "Eras Tour" Fearless album, 2023.



fig. 118: Taylor Swifts "Eras Tour" Evermore album, 2023.

LOGISTICS DURING THE CONCERT

In the context of designing concert stages that travel from city to city, it is crucial to recognize that the sets are not simply static backdrops but rather dynamic environments that undergo deliberate changes during the performance. This characteristic aligns more closely with the realm of live theatre or ballet, where the seamless transformation of sets adds interest, emotion, and artistic value to the show.

Unlike simple sets that only rely on lighting changes for variation, the incorporation of dynamic set elements presents a unique challenge and opportunity for the design process. It introduces a heightened level of complexity, not only in terms of aesthetics but also with regard to safety considerations during the live performance. The design must account for the movement and reconfiguration of set pieces, ensuring smooth transitions that enhance the emotional impact of the music and the overall experience for the audience.

By acknowledging the non-static nature of sets and integrating this concept into the design process, a more nuanced understanding of the requirements and possibilities of stage design emerges. It becomes imperative to consider not only the visual impact but also the practical aspects of set changes, such as ease of movement, stability, and safety precautions. This additional layer of complexity elevates the design process and underscores the importance of a holistic approach that considers both artistic vision and technical feasibility.

This can be seen in Taylor Swifts most recent tour, "The Eras Tour", where the stage changed for almost every song.¹ The concert "starts in a hazy pink, cotton candy dreamscape ends in a sultry, sparkling twilight, with plenty of undulating stops in the middle, from ethereal fairytale woods to the energetic skyscrapers of the concrete jungle".² The most striking moment was the transition between albums "Fearless" to "Evermore", where the woods seemed to grow out of the stage. This concert design shows what is possible for flexibility between songs and how these transitions can work.

The way Taylor Swifts transitions between songs and albums were created was that each album had a different area on the stage so while she was singing the three song from an album the base of that stage would stay the same but elements and lights would change for each song. Then she would move to a new place on the large stage for the next album and do that same thing. While she was in the new stage area, the stage hands could change the previous backdrops for the next album.

¹ McLaughlin, Katherine, "The Eras Tour: The Intricate World-Building Behind Taylor Swift's Most Ambitious Sets Ever," Architectural Digest, March 24, 2023, https://www.architecturaldigest.com/story/the-eras-tour-set-design?utm_source=ground.news&utm_medium=referral.

² McLaughlin.

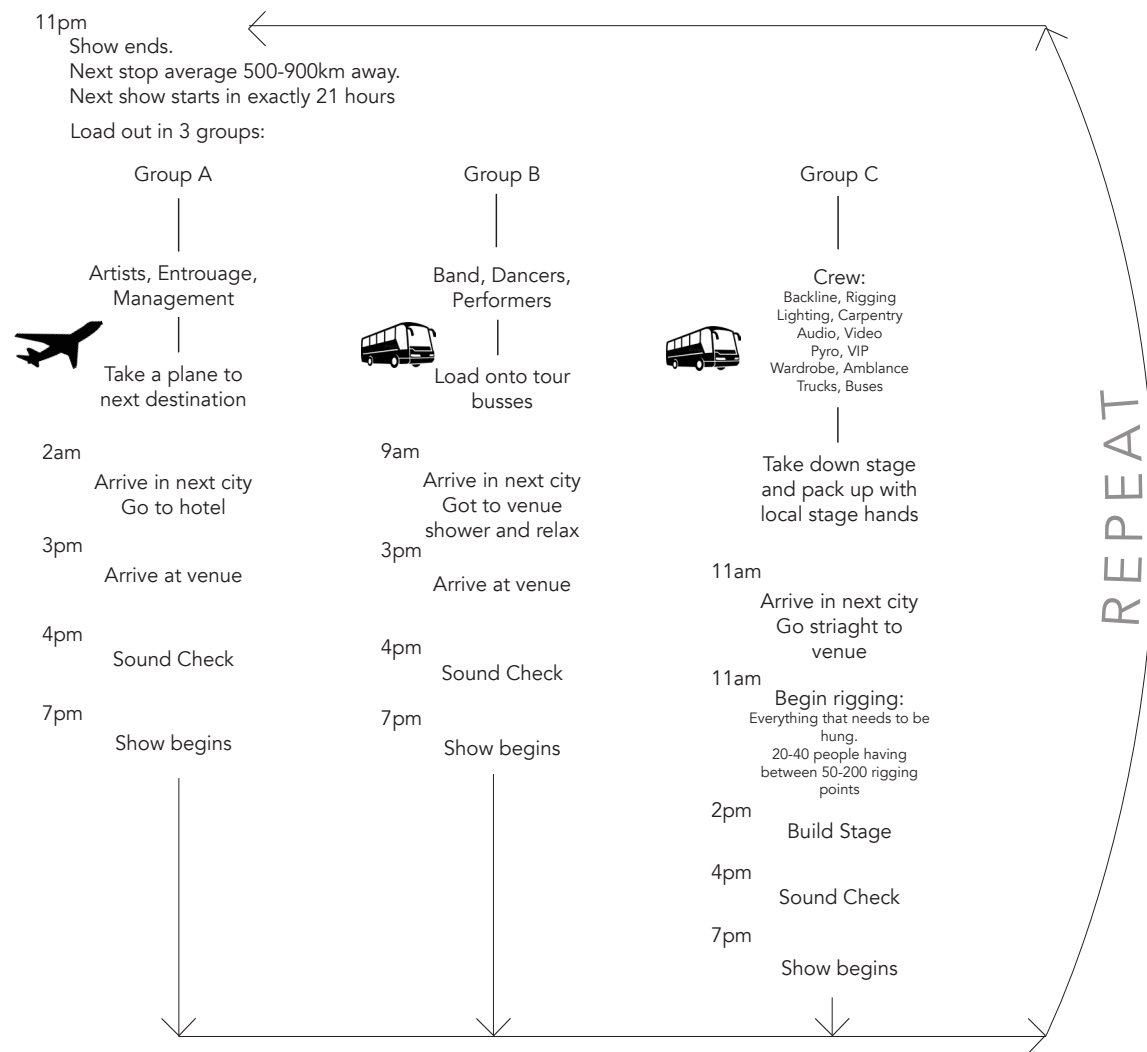


fig. 119: Diagram outlining the timeline of a typical arena sized concert.

24-HOUR TIMELINE OF A TYPICAL LARGE VENUE CONCERT

Similarly to the transition between each song, the movement between each venue is equally important. It is only possible to have a dynamic stage that continues to change throughout the show if it can be taken down and transported to the next venue. Now let's look at what a typical 24-hours will look like for a large venue concert:

At 11 PM, as the show ends and the audience starts to leave, the process of dismantling the stage promptly begins. This time is crucial because the next stop on the tour is usually located an average distance of 500-900 kilometers away and starts in exactly 21 hours. To efficiently manage the logistics, everyone involved with the show is split into three groups, each taking different routes to the next venue.¹

The first group includes the artists, entourage, and management team who will immediately board a flight right after the show is done and arrive in the new city around 2 AM (with some variation depending on the distance). From the airport, they will go straight to the hotel and rest until they need to arrive at the new venue at 3 PM for sound check at 4 PM, followed by the show at 7 PM.²

The second group includes the band, dancers, performers involved in the show. After the concert, they will load onto a tour bus and drive to the next city. They arrive at the destination around 9 AM and will head straight to the venue, where they can shower and relax before sound check at 4 PM.³ This is all relevant to depending on the distances between the venues, further distances may need to add an extra day between shows.

The last group is comprised of the crew responsible for various aspects of the productions including backline, rigging, lighting, carpentry, audio, video, pyro, and wardrobe. Following the end of the show, the crew will start taking down the stage with local helpers from the city.⁴ Everything is packed and loaded onto trucks and head to the next venue, aiming to arrive before noon. Upon arrival, they immediately begin setting it back up with a new set of stage helpers from this city.⁵

The first step in this process is rigging, which is marking where various elements need to be hung. This flexible hanging system allows the stage to be adapted to different sized arenas. This on the fly hanging system is done by 20-40 people and typically involves about 50-200 rigging points.⁶ They strive to have this task complete within 3 hours. After the rigging is complete, the crew will assemble the stage and ensures everything is set up for sound check at 4 PM. Following this, the crew heads to a hotel for rest during the show and will arrive back at the venue at 11 PM to begin the take down process. At 7pm the concert begins, and the arena is transformed into a captivating spectacle for one night.⁷

¹ "The logistics of stadium set design," Designweek, 2009, accessed June 3, 2023, <https://www.designweek.co.uk/issues/july-2009-online/the-logistics-of-stadium-set-design/>.

² "The Absurd Logistics of Concert Tours," YouTube video, September 22, 2022, accessed June 3, 2023, <https://www.youtube.com/watch?v=MY8AB1wY0tg>.

³ "The Absurd Logistics of Concert Tours".

⁴ "The Absurd Logistics of Concert Tours,"

⁵ "The Absurd Logistics of Concert Tours,"

⁶ "The Absurd Logistics of Concert Tours,"

⁷ "The Absurd Logistics of Concert Tours,"

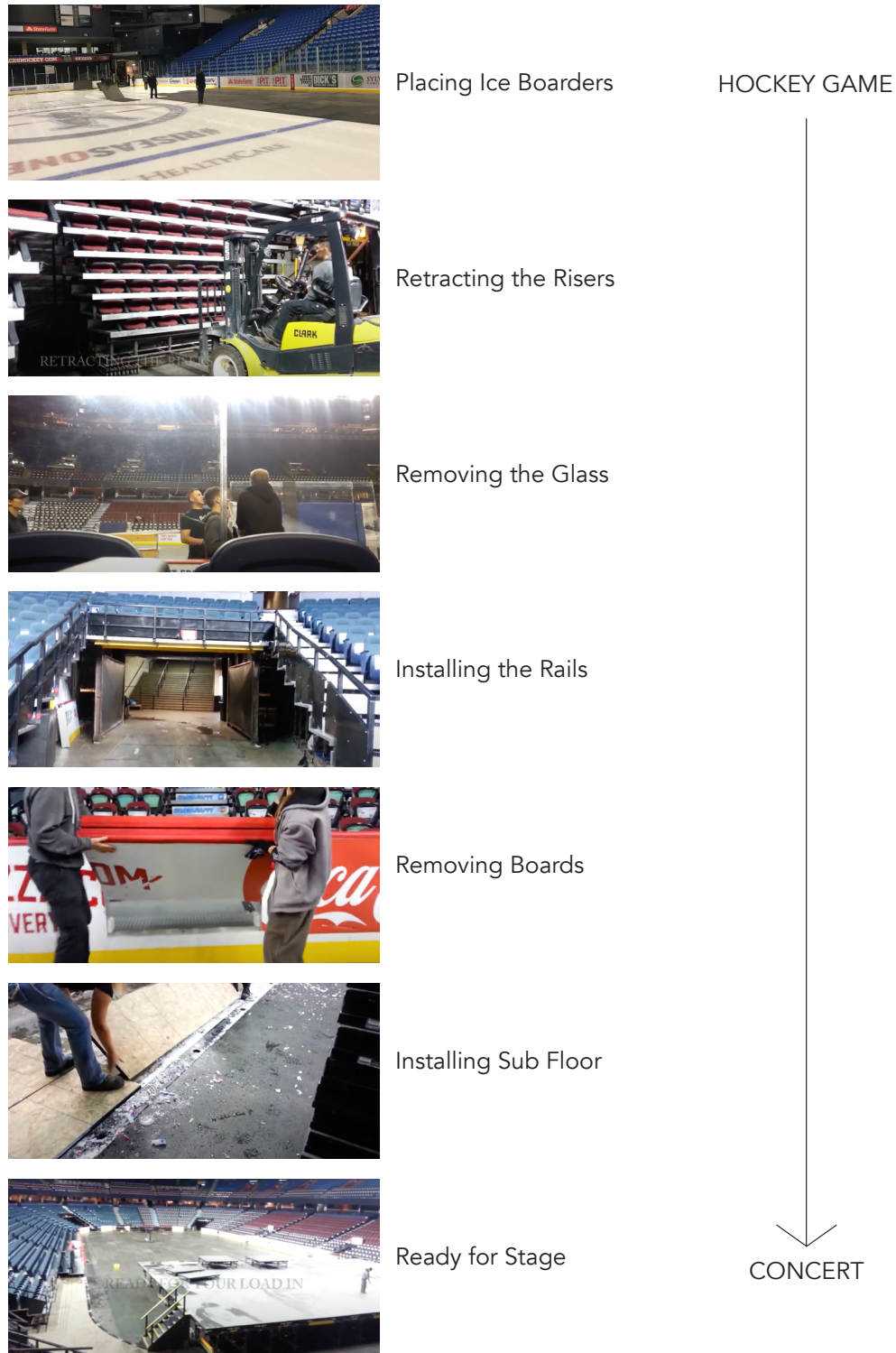


fig. 120: Steps to transition an arena from a hockey game to a concert.⁵

When analyzing the logistics of a concert it is important to also look at the different events that take place at each venue. Taking the example of Scotiabank Arena in Toronto for the month of March 2023, there is an event scheduled every night for 13 days in a row (see fig 115).¹ The venue goes from a hockey game on Saturday to a concert Sunday, back to a hockey game Monday, then switches to a basketball game Tuesday. This is a common schedule for arenas and means that each event only has 24 hours to host their event, including set-up, take-down and the event itself.²

Converting the arena from a hockey game to a concert is quite straightforward and takes approximately two hours.³ The process starts by placing ice mats over the rink to create a new soft ground and retracting the first section of seats. The boards, glass and rail are removed and new rails are set up. Once the floor space is set up another layer of subfloor gets laid down and the stage can begin to be built on this. The process is very similar for a basketball game as its floor is built on top of this sub floor (see fig. 114).⁴

Overall, the seamless execution of the setup, takedown, and transportation processes is imperative to ensure the success of arena style concerts. With proper design and organization, a concert can run smoothly, even when faced with tight timelines and demanding schedules.

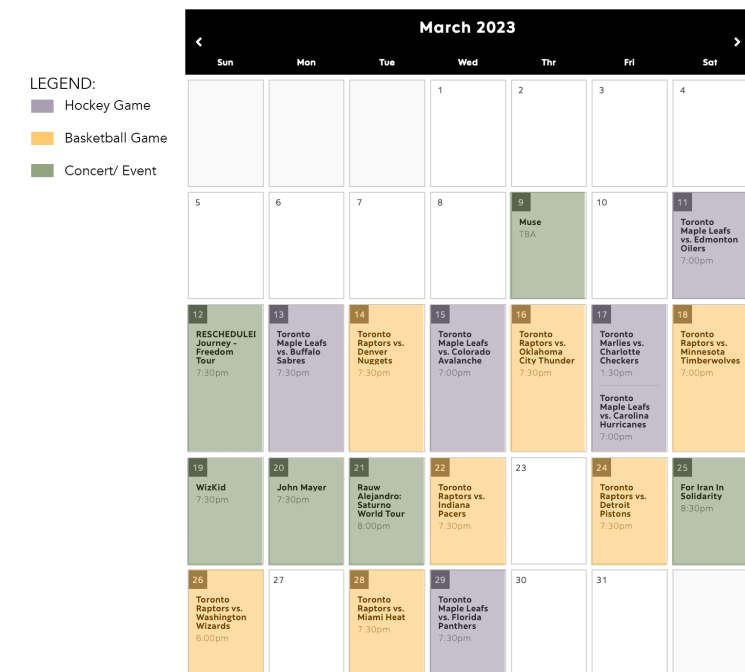


fig. 121: Scotia Bank calendar for March 2023.

1 Scotiabank Arena, "Calendar | Scotiabank Arena," accessed June 3, 2023, <https://www.scotiabankarena.com/events-1/calendar>.

2 Scotiabank Arena, "Calendar | Scotiabank Arena".

3 YouTube, "Hockey to Concert Changeover," November 21, 2016, accessed June 3, 2023, <https://www.youtube.com/watch?v=SSjbmj5e0w8>.

4 YouTube, "Hockey to Concert Changeover".

5 YouTube, "Hockey to Concert Changeover".

CHAPTER FOUR - LOGISTICS OF CONCERT DESIGN: CONCLUSION

In conclusion, the logistics of concert design encompass a wide range of considerations, including the challenges of transitioning between different venues within a tight timeframe and the seamless adaptation between songs. Within this design realm, architects can play a crucial role in optimizing these logistical aspects and enhancing the overall concert experience.

The nature of concert tours often requires artists and their production teams to navigate a demanding schedule, traveling from one venue to another within a short span of time, sometimes as little as 24 hours. This presents logistical challenges in terms of transportation, setup, and sound checks, all while ensuring that the concert experience remains consistent and of high quality.

Architects can bring a valuable perspective to this process by applying their expertise in spatial planning, efficient utilization of resources, and problem-solving. They can collaborate with event organizers and production teams to design efficient touring strategies, taking into account factors such as proximity between venues, transportation logistics, and optimizing setup times. Through careful planning and coordination, architects can help streamline the logistical challenges, ensuring smooth transitions between venues and minimizing downtime.

Another crucial aspect of concert design logistics is the adaptation between songs within a live performance. Each song often requires unique staging, lighting, and visual elements to complement the mood and narrative. Architects can create a cohesive and dynamic stage design that seamlessly transitions from one song to the next.

Architects' understanding of spatial dynamics and visual storytelling enables them to design stage sets that facilitate quick and efficient scene changes. This may involve incorporating modular elements, automated stage machinery, or creative use of lighting and visual effects to create seamless transitions. The goal is to maintain the audience's engagement and create a sense of flow throughout the concert, enhancing the overall experience.

Architects can also contribute to the concert design realm by leveraging their expertise in acoustics and sound engineering. They can work closely with audio professionals to optimize the sound quality in different venues, considering factors such as venue size, architectural acoustics, and audience experience. By ensuring clear and balanced sound throughout the concert, architects contribute to the immersive and impactful nature of the performance.

CHAPTER FIVE: DESIGN WORK

INTRODUCTION

The design section of this architectural thesis demonstrates the profound impact that architecture can have in developing an immersive, cathartic environment to amplify the experience of a live concert. Expanding on the previous investigations, the knowledge and insights gained are now being applied to a series of design proposals. These proposals emerge as a result of a careful analysis of how various stage shapes and elements can provoke differing emotions.

Through reflecting on the research and analysis conducted in the previous sections of this thesis, three stages have been developed, each embodying a distinct form and stage type to address a different intention. Each stage design recalls discoveries from past chapters in order to explain its ability to create a spectacle, describe the process and methods of setting up and taking down, and the reveal the use of time, sound, scale, light, space, and the audience.

The design process started by creating a series of vignettes of differing stage shapes, assessing their potential perform positively, be adaptable, and to evoke different emotions. These vignettes serve as initial explorations into the transformative power of architecture in concert experiences. By drawing upon the knowledge acquired from the research and analysis, the final design proposals have emerged.

The three stages that came from the stage shape vignettes are a front stage, a thrust stage, and a center stage. They are each designed to be flexible, allowing for slight modifications and adaptability. This flexibility enhances their artistic value and utility, ensuring that they can accommodate multiple songs and performances.

Within concert stage design, the goal is to create cathartic and immersive experience that transcends the boundaries of traditional performances. Effective stage design parallels to the distinction between a custom designed home or curated museum as opposed to a builder house or speculative office building. One is meticulously designed to reflect the unique preferences and identity of its inhabitants, while the latter offers a more standardized approach that lacks in personalization. Traditionally, lower-tier concert performances have been associated with simplistic setups of box stages and basic smoke and lights effects. This situation recalls the design equivalence to purchasing a builder house. While these options may be more affordable and accessible, they often lack the depth and individuality and limit the artistic potential for the performance to reach to new heights. Metaphorically, it is like painting the walls of a cookie cutter house a different color in order to add a semblance of personal touch, while still being limited by its generic structure. However, the approach here lies in the middle ground, where a fusion of high-end customization and a design that is more attuned to the artist's vision and expression work together to produce powerful and efficient designs. Instead of treating the artist as a mere participant, they are understood as a client, deeply invested in their unique artistic journey. The concert stage becomes a canvas where architectural elements and design choices intertwine with the artist's creative expression.

By delving into the immersive concert design, these stage designs transcend the notion of aiming for a faceless, generic audience. Instead, the design strives to create a space that speaks directly to the artist's soul, evoking emotions and connecting with their audience on a profound level. This tailored approach unlocks endless possibilities, allowing the stage to shape in ways that harmonize with the artist's aesthetic, musical genre, and desired atmosphere.



fig. 122: Photograph of Labrinth.

LABRINTH INTRODUCTION

I selected Labrinth as the subject of my designs because he is an emerging artist without prior experience of touring or having specific stage designs for his shows. This way I could avoid following what has previously been done and instead take a more natural approach to the design process. I was able to focus on the music and what Labrinth is trying to portray to his fans and let this feed into the design decisions.

With Labrinth's music as the guiding inspiration, I could fully immerse myself in understanding his artistic vision and how it resonates with his audience. This deep dive into his musical world became the driving force behind the design decisions. Instead of being influenced by pre-existing stage designs, I took a more natural and intuitive approach, allowing the music itself to guide and shape the design process.

By embracing Labrinth's musical journey and the emotions he aims to evoke in his fans, I ensured that the design decisions were aligned with his artistic intent. This approach facilitated a deeper connection between the music and the stage design, resulting in a more authentic and cohesive concert experience.

Labrinth is a multiplatinum-selling singer, songwriter, producer, and composer of one of 2019's biggest shows, HBO's *Euphoria*.¹ In addition to lending his singular, genre-blending sound to the series, Labrinth wrote and performed the show's finale-capping song "All For Us" featuring Zendaya, which won an Emmy for Outstanding Original Music and Lyrics for. His score has also recently garnered an Ivor Novello win for "Best Television Soundtrack" and further Emmy nomination for Outstanding Music Composition for a series. The score soundtrack has so far generate over 600 million streams worldwide.²

As a solo artist, Labrinth is best known for global hits including "Jealous", which to date has garnered over 415 million streams on Spotify alone.³ Labrinth is one third supergroup LSD, alongside Sia and Diplo, whose titular debut album had garnered over 1 billion streams worldwide in the year since its release. He has collaborated with Beyonce, co-writing and co-producing the Golden Globe and Grammy nominated song "Spirit", the lead single in Disney's 2019 live-action *The Lion King*. Other artists he has collaborated with include Nicki Minaj, Eminem, The Weeknd, Ed Sheeran, and Kanye West on the album *Jesus is King*. Labrinth's most recent album *Imagination & The Misfit Kid* includes singles "Miracle", "Mount Everest and the aforementioned "All For Us".⁴

¹ Labrinth, "Labrinth," Spotify, accessed June 20, 2023, <https://open.spotify.com/artist/2feDdbD5araYcm6JhFHHw7>.

² "Labrinth" Spotify.

³ "Labrinth" Spotify.

⁴ "Labrinth" Spotify.

STAGE SHAPE VIGNETTES INTRODUCTION

The design exploration for concert stage design began with the creation of stage shape vignettes. Each vignette was conceived with the intention of accommodating a small arena-sized tour, where a standing audience would be present. The primary focus was to envision a stage that could cater to approximately 700 standing individuals. The mosh pit style of audience and overall size of audience was chosen because it achieves the maximum energy and interaction with the performer. It creates a dynamic connection between performer and audience member that would highlight the strengths and weaknesses of each stage shape to the fullest. These diagrams aim to push the boundaries of traditional stage shapes by incorporating architectural analysis and innovation.

This design exercise begins to prove the point of the necessity of architects within this discipline because of the advanced stage shapes being presented. The vignettes push the boundaries of typical concert designs and use critical design work to keep iterating different ideas.

Following the completion of these 22 options, a thorough evaluation was conducted, considering the strengths, weaknesses and flexibility of each design. Subsequently, three stage shapes were selected, each being a different stage shape to proceed with further development. These chosen shapes were deliberately distinct from one another to demonstrate how varying architectural elements can engender diverse emotional environments for the audience.

FRONT STAGE - The Tiered Stage

This stage is an innovative front stage design characterized by its distinct multi-level structure. Comprised of three different levels, this stage configuration provides a dynamic platform for the performer to engage with the audience and explore added possibilities of movement and engagement, elevating the overall performance to new heights.

The stage's notable advantages lie in the inherent simplicity it offers when it comes to both setting up and dismantling, alongside the heightened degree of mobility it affords the performer. Undeniably, this particular design choice introduces a drawback in terms of its static foundational structure, which inevitably restricts the desired versatility between songs.



fig. 123: Tiered Stage Section.

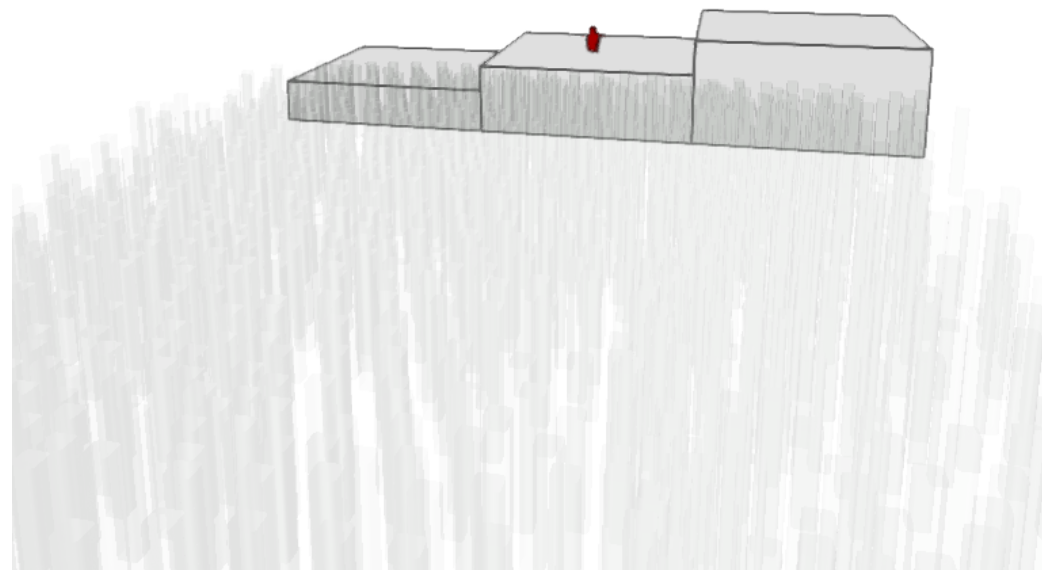


fig. 124: Tiered Stage.

FRONT STAGE - The Two Triangle Stage

This design incorporates a front stage orientation, comprised of two distinct levels of triangles. This configuration offers an innovative backdrop option, allowing one set of triangles to serve as a visually captivating backdrop to the front stage. The interplay between the two levels creates a visually dynamic composition, adding depth and dimension to the performance space while providing opportunities for creative staging, lighting, and projections.

The positives of this stage design primarily stem from the unique utilization of the cut edge. This feature creates an intimate space where the audience can draw closer to the performer, and fosters a sense of inclusivity by making them an integral part of the stage itself. Another advantage lies in the second level positioned behind the main stage area. This elevated platform offers a versatile canvas for various projections, allowing for seamless transitions and enhanced visual effects between songs. However, while projections provide one avenue for adaptability, this stage design may lack other options for modification and customization throughout the concert. The inherent limitation in terms of structural versatility could potentially restrict the artist's ability to introduce additional stage elements or configurations to suit specific moments or themes within the performance.

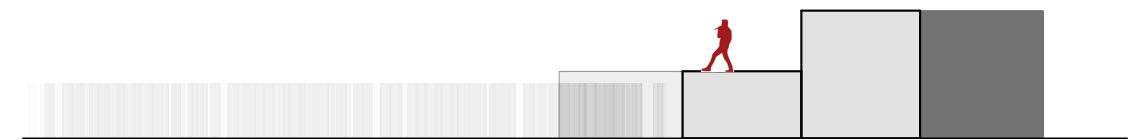


fig. 125: Two triangle stage section.

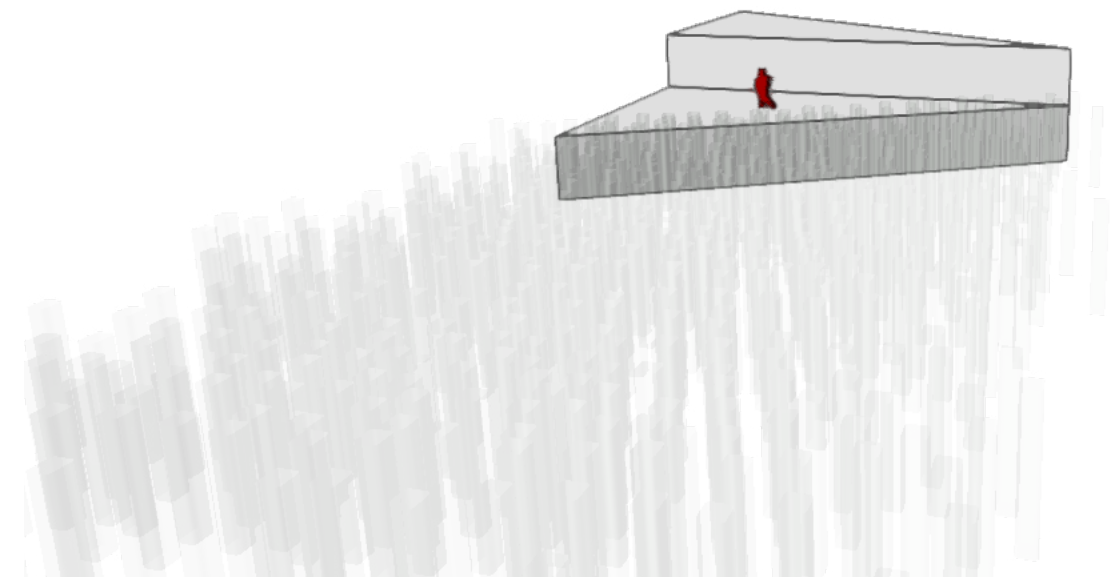


fig. 126: Two triangle stage.

FRONT STAGE - The Wall Stage

This design consists of movable walls that can create barriers and obstacles for the performer to interact with. These walls can be adjusted to different heights, allowing for the creation of barriers and obstacles that the performer can dynamically engage with during the performance. Moreover, the walls serve as a flexible backdrop that can be utilized for projections, enhancing the visual storytelling and creating immersive environments that complement the music and performance.

The positives with this design is the interrelation between different materials, as the walls can be solid or transparent, depending on the performers intentions. Additionally, the stage design offers a enhanced degree of flexibility due to the numerous possible configurations of the walls. The number of walls, their respective heights, and the ease with which they can be added or removed during the show contribute to the dynamic nature of the stage. This adaptability empowers performers to create diverse and immersive experiences, allowing for seamless transitions and the ability to adjust the stage environment on the fly. Whether used as physical props, surfaces for visual effects, or structural elements for choreography, the walls become an integral part of the performance, enhancing the overall impact and theatricality.



fig. 127: Wall stage section.

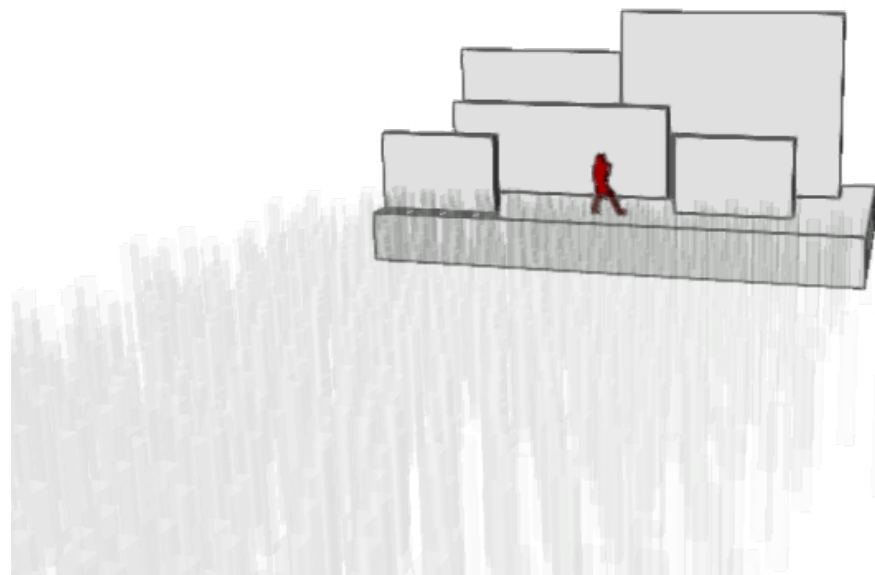


fig. 128: Wall stage.

FRONT STAGE - The Two Height Backdrop Stage

This design is a simple yet impact front stage that features two large boxes positioned at differing heights behind the performer. These boxes serve a dual purpose, functioning both as platforms for the artist to walk on and as surfaces for projections. This creates an increased potential for more versatile and visually captivating performances.

This design offers flexibility in terms of backdrop heights, allowing for the creation of visually dynamic stages with varying levels. The adjustable backdrops add depth and dimension to the performance, enhancing the overall aesthetic appeal. Additionally, the backdrops serve as versatile surfaces for projections, enabling performers to transform the stage into different environments and reinforce the thematic elements of their songs. However, this design may have limitations when it comes to adapting to different songs, as it may require additional added elements to the stage to change the environment for a new song.



fig. 129: Two height backdrop section.

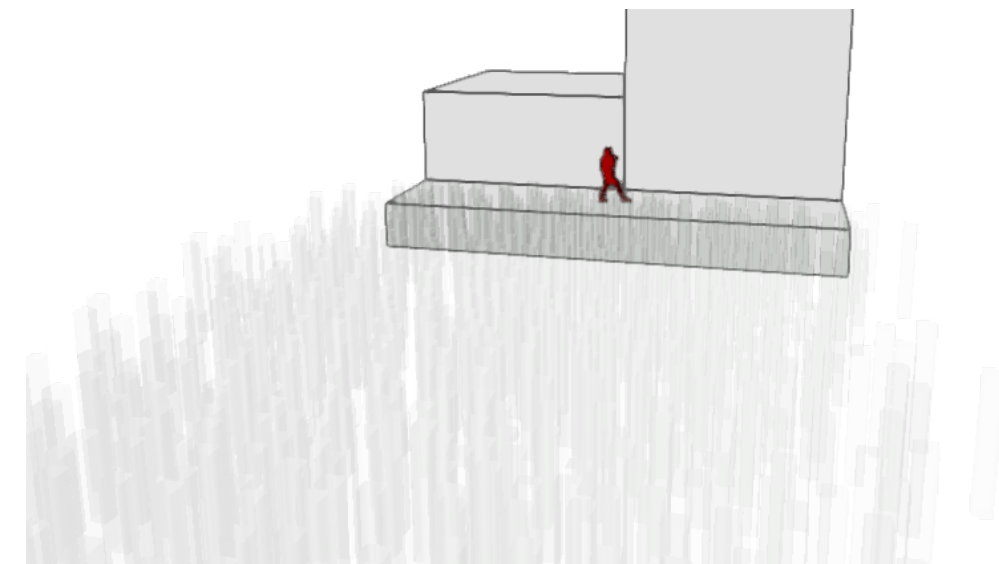


fig. 130: Two height backdrop.

FRONT STAGE - The Roof Stage

This stage design is a front stage configuration that utilizes a hanging structure above the performer. This architectural element envelops the artist, creating an intimate and encapsulated environment for the performance. The roof creates a sense of closeness and connection between the performer and audience.

The advantage to this design is that its uniqueness creates an impactful environment for the audience. Using a suspended roof as the primary architectural elements within the context of an arena is bound to capture attention and create a memorable experience for viewers. However, a potential drawback associated with this design is that due to its specific structure, any sight-lines from above the stage might be obstructed, preventing those viewing from elevated positions from having a clear view of the performer. This limitation could impact the overall viewing experience for certain sections of the audience, particularly those situated in higher seating areas or balconies. The design's lack of flexibility is evident in the limited functionality of the roof as it serves a singular purpose of creating a visual element above the performer. The absence of opportunities for audience engagement with the roof could potentially limit the overall immersive and participatory experience that some concertgoers may seek.



fig. 131: Roof stage.

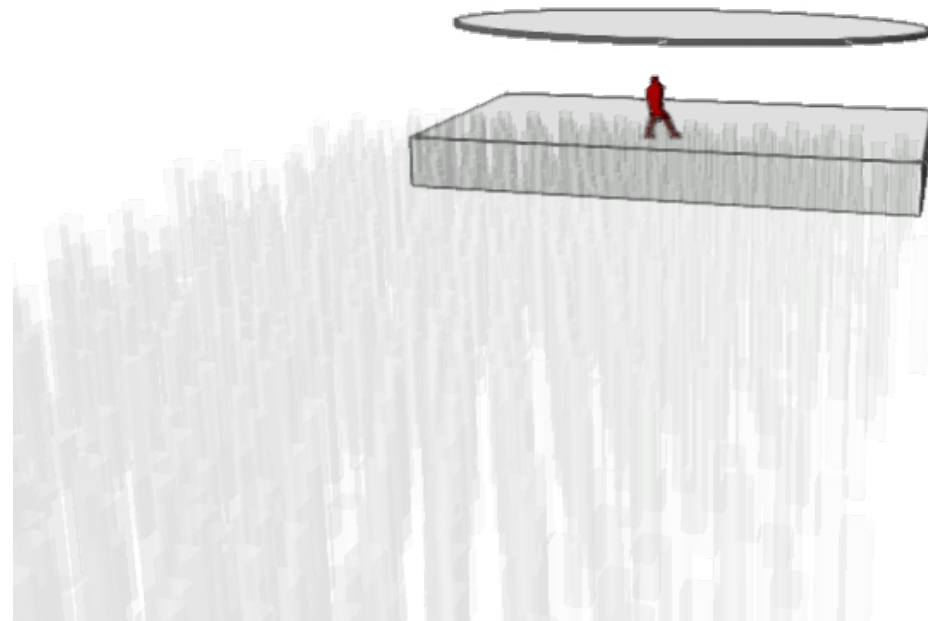


fig. 132: Roof stage.

FRONT STAGE - The Stairs Stage

This design is a front stage configuration comprised of a full staircase that extends all the way down to the floor. This formal composition provides ample space for the performer to navigate and move freely, utilizing the staircase as an expressive element of their performance. The inclusion of the staircase not only adds an architectural focal point but also offers dynamic opportunities for choreography and dramatic entrances or exits, enhancing the overall visual impact and stage presence of the artist.

The design element of a staircase on a stage offers some advantages in terms of flexibility and interaction with the audience. It can provide additional spaces for the performers to utilize, adding layers and dimensions to the performance. However, the repetitive use of the staircase in performances could potentially limit the variety of movements over time. After a few songs, there may be a natural tendency for the choreography to become predictable or monotonous if the performers are primarily using the staircase for their movements.



fig. 133: Stair stage.

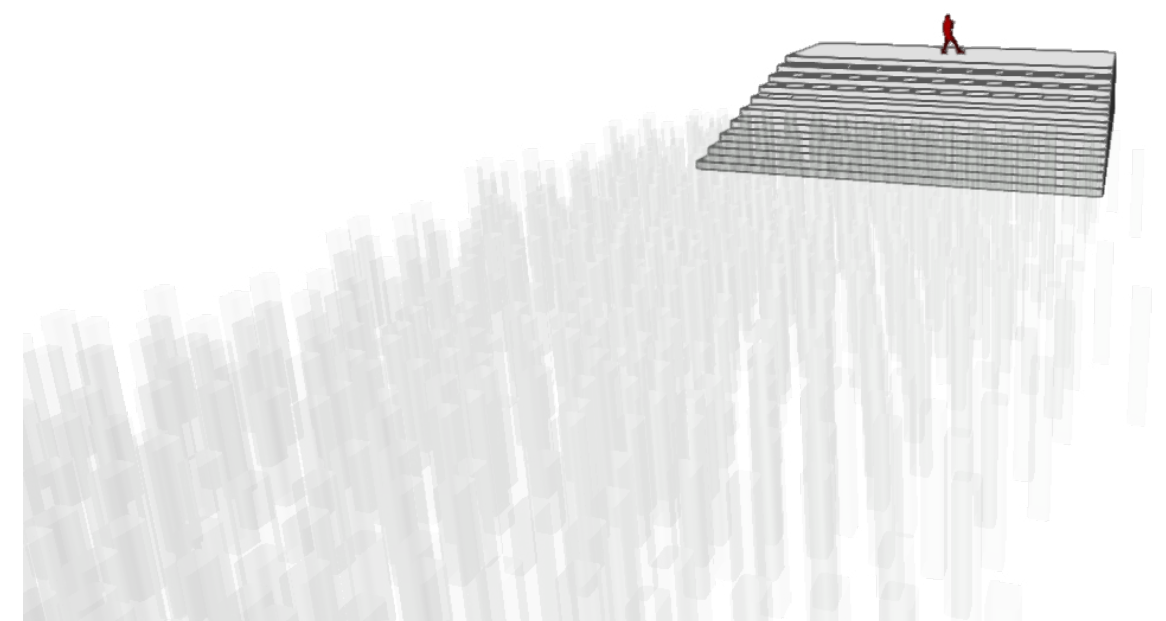


fig. 134: Stair stage.

FRONT STAGE - The Tilted Roof Stage

This design is a front stage with an added roof element that protrudes at an angle from the back of the stage over the performer and audience. The tilted roof serves multiple purposes, not only providing a visually captivating backdrop but also acting as an acoustic enhancer, projecting the sound towards the audience and creating a more immersive and dynamic audio experience.

This design is simple in nature, but can be highly impactful as an architectural element. The use of projections on the roof adds another layer of versatility to the design. By projecting different visuals, patterns, or scenes onto the roof, the environment can be transformed to match the mood and themes of each song. This visual element adds an extra dimension to the performance, engaging the audience's senses and complementing the music and choreography. The ability to adjust the height and size of the roof during the show further enhances its flexibility. This feature allows for effectual changes in the performance space, creating visual interest and variety. By manipulating the roof, the stage can be transformed into different configurations or spatial arrangements, keeping the audience's attention and providing fresh perspectives throughout the concert. The concept of a floating roof that can be pulled apart, together, up, and down adds a captivating and interactive element to the concert experience. These movements can be synchronized with the music and choreography, amplifying the impact and creating a sense of anticipation and surprise for the audience.

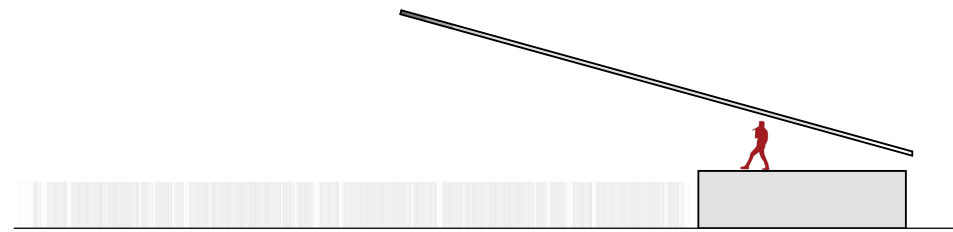


fig. 135: Tilted Roof Stage Section.

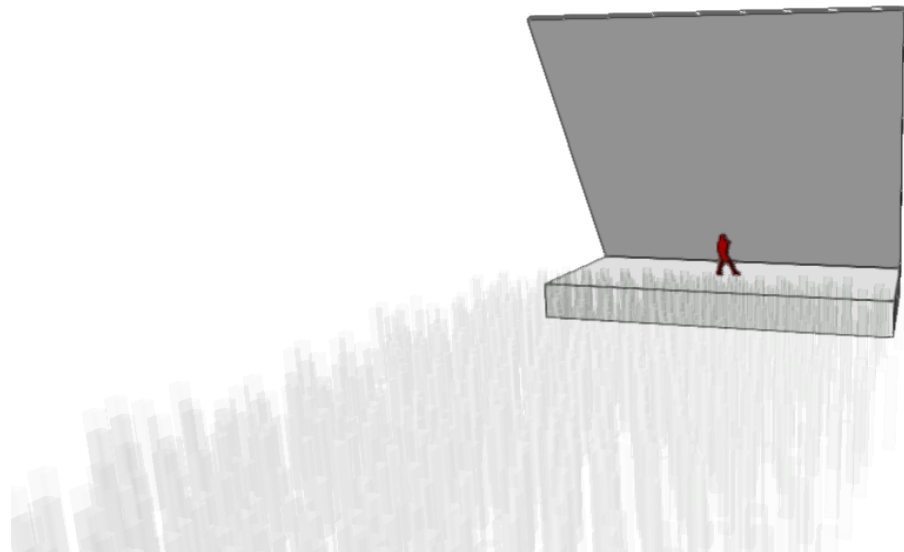


fig. 136: Tilted Roof Stage.

FRONT STAGE - The Two Tilted Roof Stage

The design is a front stage with a split roof covering the audience on each side of the stage. These tilted roofs serve as visual elements for the audience and provide space for additional lights and projections. Similarly to the "Tilted Roof Stage", the roofs have the potential to be lifted and moved throughout the concert, offering adaptability for the performer. While they add visual interest to the stage, they may lack a certain level of interaction with both the performer and the audience, giving the impression of a secondary thought in the overall design.

Unlike the "Tilted Roof Stage", the roof structures of this stage exist on the same plane as the performer, only covering the audience. This may reduce the effect of creating an immersive environment that connects the audience with the performer and in fact create a feeling of disconnect and hierarchy. This may provide an added dimension to the performance or restrict the experience depending on the performer's styles and themes.

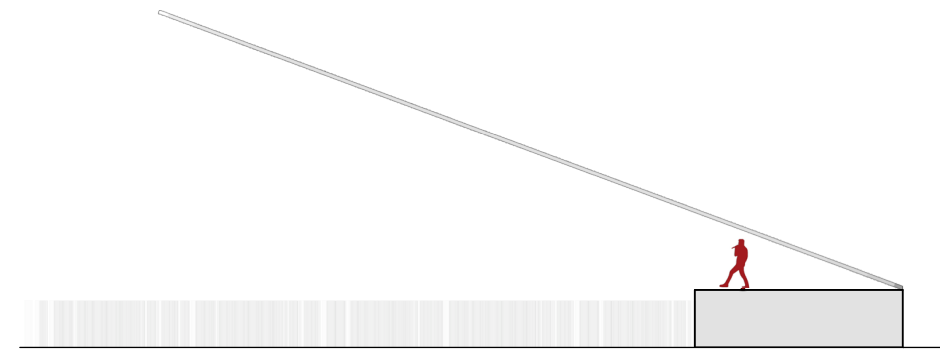


fig. 137: Two Tilted Roofs Stage Section.

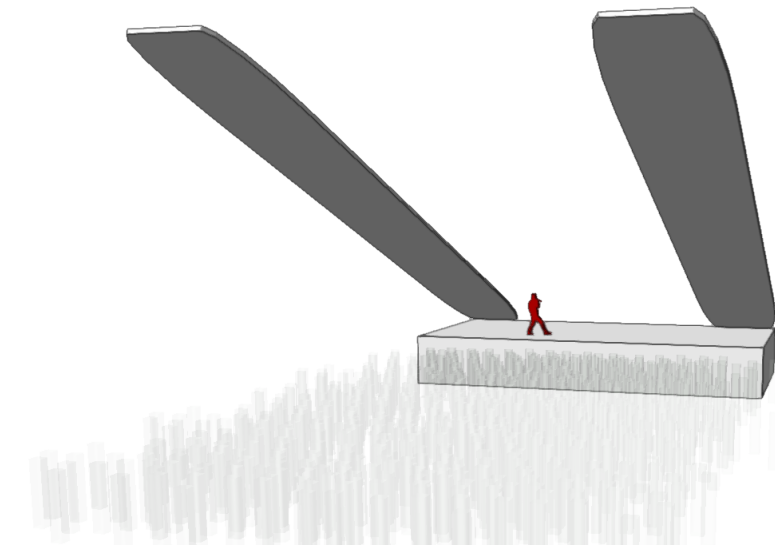


fig. 138: Two Tilted Roofs Stage.

THRUST STAGE - The Wing Stage

This design is a profile stage with two parallel walkways that ramp upwards as they protrude into the audience. These walkways add an aesthetic appeal to the stage and also offer enhanced accessibility and visibility for the performer, allowing them to engage with the audience more.

This stage lends itself to the audiences overall experience as it allows them to view the performer from multiple angles and vantage points. This makes the performance much less static and provides the performer with the agency to captivate the audience. The draw backs of this stage design is it limits the potential for additional elements such as lights, projections and props to play a factor in the creation of the desired environment.



fig. 139: Wing stage section.

THRUST STAGE - The Connected Runway Stage

This design is a profile stage that utilizes geometric, interconnected walkways to bridge either side of the stage. As the walkways progress it elevates above the audience, allowing the performer to engage with the audience from the front, from the sides and from above.

Though visually interesting and ambitious, this stage design provides a number of logistical issues with accessibility and safety for both the audience and the performer. Additionally, there will be resulted situations where audience members situated below the connecting walkway are unable to see the performer which may reduce the quality of their concert experience.

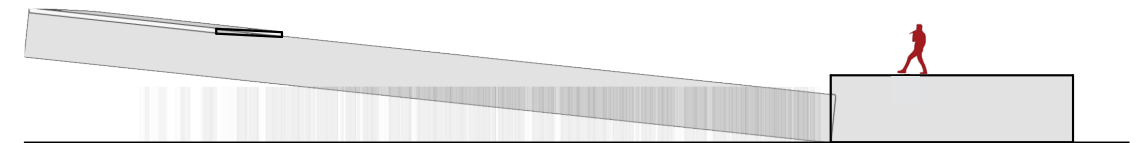


fig. 141: Connected runway stage section.

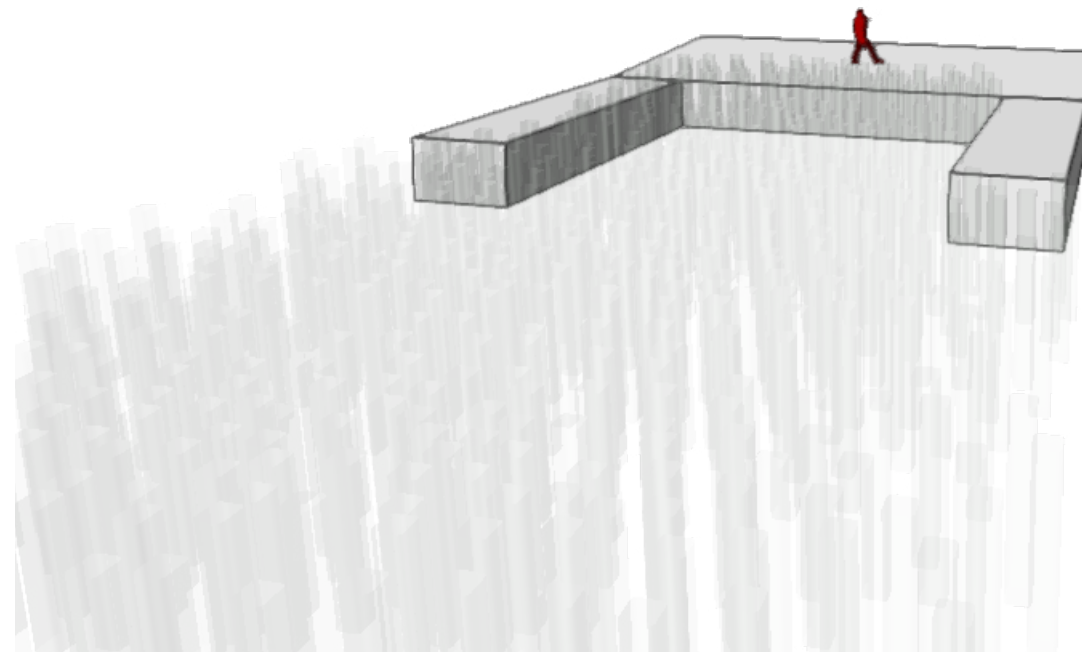


fig. 140: Wing stage.

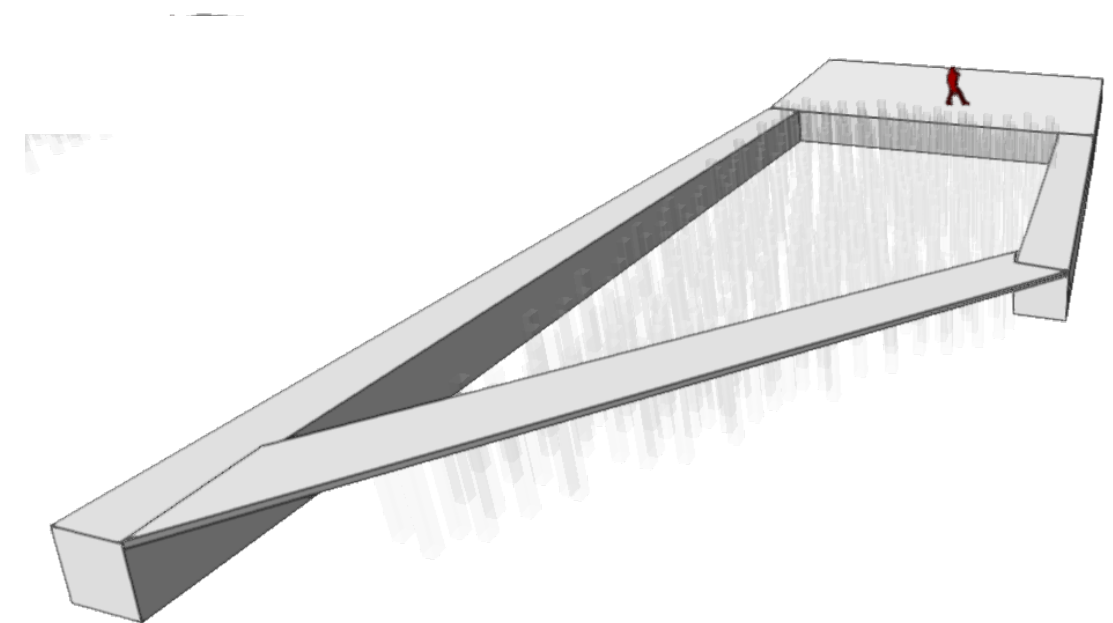


fig. 142: Connected runway stage.

THRUST STAGE - The Circle Runway Stage

This design is a profile stage that consists of a large circle runways that starts from one side of the stage and finish on the other. The audience would be inside this circle so functionally there would need to be an open space so people could come and go.

The circle runway stage creates an in the round experience, that flip the roles of the audience and performer. Rather than the performer be the center of attention, the audience becomes the central subject that the performer is permitted to freely explore from all angles. This role reversal is meant to evoke certain emotions from the audience, for some perhaps discomfort, for others a feeling of importance. Either way, this stage design actively assigns the audience a key role in the performance, rather than the traditional role as spectators. The draw backs of this stage design arise from issues of accessibility and safety.



fig. 143: Circle runway stage section.

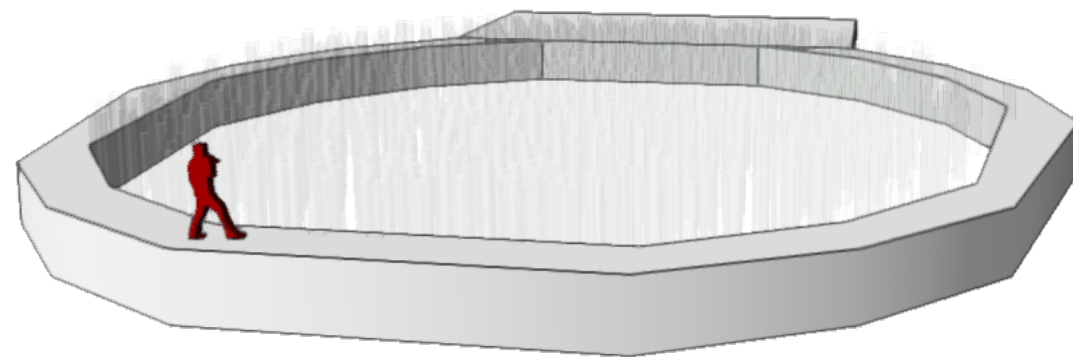


fig. 144: Circle runway stage.

THRUST STAGE - The Tired Cutting Through The Audience Stage

This design is a profile stage with four tiered levels that gradually rise in height. This stage design does not incorporate the archetypal base stage located at the back of the stage assembly as seen in many of the previous iterations, but instead is solely the profile walkways that part the audience into two sections.

This stage provides ample opportunity for the performer for explore the available performance space from various vantage points. Additionally, the large walls located on the sides of each tiered platform provide an opportunity to employ and increased amount of lighting effects and projects to increase the fluidity and dynamics of the stage itself as an object. The main draw backs of this stage design comes from the sheer height of the platforms, that may restrict the sight lines from close audience members on the floor. This stage design is best experienced in larger stadium settings where the majority of the audience is viewing the performance from a higher vantage point.

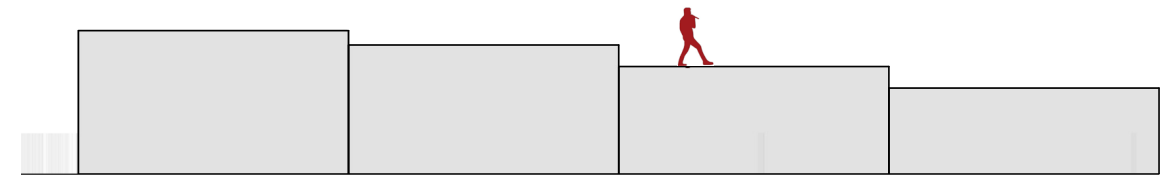


fig. 145: Tiered cutting through audience stage section.

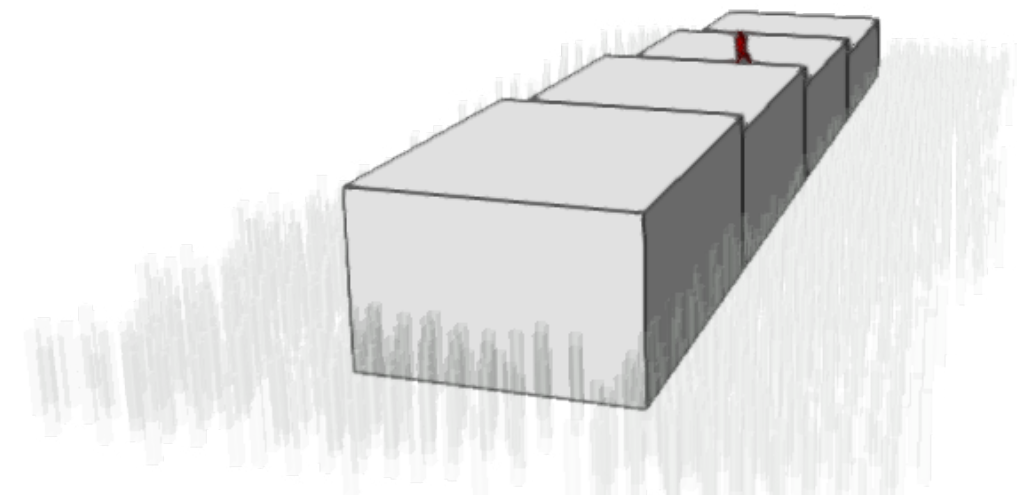


fig. 146: Tiered cutting through audience stage.

THRUST STAGE - The Block Stage

This design is a split up profile stage with separate platforms that are placed throughout the audience. These platforms allow the performer to fully integrate within the audience and adapt a different position for different songs.

This stage design creates an interesting environment for the audience with its multiple platforms that can keep changing everyone's sightlines. The movement between them will take time and require a lot of space on the floor, or for the performer to use a harness and be lifted between them. It also takes away a lot of space where the audience could be, so overall it's not the most practical stage design.

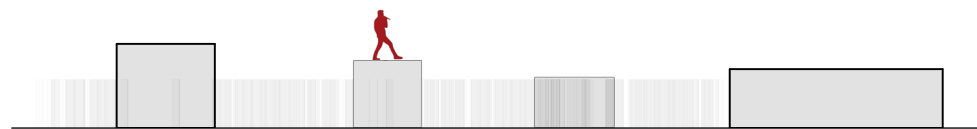


fig. 147: Block Stage section.

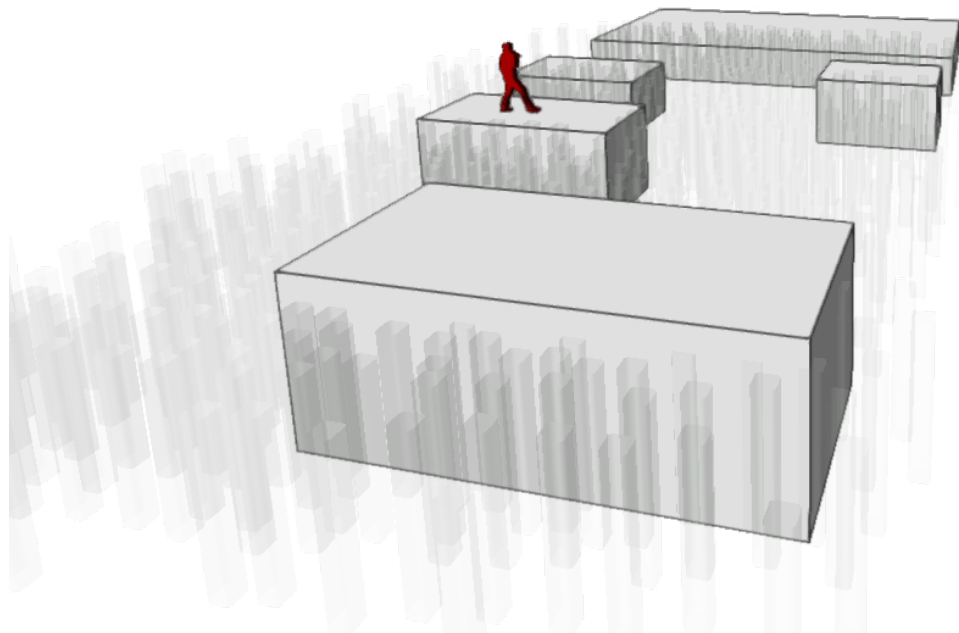


fig. 148: Block Stage.

THRUST STAGE - The Floating Block Stage

This design is similar to The Block Stage but instead of the platforms on the ground they would be hung from above. These hanging platforms would add excitement to a performance and elevate a typical concert.

The audience would be able to take up all the space on the floor, so full capacity would be permitted. The negative to this stage is the movement between the platforms would be tricky. The performer would have to be tied into a harness and lifted to each platform. The raised platform would also make the audience have to look up during the entire show and some sightlines would be obstructed when the audience is right below the platform. This stage would be best viewed from the sides or above, similarly to a sporting event's half time show. This stage also doesn't allow for a lot of flexibility as the movement between platforms would be the hardest part and wouldn't allow for any extra elements.

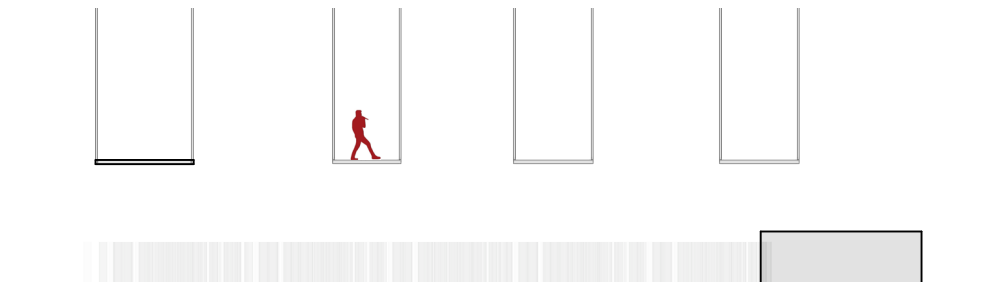


fig. 149: Floating block stage section.

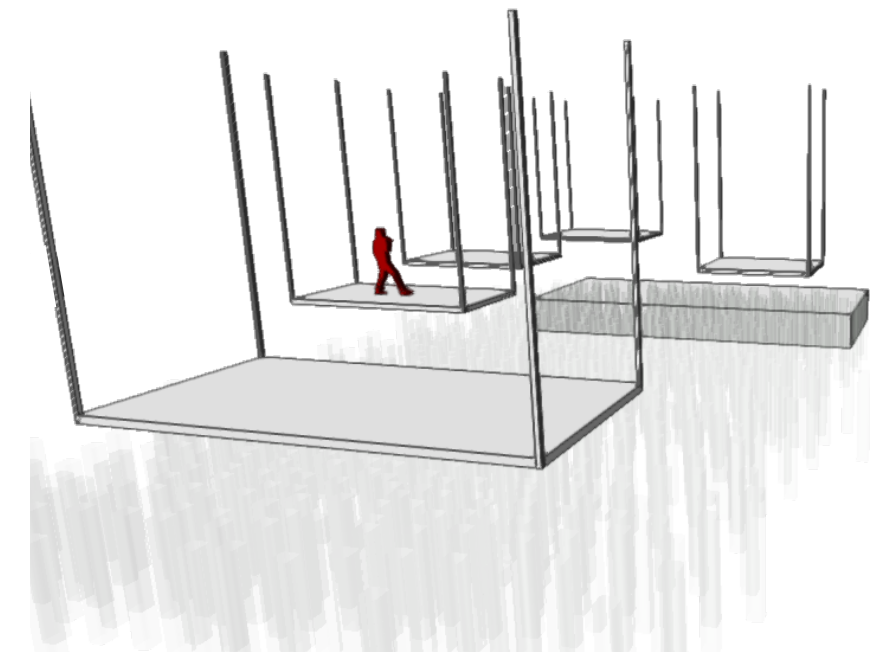


fig. 150: Floating block stage.

THRUST STAGE - The Wall Stage

The design for this stage is a large wall that act as the thrust walkway and incorporates strategically placed holes, thoughtfully integrated into its structure. These holes serve dual purposes, acting as designated platforms for the performer to stand on during the performance, while also offering a unique vantage point for audience members on each side to catch glimpses of one another.

One advantages of this design is the immense potential it holds for utilizing projections and dynamic stage setups. The wall itself can serve as a canvas for captivating visual projections, complementing the performer's artistry and enhancing the overall aesthetic of the performance. The presence of distinct platforms along the wall allows the performer to dynamically move across different stages, providing an ever-changing perspective for the audience and amplifying the sense of immersion and engagement throughout the show. The physical wall, though serving a creative purpose, poses a sightline barrier for the audience members seated on each side. Depending on the height and placement of the wall, some spectators may have their view obstructed, leading to suboptimal viewing experiences for certain portions of the audience.



fig. 151: The Wall stage section.

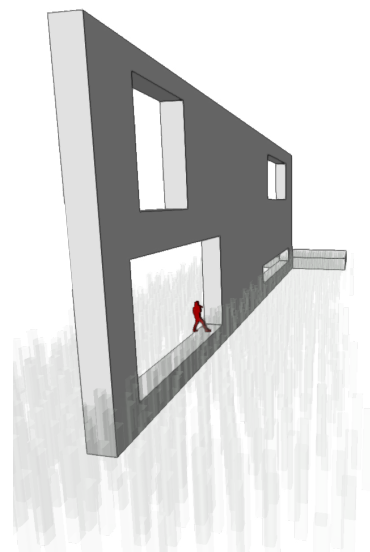


fig. 152: The Wall stage.

THRUST STAGE - The Floating Box Stage

This design is a large hollow box at the front of the audience that has a wall on the bottom and top holding it up. This box serves as a captivating space for the performer to immerse themselves in and creates an intriguing backdrop. It offers a fully immersive environment where the performer can showcase their talent and create dramatic effects for the audience.

This design raises concerns regarding sight-lines and the performer's connection with the audience. Individuals situated on the sides or above the box may experience obstructed views, compromising their ability to fully appreciate the performance. The enclosed nature of the box may create a disconnect between the performer and the audience. It restricts direct interaction and engagement, which are vital components of live performances.

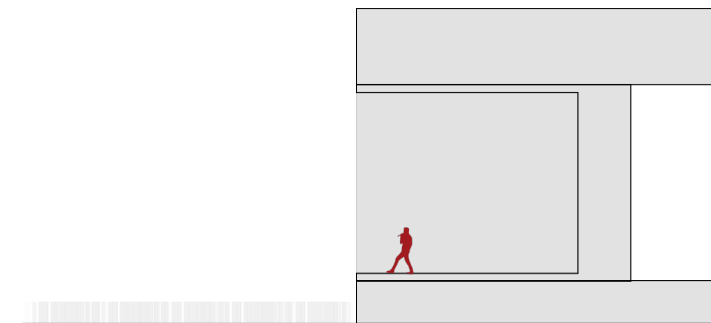


fig. 153: The floating box stage section.

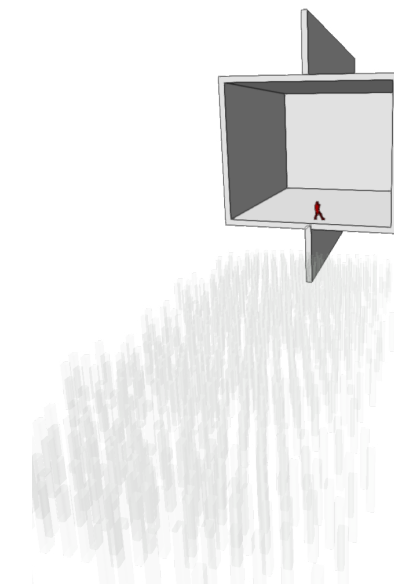


fig. 154: The floating box stage.

THRUST STAGE - The Three Covered Walkways Stage

This design has three profile stages that all connect at a front stage. These walkways each have their own ceilings that allow for lights and objects to be hung on the walkways. This stage design is dynamic in appearance and would create an awe factor for the audience.

The positives for this stage is its ample ability for adaptation throughout the concert. These walkways can have added hanging elements as well as different light effects that can highlight different areas. The roofs can also be lifted up and tilted during the show, added more flexibility. The negative to this design is the walkways would take away a lot of standing room for the audience on the floor, and would prevent some of the audience on the far side to see the performer when they are on the opposite walkway.

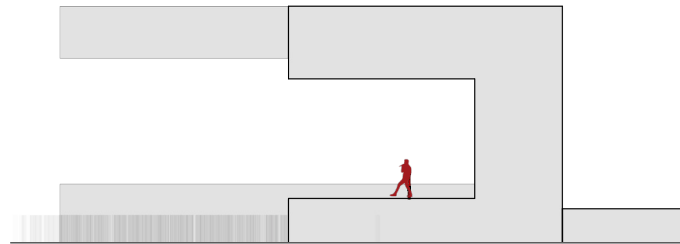


fig. 155 : Three covered walkways stage section.

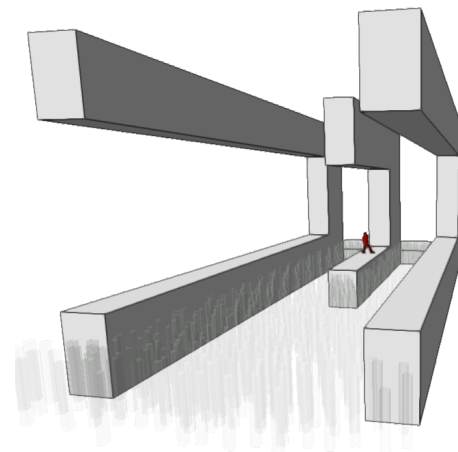


fig. 156: Three covered walkways stage.

THRUST STAGE - The Frame Stage

This design is a large profile stage that has a full frame around the walkway. This frame can be turned into a screen for projections as well as an area where objects can be hung.

The walkway offers ample room for the performer to move around and utilize the stage effectively. This allows for dynamic performances with larger movements and choreography. The additional space also opens up opportunities for creative staging, giving performers more flexibility in their routines. The frame surrounding the walkway serves multiple purposes. It can be used to hang objects, such as props or set pieces, adding depth and dimension to the performance. The frame can be easily transformed into a screen for projections. By using a hanging material that fills the void within the frame, you can project visuals onto it, creating a dynamic backdrop that complements the performance. This versatility adds another layer of visual interest and can be used to convey various themes, moods, or messages throughout the show.



fig. 157: The frame stage section.

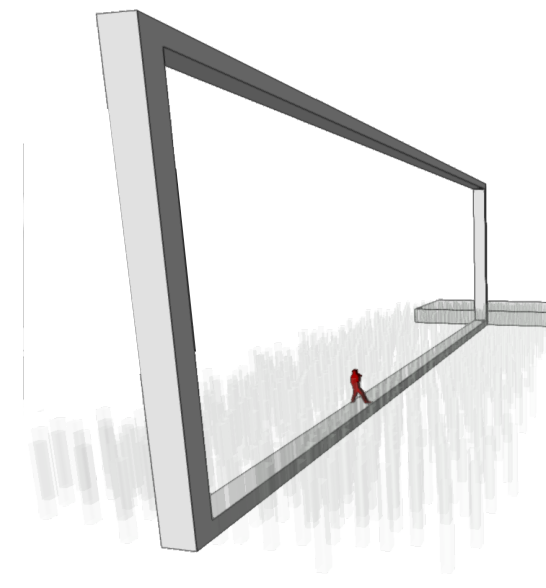


fig. 158: The frame stage.

CENTER STAGE - The Center Stage with Varied Height Walls

This design is a centrally positioned stage, serving as the focal point for performances. Surrounding the stage are walls of varying heights, each crafted from different materials, including transparent panels, mirrors, wood, metal, or even LED screens.

The dynamic interplay between the performer and the audience is a key highlight of this stage design. The multi-level walls provide an opportunity for performers to interact with the crowd from various angles, allowing for more intimate and immersive experiences.

One significant drawback is the potential for difficult sightlines for the audience. As the walls vary in height and material, certain sections of the audience may have obstructed views, limiting their ability to fully experience the performance. Additionally, the performer may face challenges in maintaining visibility, as they may not always be within sight of all spectators. This may require careful choreography and staging to ensure that the artist remains visible and engaged throughout the performance.

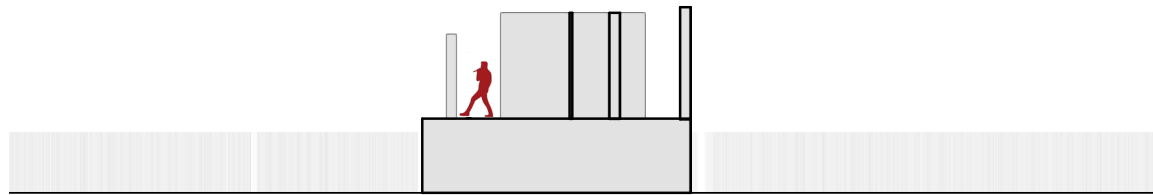


fig. 159: The center stage with varied height walls section.

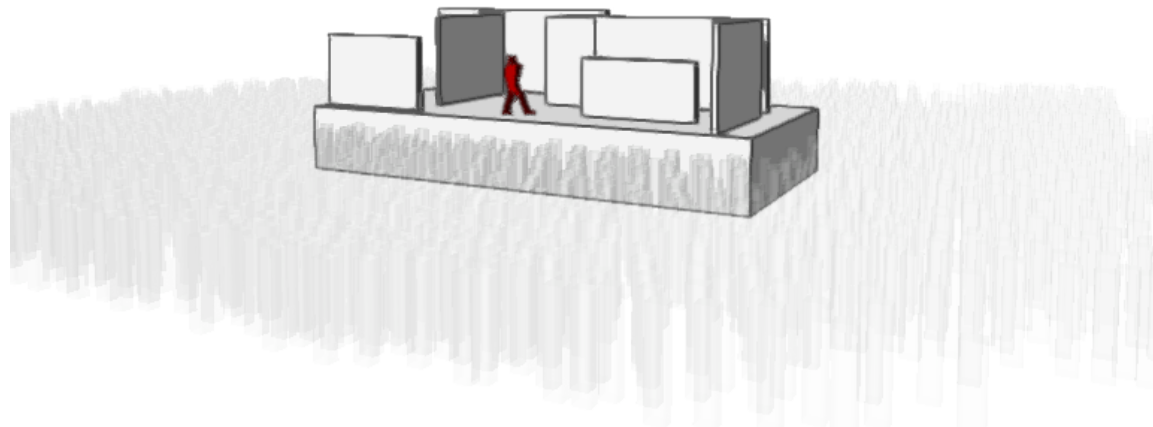


fig. 160: The center stage with varied height walls.

CENTER STAGE - The Center Hovered Stage

The center stage serves as the focal point, drawing attention and the audience's gaze. Suspended above the stage is a floating circle roof, adding a touch of elegance and creating a backdrop for the performer.

One of the primary positives of this design is the creation of unique and exciting interactions between the performer and the audience. The roof encompasses the performer and changes the overall scale of the venue into a more intimate one.

However, this design also presents challenges in terms of sightlines for the audience. The floating circle roof may obstruct the view for some spectators, especially those seated farther back or at certain angles.

The adaptability of this stage design is a key feature that sets it apart. The floating circle roof can be customized to suit different performances and genres. It can be enhanced with lighting effects, projection mapping, or LED screens, creating a visually captivating backdrop that complements the artist's vision.

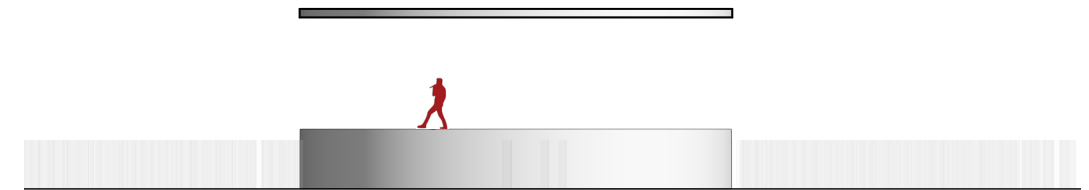


fig. 161: The center hovered stage section.

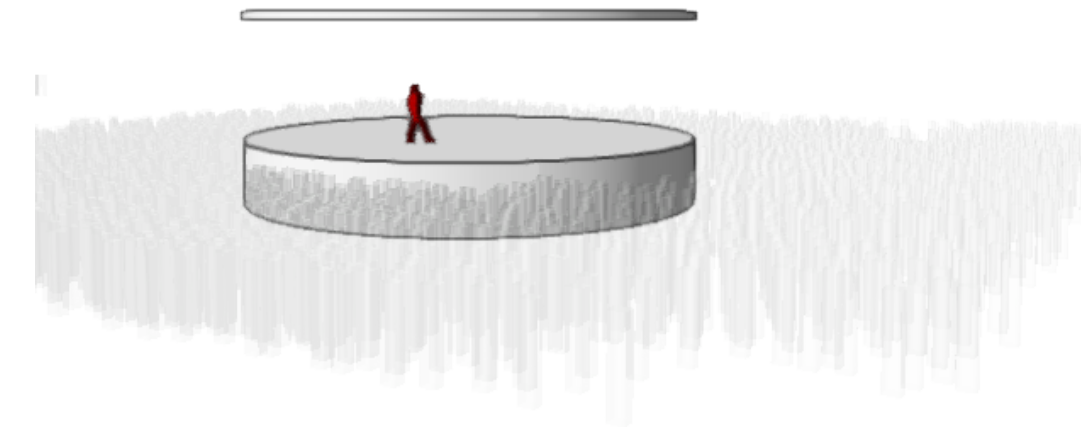


fig. 162: The center hovered stage.

CENTER STAGE - The Middle Surrounding Wall Stage

This stage is a typical middle stage design with added walls surrounding the stage. These walls can have different levels of transparency and be made from various materials.

The positives of this middle stage design with added walls surrounding the stage include its ability to vary the transparency and materials of the surrounding walls offers versatility in creating different atmospheres and visual effects during the show. This can enhance the overall experience for the audience and complement the performance. The changing sightlines created by the transparent walls can add visual interest and intrigue for the audience, making the stage dynamic and engaging. Depending on the level of transparency and materials used, the walls can create a sense of intimacy between the performers and the audience, making the audience feel more connected to the show. Depending on the materials used for the walls, they can help improve acoustic properties by reflecting or absorbing sound, contributing to better audio quality for the performance.

Moving performers on and off the stage without being seen by the audience can be challenging, especially with the added walls. This may require careful coordination and planning to maintain the flow of the performance without disrupting the audience's immersion.

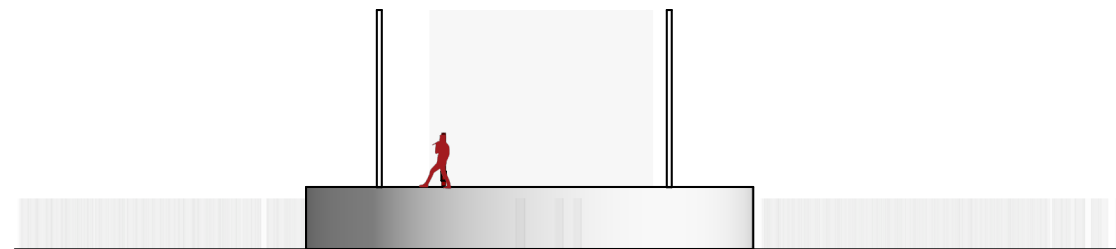


fig. 163: The middle surrounding wall section.



fig. 164: The middle surrounding wall stage.

CENTER STAGE - The Floating Wall Stage

The design for this stage is a circle center stage with floating walls above it.

The circular layout ensures that every seat in the audience has an excellent view of the performance. This 360-degree visibility allows the audience to feel more engaged with the action and performers, enhancing their overall experience. The floating walls above the stage add a dynamic element to the design. They can be easily raised, lowered, or repositioned during the performance, enabling seamless scene changes and creative staging options. This flexibility allows for a variety of productions, from intimate dramas to elaborate musicals.

The circular design may result in limited backstage area, making it challenging for actors and crew members to move and store props, costumes, and set pieces. This limitation could restrict the scale and complexity of some productions. While the 360-degree visibility is generally a positive aspect, some angles might have partial obstructions caused by props, set pieces, or other performers. Careful blocking and choreography are necessary to minimize these potential sightline issues.

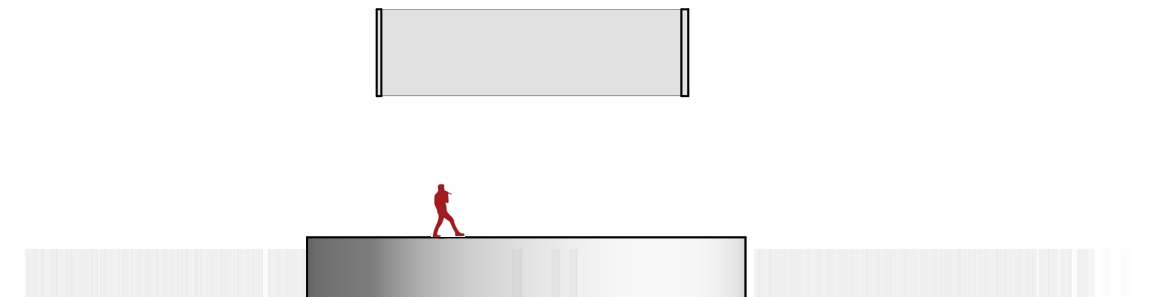


fig. 165: The floating wall section.

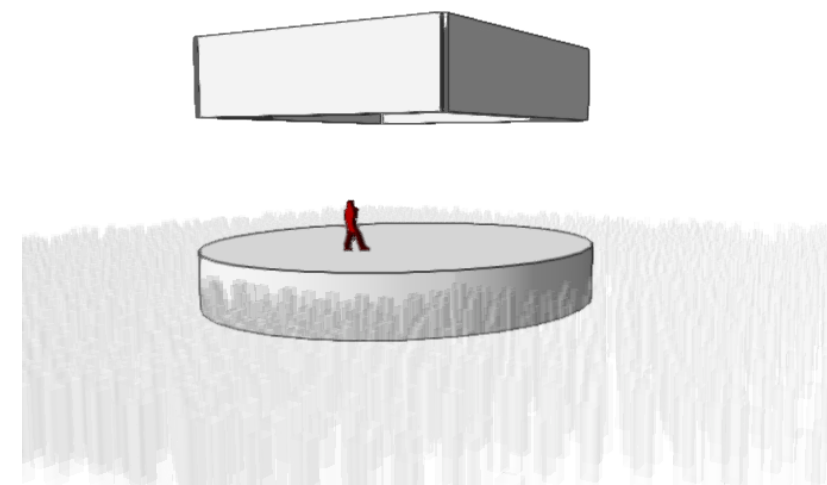


fig. 166: The floating wall stage.

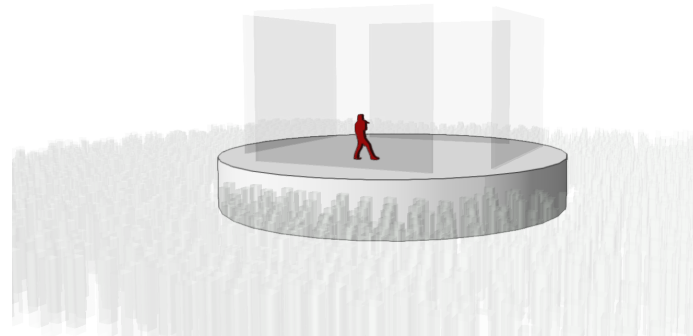


fig. 167: The Center Wall stage was chosen as the center stage for its interesting use of materials and overall flexibility.

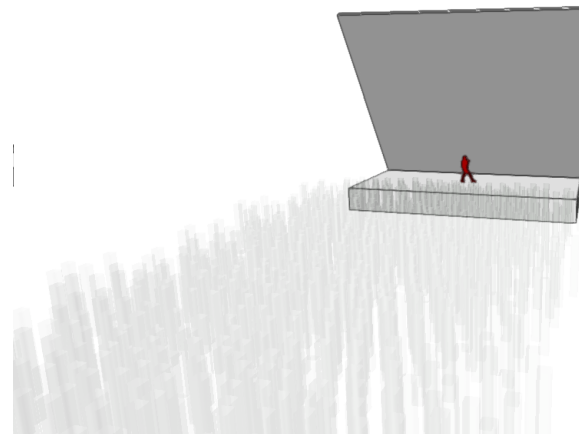


fig. 168: Tilted Roof Stage was chosen as the front stage because of its one big idea that is able to be manipulated into different forms.

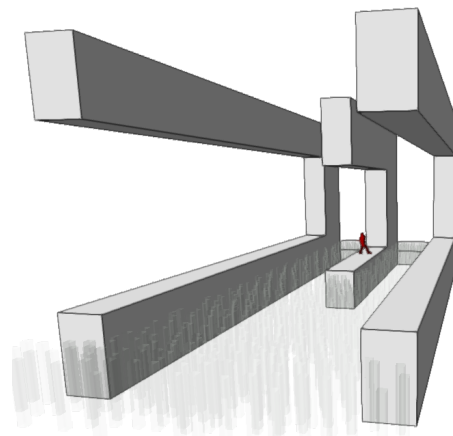


fig. 169: Three covered walkways stage was chosen as the thrust stage because of its immense presence and interaction it can have with the audience.

STAGE SHAPE VIGNETTES CONCLUSION

The three stages that were chosen to be developed further are “The Center Wall Stage”, “The Tilted Roof Stage” and “The Three Covered Walkways Stage”, because of the flexibility each have while also being different stage shapes.

The involvement of architects in the conversation of stage design is crucial for pushing the boundaries and exploring new possibilities in terms of stage shapes, spatial arrangements, and overall aesthetics. Architects bring their expertise in understanding space, form, and structural considerations, which can greatly contribute to the realization of innovative stage designs.

In the case of “The Center Wall Stage,” the design will incorporate more transparent walls. This modification will not only enhance the visual connection between the performers and the audience but also create an immersive experience that aligns with Labrinth’s music and lyrics. The transparency of the walls can be adjusted based on the desired level of interaction and engagement with the audience.

For “The Tilted Roof Stage,” the design will be reconfigured to make it circular and extend it over the crowd. This modification will create a more dynamic and encompassing atmosphere, allowing the audience to feel enveloped within the performance.

Regarding “The Three Covered Walkways Stage,” the design will be refined by using only one walkway to improve sight-lines for the audience. By strategically positioning the walkway, it can optimize the visibility of the performers from various angles, ensuring that the audience can fully engage with the performance. Additionally, the design can explore creative ways to incorporate lighting, sound, and visual effects into the walkway design, further enhancing the immersive experience.

These stage designs can be transformed from concepts to tangible and captivating realities through the knowledge and expertise an architect brings. This will help ensure that the stages are not only aesthetically appealing but also functional, safe, and capable of creating the desired emotional and immersive environments for Labrinth’s music.

CHAPTER FIVE: DESIGN WORK

STAGE DESIGN ONE: 'JEALOUS' BY LABRINTH

The first stage design is for Labrinth's song "Jealous" which is being addressed to one of his parents, who left when he was four. "A lot of people have been through that experience - It's kind of written from the perspective of how my family felt at the time, but I wanted to write it so anyone could dig into the song and relate to it to their own situation."¹

The design for this stage started with an analysis of various sources, including the song's music video, interviews, song lyrics, and imagery. Inspired by Labrinth's artistic vision and the desire to create a boundary between him and the audience, the design incorporates fabric and a center stage as a prominent elements. The hanging fabric would initially obscure Labrinth, casting him as a shadow to the audience as the song begins. As the performance progresses, the fabric pieces would gracefully fall, unveiling Labrinth and establishing a powerful connection with the audience. The architecture element of fabric "walls" provoke an ethereal and dreamy environment for the audience. Furthermore, the fabric's versatility allows for the integration of projections, adding another layer of visual depth and enhancing the immersive experience for both Labrinth and the audience.

A center stage is used for this design because it reflect the slow and intricate lyrical music that is best utilized with a intimate stage that has the audience on all sides.

Some keys words the song's lyrics create include; shadow, discount, separation, fallen, wall, weather, day vs night.



fig. 170-172: Images from Labrinth's "Jealous" music video.

¹ "Jealous" Song Facts, Accessed June. 20, 2023. <https://www.songfacts.com/facts/labrinth/jealous>

LYRICS TO LABRINTH'S SONG "JEALOUS"

[Verse 1]

I'm jealous of the rain
That falls upon your skin
It's closer than my hands have been
I'm jealous of the rain
I'm jealous of the wind
That ripples through your clothes
It's closer than your shadow
Oh, I'm jealous of the wind

[Chorus]

'Cause I wished you the best of
All this world could give
And I told you when you left me
There's nothing to forgive
But I always thought you'd come back, tell me all you found was
Heartbreak and misery
It's hard for me to say, I'm jealous of the way
You're happy without me

[Verse 2]

I'm jealous of the nights
That I don't spend with you
I'm wondering who you lay next to
Oh, I'm jealous of the nights
I'm jealous of the love
Love that was in here
Gone for someone else to share
Oh, I'm jealous of the love

[Chorus]

'Cause I wished you the best of
All this world could give
And I told you when you left me
There's nothing to forgive
But I always thought you'd come back, tell me all you found was
Heartbreak and misery
It's hard for me to say, I'm jealous of the way
You're happy without me

[Bridge]

As I sink in the sand
Watch you slip through my hands
Oh, as I die here another day
'Cause all I do is cry behind this smile

[Chorus]

I wished you the best of
All this world could give
And I told you when you left me
There's nothing to forgive
But I always thought you'd come back, tell me all you found was
Heartbreak and misery
It's hard for me to say, I'm jealous of the way
You're happy without me-e-e-eee

[Outro]

It's hard for me to say, I'm jealous of the way
You're happy without me¹

Link to the song: <https://www.youtube.com/watch?v=50VWOBi0VFs>

¹ "Jealous". Genius. Accessed June 20, 2023. <https://genius.com/Labrinth-jealous-lyrics>.

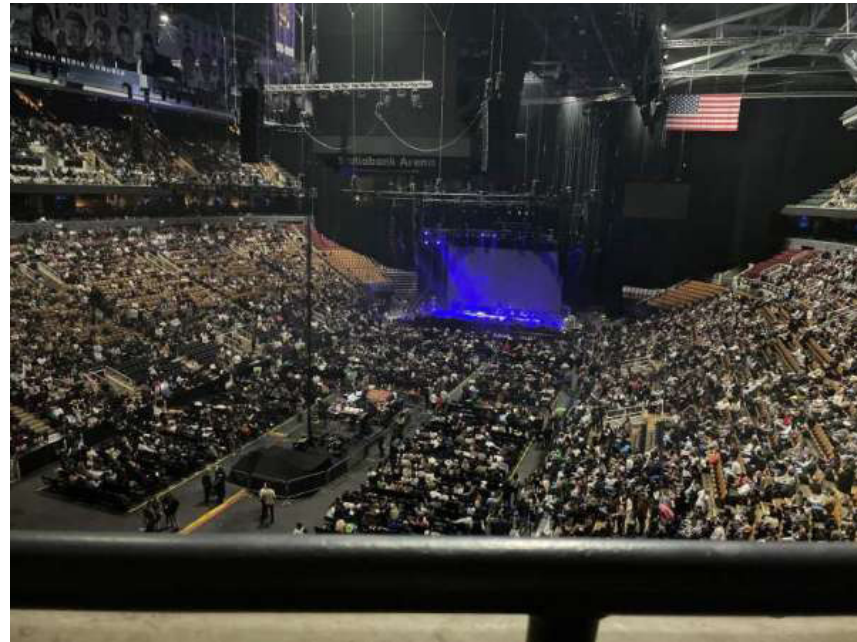


fig. 173: Inside view of Scotia Bank Arena during a concert.

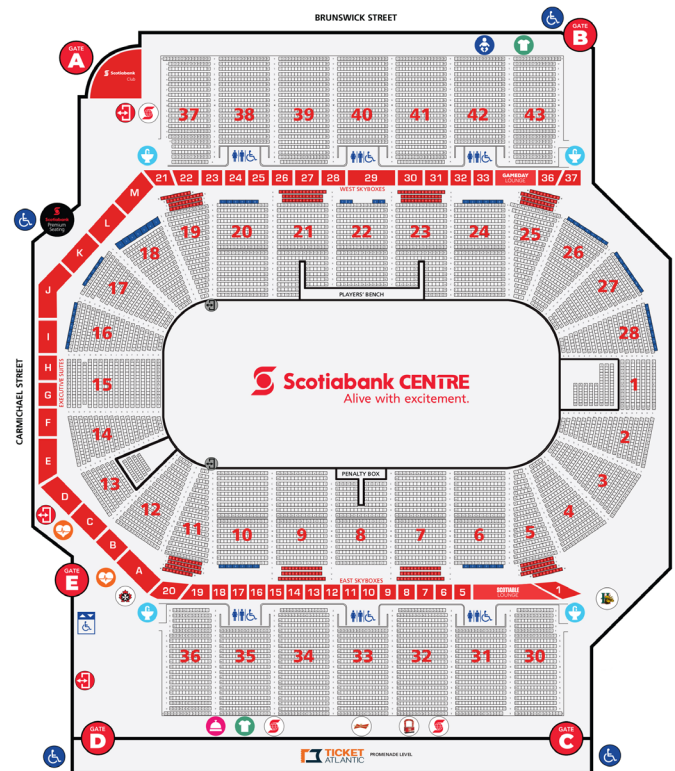


fig. 174: Floor plan of Scotia Bank Arena.

VENUE SELECTION

Scotiabank Arena
 Toronto, Ontario
 665,000 square foot¹
 19,800 seats for a full house concert²

Scotiabank Arena was selected as the venue for the concert for several reasons, with its ability to accommodate various stage sizes, shapes, and seating capacities being a significant factor.³ The versatility of the arena made it an ideal choice for hosting Labrinth's center stage design.

One of the primary considerations in choosing a venue for a concert is the stage design and configuration. Different artists may have unique preferences for stage sizes and shapes that align with their artistic vision and performance requirements. Scotiabank Arena's flexible infrastructure allows for customization, providing options for both large-scale productions and more intimate performances. This flexibility allows for the center stage design to be accommodated and create enough space around the stage to have a large crowd area.

In addition to stage flexibility, Scotiabank Arena's seating capacities further enhance its appeal as a concert venue. The arena can adjust its seating arrangements to cater to different audience sizes, so for Labrinth who may not need the whole arena, some seating sections can be blocked off. This adaptability ensures that concert organizers can maximize ticket sales while maintaining a comfortable and engaging atmosphere for attendees.

The arena's wide range of seating capacities allows for various ticketing options, accommodating both large-scale productions with tens of thousands of attendees and more intimate performances with smaller audiences. This flexibility would enable Labrinth to tailor his concert to specific market demands and reach a wider fan base, creating a more inclusive and accessible concert experience.

Furthermore, Scotiabank Arena's reputation as a premier concert venue adds to its appeal. Its state-of-the-art facilities, exceptional sound systems, and professional staff contribute to the overall concert experience, ensuring a high-quality production from start to finish. The arena's commitment to providing a top-tier experience aligns with the artists' goals of delivering memorable performances and satisfying their fans.

¹ Scotiabank Arena. Accessed July. 15 2023. <https://www.scotiabankarena.com>.

² Scotiabank Arena.

³ Scotiabank Arena.

ETHEREAL & DREAMY - CENTER STAGE

Ethereal and dreamy adjectives were chosen based on the tempo and lyrics to the song "Jealous". The song unfolds with gentle and measured rhythm, having each musical element from the instrumentals to the vocal delivery carefully crafted to complement the emotive nature of the song. The beats are stretched out, and the tempo is slowed allowing for the lyrics to resonate and sink in, line by line. This progression is similar to the human scale fabric walls that fall and transition throughout the performance.

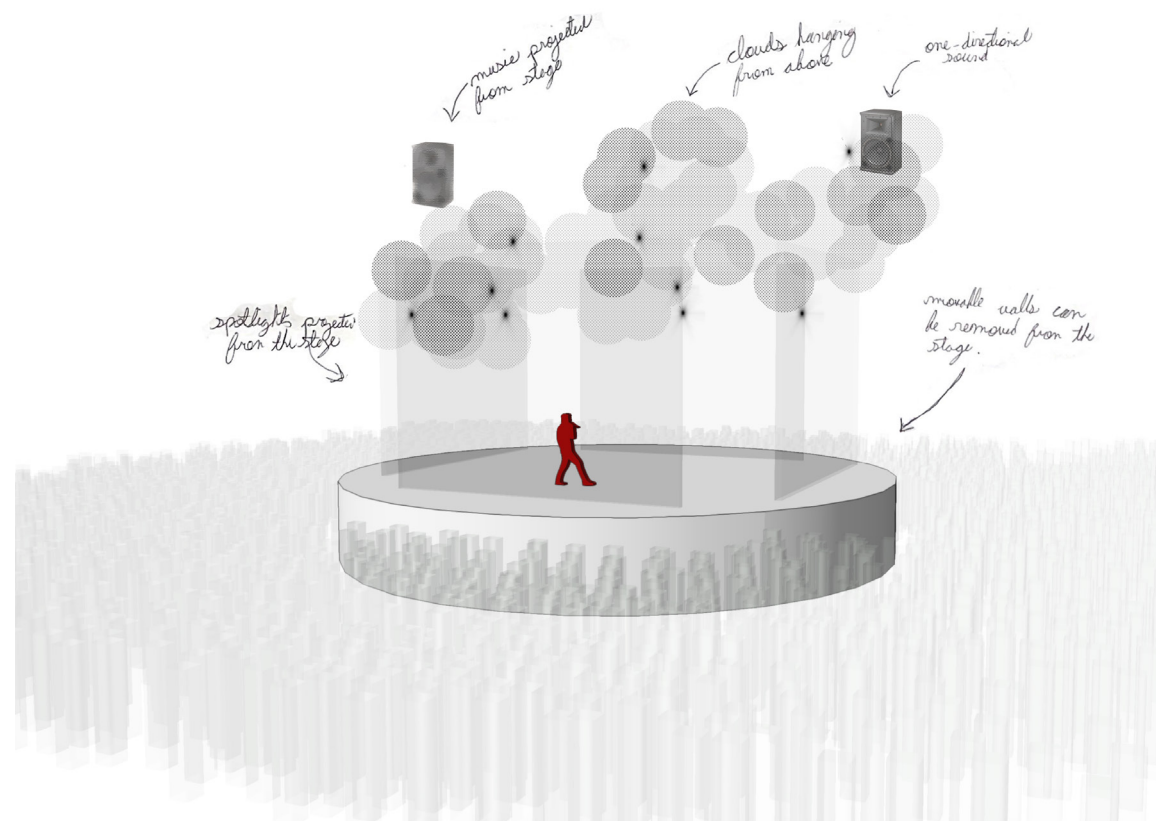
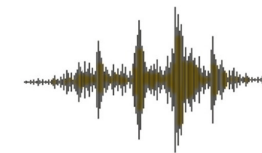


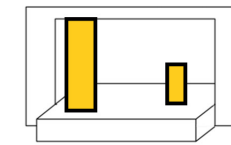
fig. 175: Diagram showing placement of stage elements, speakers, and lights for Labrinth's song "Jealous".



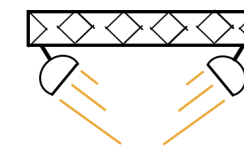
TIME



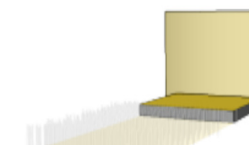
SOUND



SCALE



LIGHT & DARKNESS



SPACE



AUDIENCE

The falling fabric "walls" show the element of time. As the song progresses, the fabric walls begins to descend, revealing the stage and Labrinth gradually. This gradual reveal adds suspense and builds anticipation for the audience.

Labrinth's song is a soft and deep listening experience. The design incorporates one-directional sound, meaning the audio is projected solely from the stage towards the audience using PA system, monitor systems, and subwoofers speakers. This direction sound creates a focuses and ordered listening experience, enhancing the audience's connection to Labrinth and the music. The music becomes the central focus and encourages the audience to engage fully with Labrinth.

The concert stage design utilizes scale to create a sense of human connection, by having the hanging fabric proportionally sized to Labrinth himself. The audience can relate and understand the scale of the fabric because it is similar to them, this helps make the connection between Labrinth finding his way through the fabric and the audience going on this journey with him. Also, by using large fabric walls that fall from a significant height, the design will evoke a visually striking and impactful experience. The contrast between the towering walls and the revealed stage will amplify the emotional impact of the performance, while the soft lines will advance an overall calm and comfortable feeling.

Directed spotlights are the primary lighting source with this design. By illuminating only the stage with spotlights, the design create a stark contrast between the performer and the surrounding darkness. This will also direct the audience's attention to specific areas of the stage, highlighting Labrinth and his movement through the stage.

The fabric walls act as the primary architectural element, defining and enclosing the performance space. The space on the stage will begin by being cluttered and chaotic for the audience who are trying to find Labrinth through these "walls". As the song progresses the space will become more ordered. As they gradually fall, they transform the perception of the space and create a sense of openness and expansion. Similarly to how the song begins as a message of disconnect Labrinth has to his dad, but ends with the understanding of absence and acceptance, visually shown through his ability to bring down the walls. This transformation can generate a visually immersive experience, allowing the audience to feel more connected to the performers and the music.

The falling fabric walls and the gradual reveal of the stage keep the audience visually engaged throughout the performance. The one-directional sound ensures that the music and Labrinth are the central focus.

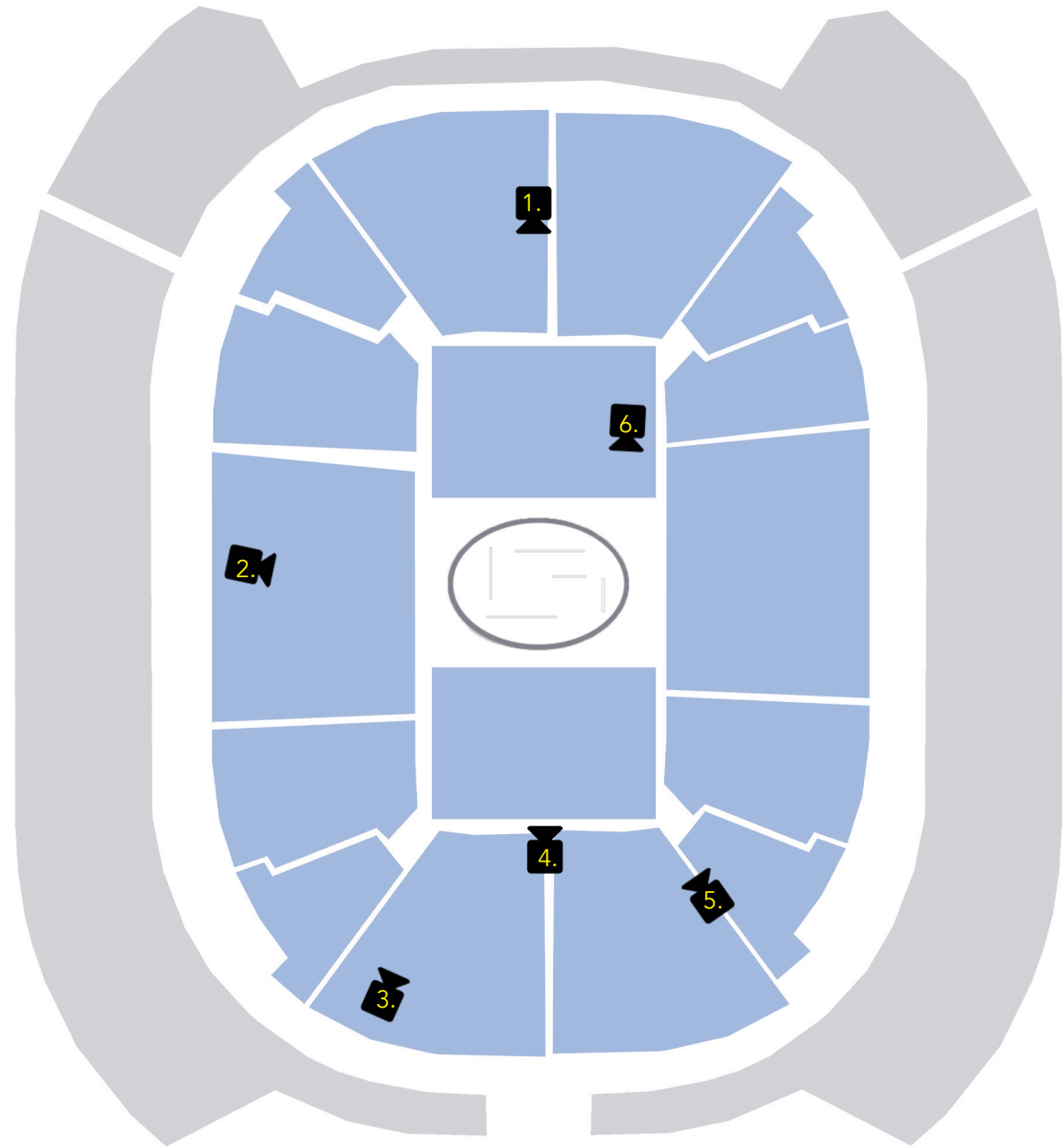


fig. 176: Simplistic floor plan of Scotia Bank Arena for Labrinth's song "Jealous". The blue is available seating, and the gray is be blocked off seating. Each camera corresponds to the images in fig. 177, showing the sightlines of different seats.

SIGHTLINES FOR THE SONG "JEALOUS"

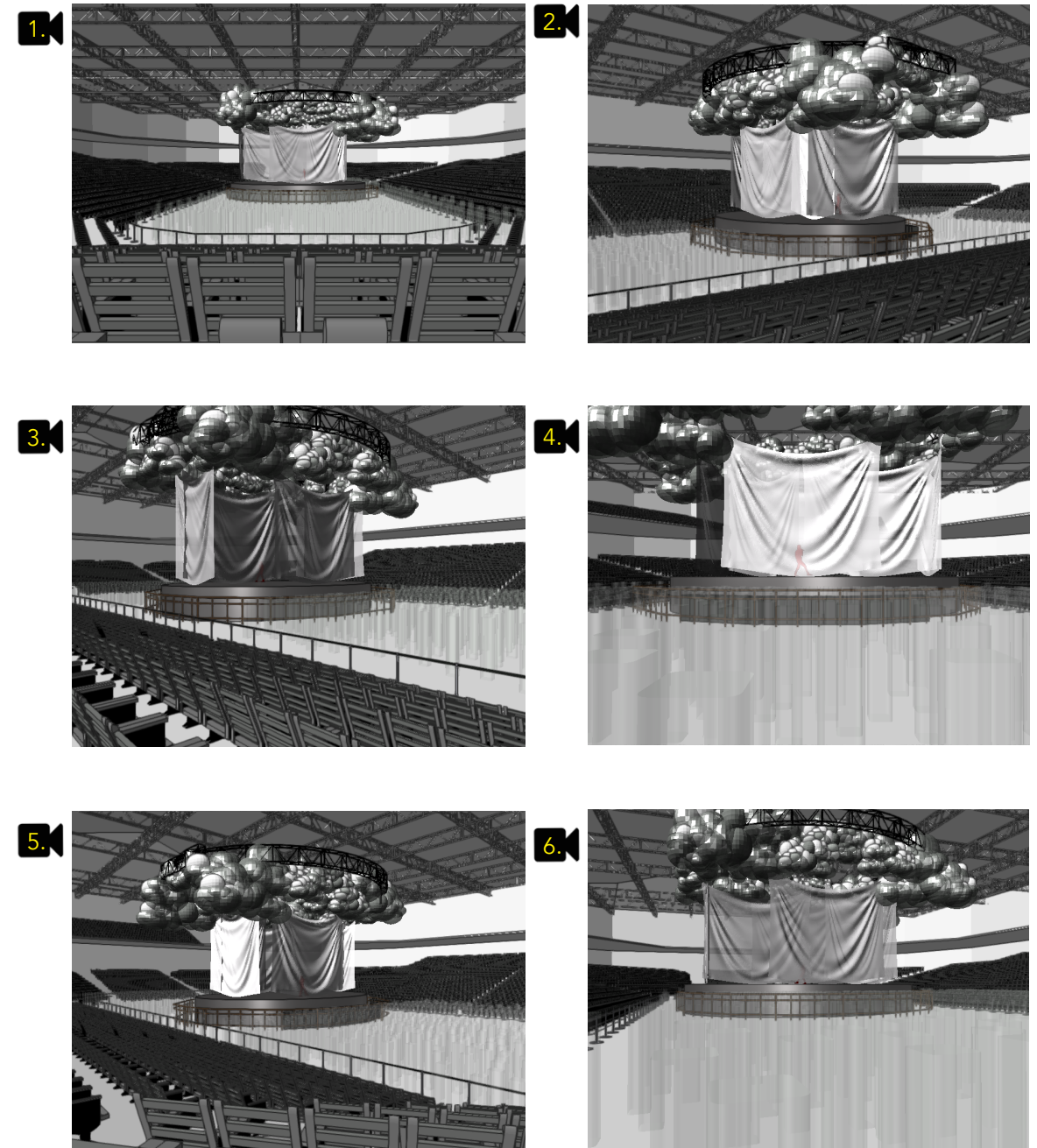
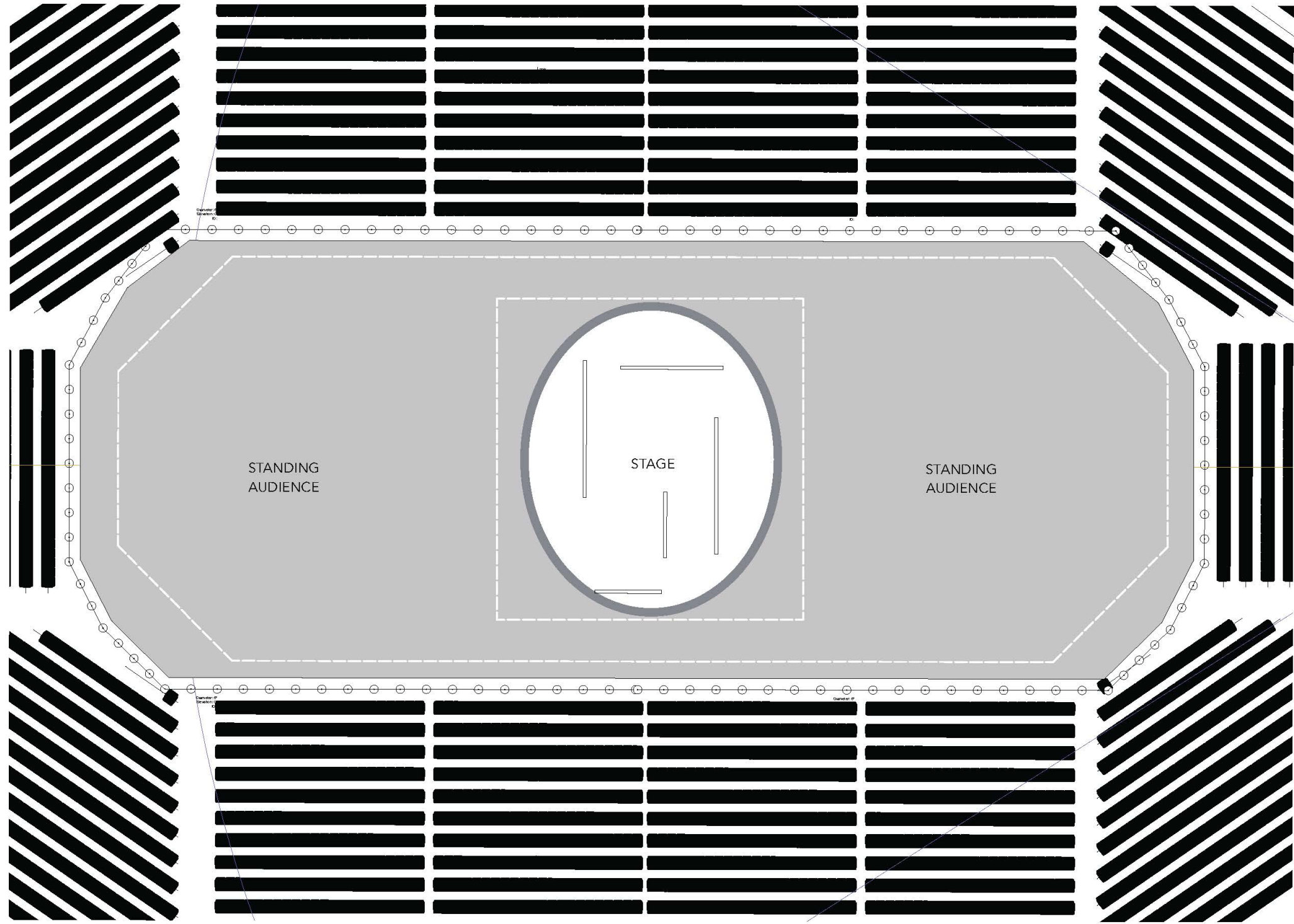
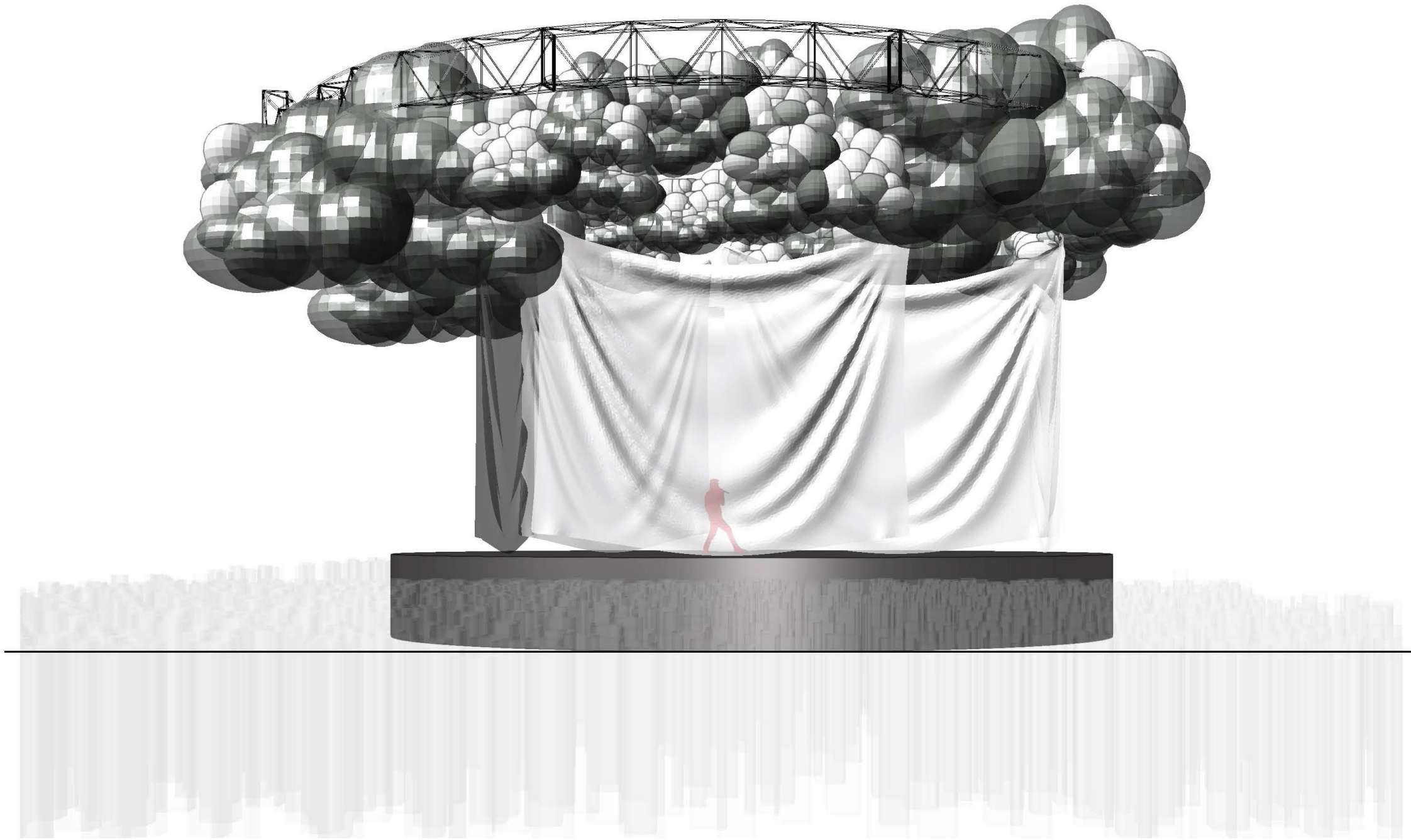


fig. 177: These images correspond to the diagram fig. 176, showing different sightlines depending on seat location. Because of the center stage design the sightlines stay consistent throughout the arena, allowing everyone the same similar concert experience.



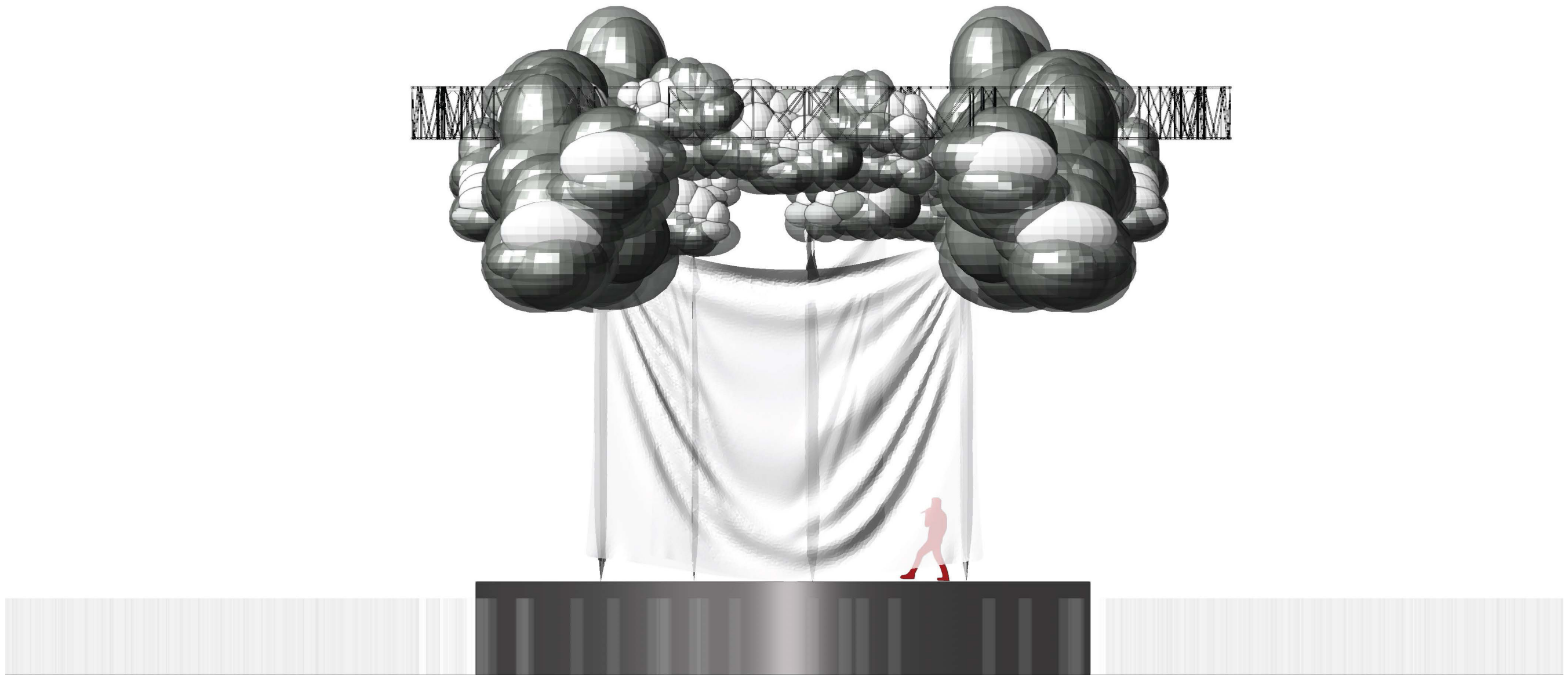
Scale: 1:200

fig. 178: Plan of stage for Labrinth's song "Jealous".



Scale: 1:200

fig. 179: Front Elevation of stage for Labrinth's song "Jealous".



cale: 1:200
fig. 180: Side Elevation of stage for Labrinth's song "Jealous".



fig. 181: Render showing how the song "Jealous" will open. The center stage consists of floating clouds above that stage and hanging linen fabric. The lighting colour opens with deep purple to facilitate a night environment that is portray within the songs lyrics.

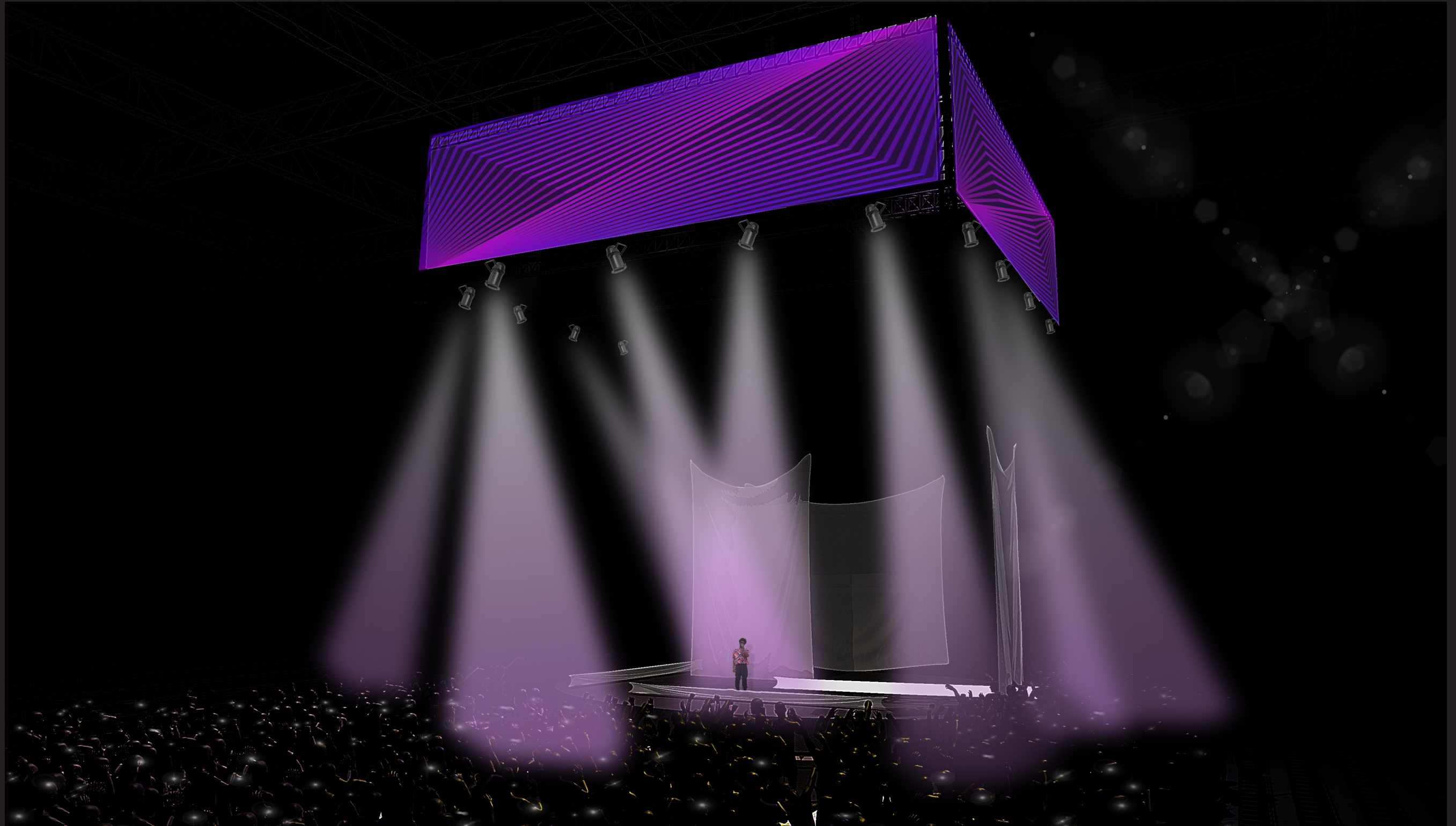


fig. 182: Render showing how the song "Jealous" will look as the song progresses. The linen fabric will start to gradually fall as Labrinth is revealed to the audience. The colours are still deep purples with hints of orange and yellow as it turns from night to sunrise.



fig. 183: Render showing how the song "Jealous" will look as the song progresses. The linen fabric has all fallen and the colours have started to brighten with orange.



fig. 184: Render showing Labrinth's view from on stage during the song 'Jealous'.



fig. 185: Fabric Tests.

NYLON

PLUSH

VELVET

LINEN

SILK

LOOSE COTTON

POLYESTER

TIGHT COTTON

FABRIC TESTS

In order to create the most successful concert stage design, fabric testing was conducted to identify the most suitable fabric for hanging. This testing involved testing a range of fabrics, including nylon, plush, velvet, linen, silk, loose cotton, polyester, and tight cotton. Each fabric was put through the fabric's response to lighting from behind, lighting from the front, and the drape and fall of the fabric and each were photographed.

Nylon, known for its durability and lightweight nature, was examined for its ability to withstand tension and maintain its structural integrity when hung. Additionally, its response to different lighting angles was analyzed, assessing its ability to create visually dynamic effects on stage.

Plush fabric, with its soft and plush texture, was evaluated for its potential to enhance the sensory experience and provide a luxurious visual appeal. The photography tests sought to capture how the fabric interacted with lighting, emphasizing its ability to reflect and diffuse light sources, creating a unique ambiance on stage.

Velvet, renowned for its rich texture and deep colors, was examined for its ability to absorb and reflect light, providing contrasting visual effects. The photography tests aimed to capture the interplay between light and shadow, highlighting the fabric's ability to create dramatic and textured surfaces.

Linen, known for its natural and breathable qualities, was assessed for its suitability in creating a more organic and rustic aesthetic. The fabric's response to lighting from various angles was examined to determine its ability to create subtle and diffused lighting effects.

Silk, celebrated for its lustrous and smooth texture, was evaluated for its potential to create an elegant and visually captivating stage presence. The photography tests focused on capturing the fabric's inherent sheen and its ability to reflect light, adding a touch of sophistication to the stage design.

Loose cotton fabric, with its lightweight and airy properties, was tested for its ability to create fluid and dynamic movements when suspended. The photography tests aimed to capture the fabric's ability to catch and manipulate light, enhancing the overall visual interest and creating an ethereal atmosphere.

Polyester fabric, known for its versatility and durability, was examined for its practicality in a concert setting. Its response to different lighting angles and its ability to maintain its shape and color under various conditions were carefully evaluated.

Tight cotton fabric, characterized by its sturdiness and structure, was tested for its ability to create clean lines and defined shapes when hung. The photography tests aimed to highlight the fabric's crispness and its potential to interact with lighting, contributing to a more polished and refined stage design.

Through these fabric tests **linen** was chosen because of its ability to fall gracefully without becoming wrinkled, and for its conduction of light. Linen created a nice shadow for Labrinth when he would be standing behind it as well as being thick enough for projections to be seen on it.



fig. 186: Photographs of light behind each fabric.



fig. 187: Photographs of light in front of each fabric.

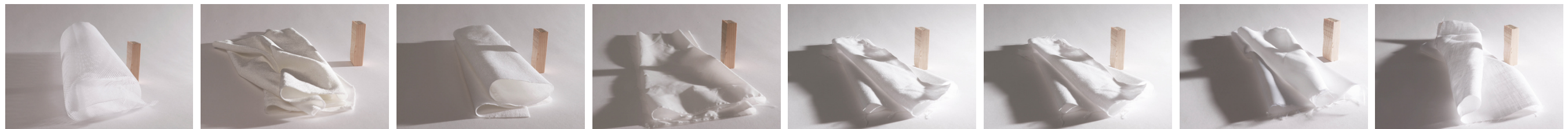


fig. 188: Photographs of each fabric falling.

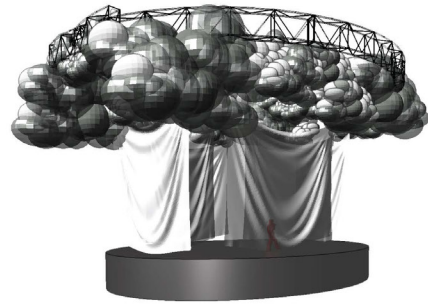


fig. 189: Hanging fabric stage.

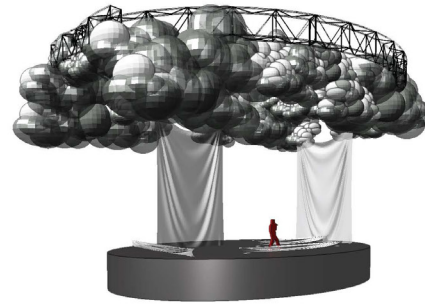


fig. 190: Falling fabric stage.

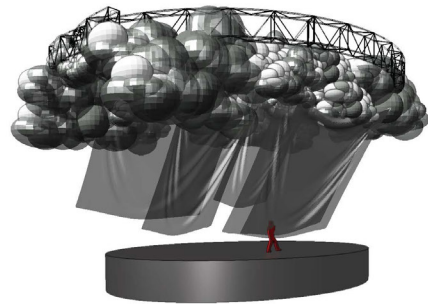


fig. 191: Wind blowing fabric stage.

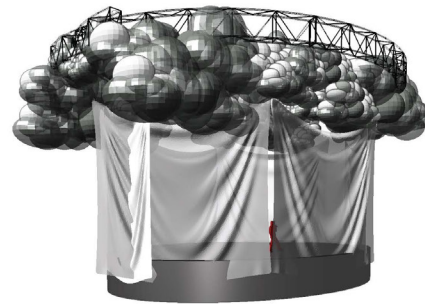


fig. 192: Fabric encompassing the stage.

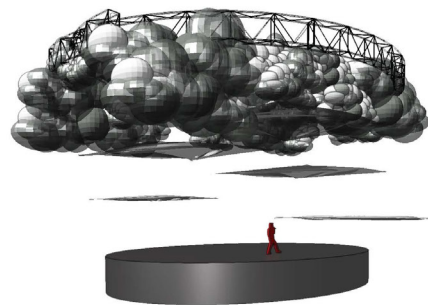


fig. 193: Fabric acting as a roof stage.

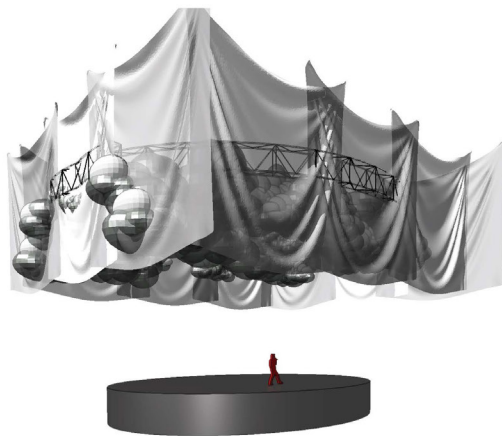


fig. 194: Fabric as a backdrop with projections.

“JEALOUS” STAGE FLEXIBILITY

The stage design for Labrinth’s song ‘Jealous’ offers a remarkable level of flexibility, allowing it to be adapted and utilized for different songs, thus amplifying its versatility and artistic impact. One variation involves the use of all hanging fabric, creating an ethereal and immersive environment. The fabric, delicately suspended above the stage, serves as a visual boundary between Labrinth and the audience. This design choice allows for a transformative effect, as the fabric can be manipulated to reveal Labrinth gradually during the performance, establishing a powerful connection with the audience. Furthermore, the integration of projections onto the fabric adds another layer of visual depth, creating a captivating interplay of light and movement.

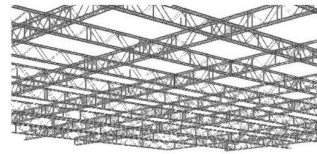
In another variation, specific fabric pieces can be designed to fall at strategic moments throughout the performance. This dynamic element adds a sense of anticipation and surprise, heightening the emotional impact of the songs.

The stage design also offers the possibility of positioning all the fabric on the ground, transforming the stage into a textured landscape. The fabric’s arrangement on the ground can be manipulated to create different patterns, shapes, or pathways, enhancing the visual storytelling and adding another layer of symbolism. The fabric can be arranged to guide Labrinth’s movements or to create dynamic spaces for the dancers, resulting in a performance space that is adaptable to the specific needs of each song.

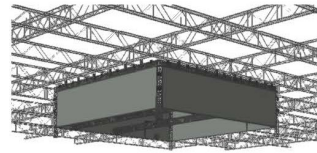
To enhance the overall sensory experience, the addition of wind effects can be incorporated, causing the fabric to gently sway and flow. Through the fabric tests the best type for this effect is linen because of its lightweight and ability to flow nicely without wrinkling. The movement of the fabric in response to the breeze creates a visually captivating and immersive atmosphere. The interplay of wind and fabric evokes a sense of fluidity, grace, and even vulnerability, amplifying the emotional impact of Labrinth’s performance. This atmospheric element further accentuates the adaptability of the stage design, as it can be adjusted to suit the varying dynamics and energy of different songs.

Lastly, different lighting techniques can be employed to create various moods and evoke different emotions in conjunction with the fabric. Warm, soft lighting may be used for intimate and introspective moments, while vibrant and dynamic lighting can energize the performance. The interaction between light and fabric can produce mesmerizing visual effects, transforming the stage into a captivating canvas of colors and shadows. The use of lighting as a complement to the fabric enhances the overall sensory experience, making each performance a multi-dimensional and unforgettable journey for both Labrinth and the audience.

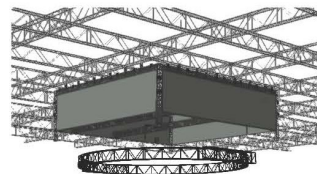
In conclusion, the stage design for Labrinth offers a wide range of possibilities for adaptation and versatility. The variations in fabric placement, movement, shape, lighting, and wind effects provide an expansive canvas for artistic expression and emotional storytelling. The natural ripple of the fabric will feel different than a LED screen so the projections will have a more of life to them than typical concert projections. This flexibility allows the stage design to seamlessly adapt to the diverse repertoire of Labrinth, ensuring that each performance is a captivating and immersive experience that resonates deeply with both the artist and the audience.



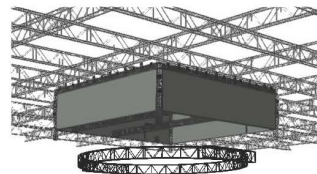
Step One: Rigging



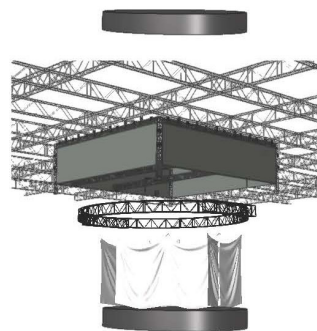
Step Two: Hanging LED Screens



Step Three: Hanging Trusses



Step Four: Build Stage



Step One: Hang Fabric

fig. 195: "Jealous" stage logistics, showing the steps for the set-up process.

"JEALOUS" STAGE LOGISTICS

The set-up process for Labrinth's song "Jealous" at Scotiabank Arena is an intricate and carefully planned operation to ensure a seamless concert experience for the performer and audience.

Arrival of Trucks: Early in the morning of the show day, a convoy of trucks carrying the stage equipment, LED screens, fabrics, lighting fixtures, speakers, and all other necessary elements arrives at Scotiabank Arena. A team of skilled technicians and stagehands are ready to execute the setup.

Laying Out Rigging Points: The first task is to carefully plan and map out the rigging points for each element. Technicians collaborate with the production team to decide on the ideal placement of LED screens, fabrics, lights, and speakers. These rigging points are vital to ensure safety and stability during the performance. Accurate measurements and calculations are made to ensure everything fits perfectly and aligns with the creative vision for the show.

Hanging LED Screens and Surrounding Equipment: With the rigging points laid out, the team begins the process of hanging the LED screens. These massive screens serve as the visual centerpiece of the performance, displaying visuals and captivating imagery that complement Labrinth's emotional performance of "Jealous." Surrounding the LED screens are strategically positioned speakers and lights to deliver crystal-clear sound and breathtaking lighting effects.

Building the Stage: Once the LED screens, speakers, and lights are in place, attention turns to constructing the stage itself. The stage for "Jealous" is a simple oval shape, designed to create a sense of intimacy and connection between the artist and the audience. The stage is constructed using sturdy materials that can withstand the weight of the performers and equipment while providing a smooth surface for Labrinth's performance.

Hanging Fabric from Trusses: The final step involves hanging fabric from trusses positioned above the stage. The fabric is hung using wire attached to the trusses so they can be moved and manipulated throughout the performance.

CHAPTER FIVE: DESIGN WORK

STAGE DESIGN TWO: 'WHEN I R.I.P' BY LABRINTH

The second stage design is for Labrinth's song "When I R.I.P" which is about the struggles with drug addiction within our youth culture. It pulls images of struggling between wanting to let the addiction take over and finding the light on the other side of it.¹

Similarly to the previous stage, the design for Labrinth's performance of "When I R.I.P." underwent a meticulous analysis of the song's lyrics, music video, and interviews to draw inspiration. The goal was to push the boundaries of conventional stage shapes and designs, resulting in a visually striking and immersive experience that defies expectations.

As the song begins, screens gracefully conceal the walkway and the seated cutout area where the backup singers are positioned, building an air of anticipation and intrigue. With the onset of the music, these screens gradually ascend, unveiling the suspended chains and revealing Labrinth and the backup singers, creating a captivating visual reveal that captivates the audience.

The stage design features a split-level structure at one end, crafted to offer distinct visual layers. A commanding walkway extends prominently, encompassing Labrinth as he traverses its length. This bold design element adds a sense of grandeur and spectacle, leaving a lasting impression on viewers.

In a deliberate shift from the ethereal and dreamy ambiance of the preceding stage, the design for "When I R.I.P." embarks on a transition towards an intense and edgy atmosphere. The inclusion of imposing monumental stage elements establishes a formidable presence within the performance space. This powerful impression is reinforced by the strategic use of heavy concrete materials that envelop the stage, creating a raw and industrial aesthetic. The hanging chains adorning the walkway add a dynamic element, both visually captivating and symbolic in nature.

Some key words the song brings up are; encompassing, power, movement, and nervous.

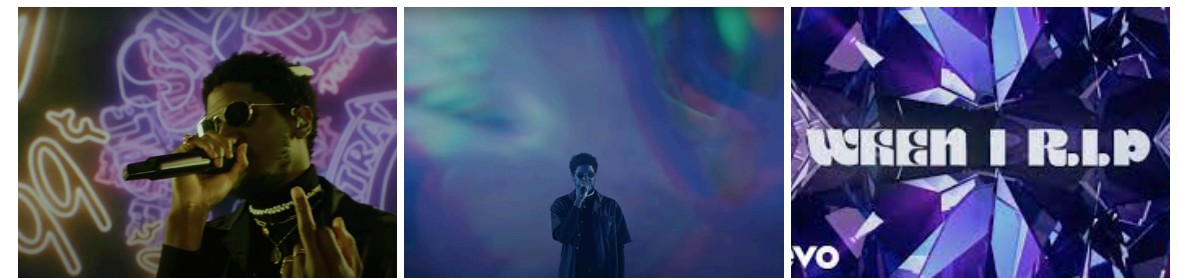


fig. 196-198: Images from Labrinth's "When I R.I.P." music video

¹ <https://www.youtube.com/watch?v=4boydqjUa6s>

LYRICS TO LABRINTH'S SONG "WHEN I R.I.P."

[Intro]

Chyeah
They been waiting for me
Hahaha
What the fuck? The fuck?

[Chorus]

Feel the morning on my face
Ain't a pill that I didn't take
Just a lifetime, could say it's been a long day
'Cause I'ma sleep when I RIP, ba-da-ba-dum

[Verse 1]

Flashbacks
Relapses
Camera flash
And don't forget your hashtag
Rucksack
Uh, white stacks
You're a dead man
Had better rid of that gat
You gonna run game, it don't ever run you, uh
When they bitchin' on your name, you say, "Fuck you too," too
You say fuck a court case, give detective no clues, clues
'Cause I'm Indiana J when I'm trippin' on the juice (Now let's get real quiet)

[Bridge]

Feel so, feel so stupid
Ooh-ooh-ooh-ooh
Ye-yeah, talk to me

[Verse 2]

'Bout to make a big deal, uproar
And I'm in for the kill, La Roux
Bitches lookin' like a meal, contour
Percocet until we can't feel no more
And I smoked somethin' that gon' knock me out, out
But somehow this body just won't stay down, down, down (Now let's get real quiet)

[Chorus]

Feel the morning on my face
Ain't a pill that I didn't take (Ba-da-ba-dum)
Just a lifetime, could say it's been a long day (Ba-da-ba-dum)
'Cause I'ma sleep when I RIP, ba-da-ba-dum¹

Link to music video: <https://www.youtube.com/watch?v=9-KAqC2P3Gk>

¹"When I R.I.P.". Genius. Accessed June 20, 2023. <https://genius.com/Labrinth-whenirip-lyrics>.



fig. 199: Photograph of Budweiser Stadium for a concert.

VENUE SELECTION

Budweiser Stage
 Toronto, Ontario
 square foot
 16, 000 seats

The Budweiser Stage, is an outdoor amphitheater located in Toronto, Ontario. It is a popular venue for concerts and live performances, known for its unique setting and picturesque views of the Toronto skyline and Lake Ontario.¹

Being an outdoor amphitheater, the Budweiser Stage provides a natural and scenic backdrop for performances. The stage can be oriented to take advantage of the beautiful views of the city and the lake, creating a visually stunning experience for both performers and the audience.²

The venue has a seating capacity of approximately 16,000, including reserved seating in the pavilion area and general admission lawn seating. A thrust stage design could allow for better distribution of performers across the stage, ensuring that both seated and lawn audiences have an enhanced viewing experience.³

The Budweiser Stage's design allows for flexible stage setups and production elements. A thrust stage can be accommodated while having room for standing and seating audience members.

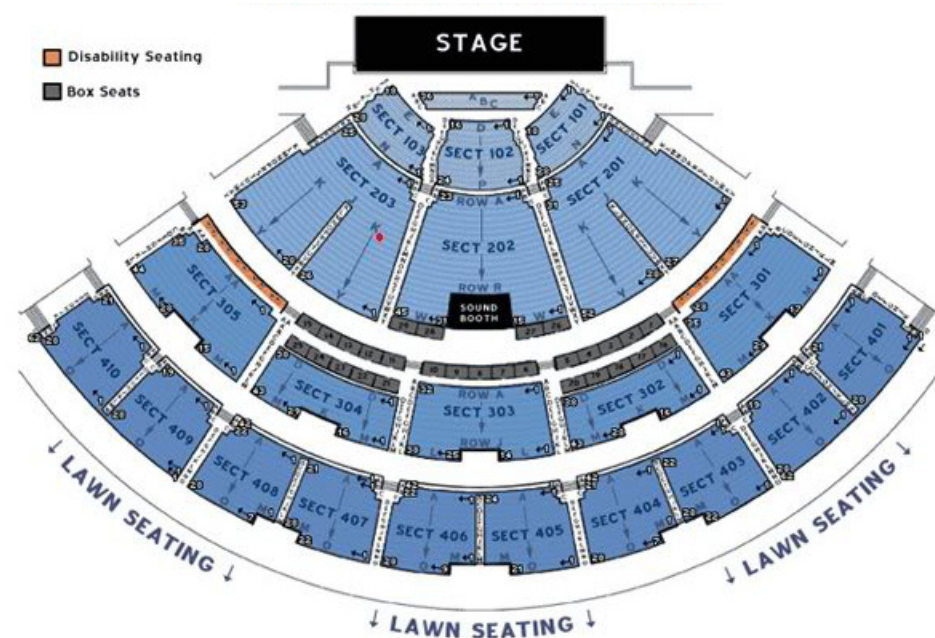


fig. 200: Seating Chart for Budweiser Stadium.

1 Canadian Amphitheatre. Accessed July 15 2023. <http://www.canadianamphitheatre.net>.
 2 Canadian Amphitheatre.
 3 Canadian Amphitheatre.

INTENSE & EDGY

Intense and edgy adjectives were chosen based on sequence of different rhythms that the song presents. The song changes pace and is interrupted by hard beats that activate the listener ears and abruptly change the feeling of the song. This intense sequences pairs with a stark and abrupt stage that pushes itself into the audience. The thrust stage with an added roof element match the busy rhythms within the song and create a playground for Labrinth to push the edgy vibes of the song further.

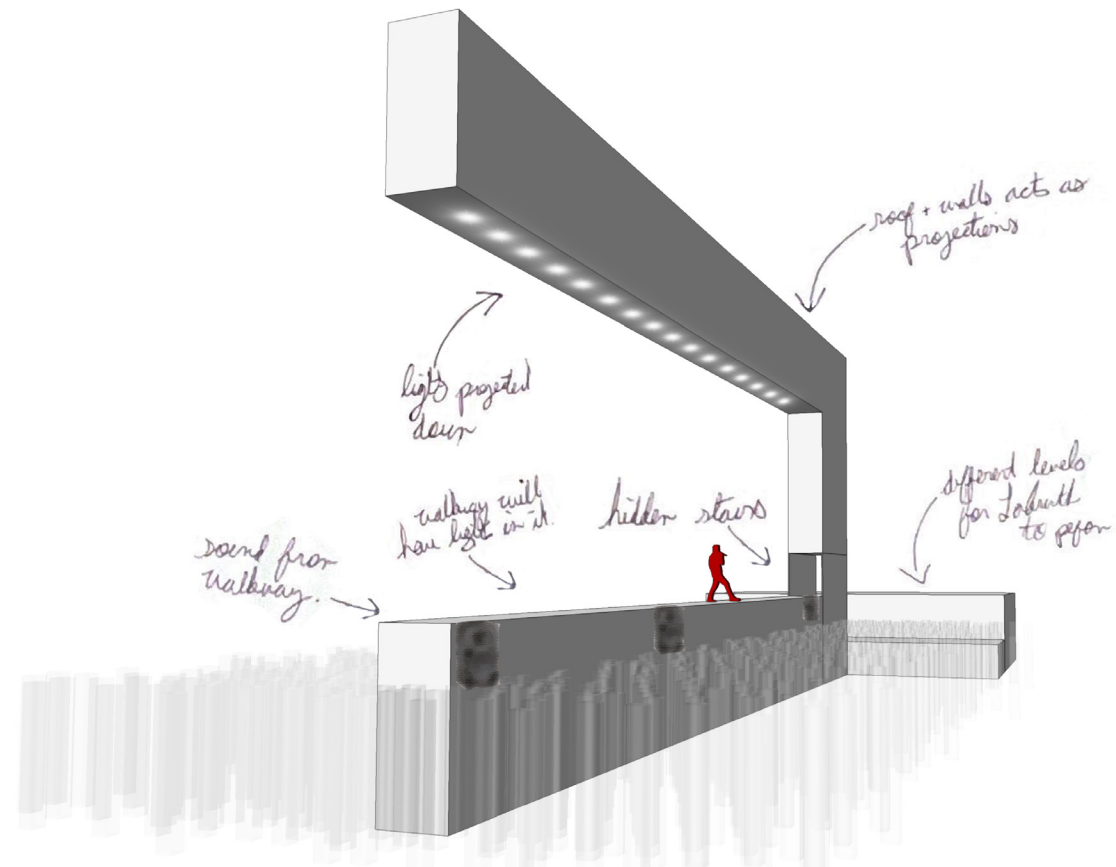
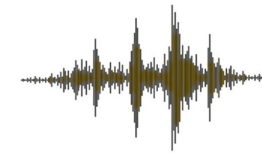


fig. 201: Diagram showing placement of stage elements, speakers, and lights for Labrinth's song "When I R.I.P."



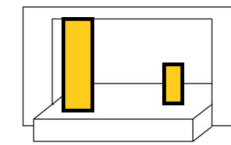
TIME

Labrinth's movement and the movement of the screen on the walkway will be timed with the dramatic rhythm of the song. At the first base drop the screen will be lifting and Labrinth will be revealed. As the song continues the chains will come down and be timed with the shattering effect in the middle of the song.



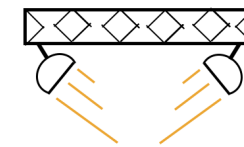
SOUND

By configuring the music to deliver sound independently to each side of the walkway, a tailored audio experience can be created for the audience. With this setup, the music will be synchronized with Labrinth's performance and delivered separately to the left and right sides of the walkway. This can be achieved through a combination of speakers, amplifiers, and audio mixing techniques. Different elements of the music can be emphasized or panned to specific sides, creating a sense of movement and depth.



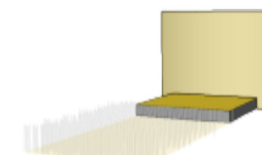
SCALE

The design will incorporate a large-scale walkway, serving as a central visual elements that splits the audience and brings Labrinth closer to them. The large roof over the walkway will add space for projections and lights.



LIGHT & DARKNESS

The addition of lights coming from below and above the stage walkways will further enhance the visual experience during Labrinth's performance. The lights coming from below the stage walkways, often referred to as "uplighting," can have several effects. They can cast dramatic shadows, create dynamic contrasts, and add depth to the performance. Uplighting can highlight Labrinth and create a visually striking silhouette effect. It can also illuminate the audience, allowing Labrinth to connect more intimately with them and fostering a sense of engagement. Lights coming from above the stage walkways can provide additional lighting angles and perspectives. These lights, often referred to as "overhead lighting" or "downlighting," can be used to create various effects. They can enhance Labrinth's presence on stage, illuminate specific areas or props, and add an overall sense of brightness and ambiance to the performance.



SPACE

The covered walkway becomes a central architectural element that divides the performance space into two distinct areas for the audience. The design incorporates elements such as elevated platforms, and stairs along the main stage and walkway to create different levels and dynamic spaces for Labrinth to interact with. This spatial arrangement enhances the sense of depth and dimension, providing varied perspectives and vantage points for each group of the audience. It also fosters a shared experience among the audience members in each group, creating a sense of connection and engagement.



AUDIENCE

The split arrangement of the covered walkway allows for a more intimate connection between Labrinth and each group of the audience. The design elements, including the synchronized movements, tailored sound experiences, dramatic lighting, and spatial configuration, all contribute to an intense and edgy atmosphere that captivates and energizes the audience.

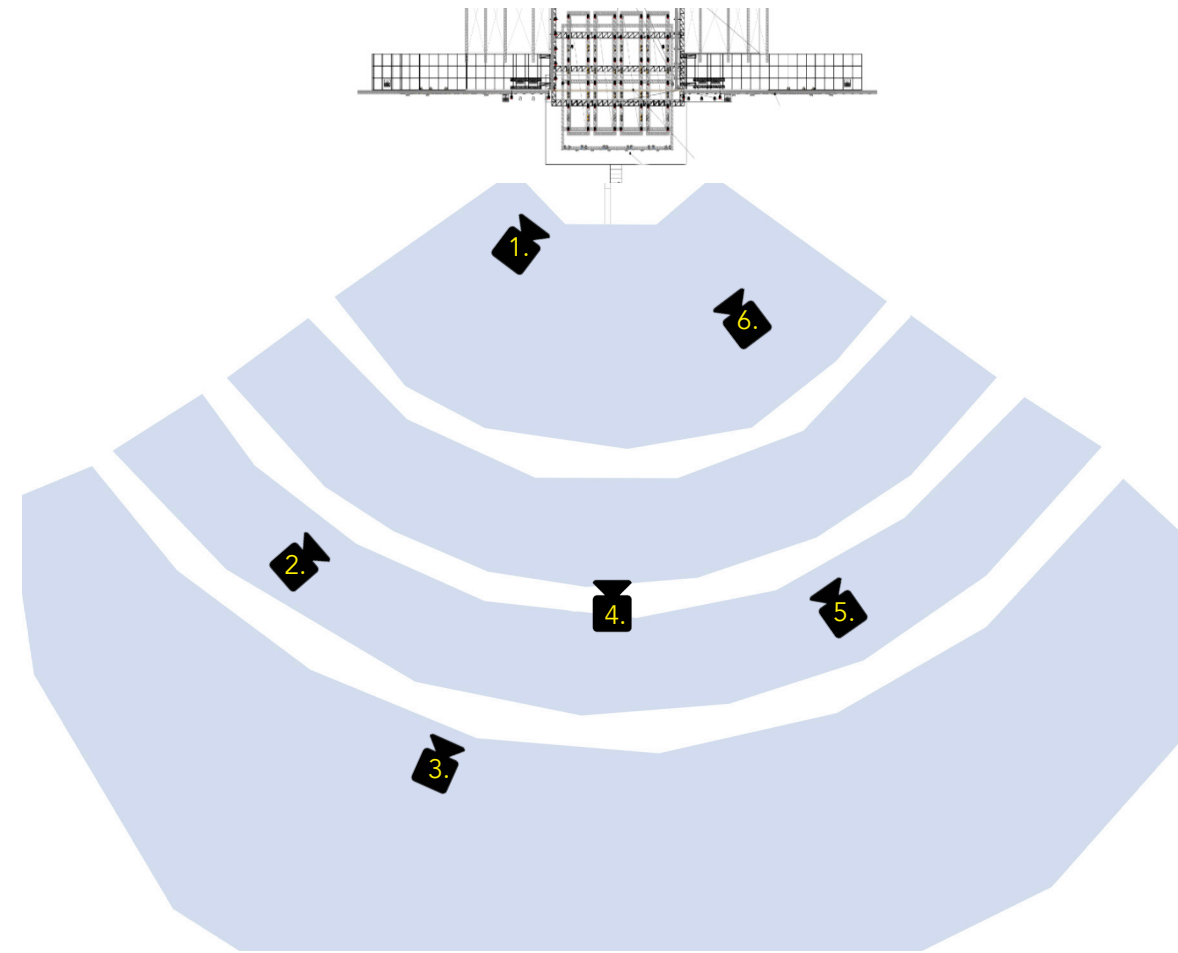


fig. 202: Simplistic floor plan of Budweiser Stadium for Labrinth's song "When I R.I.P.". The blue is available seating, and each camera corresponds to the images in fig. 203 showing the sightlines of different seats.

SIGHTLINES FOR THE SONG "WHEN I R.I.P."

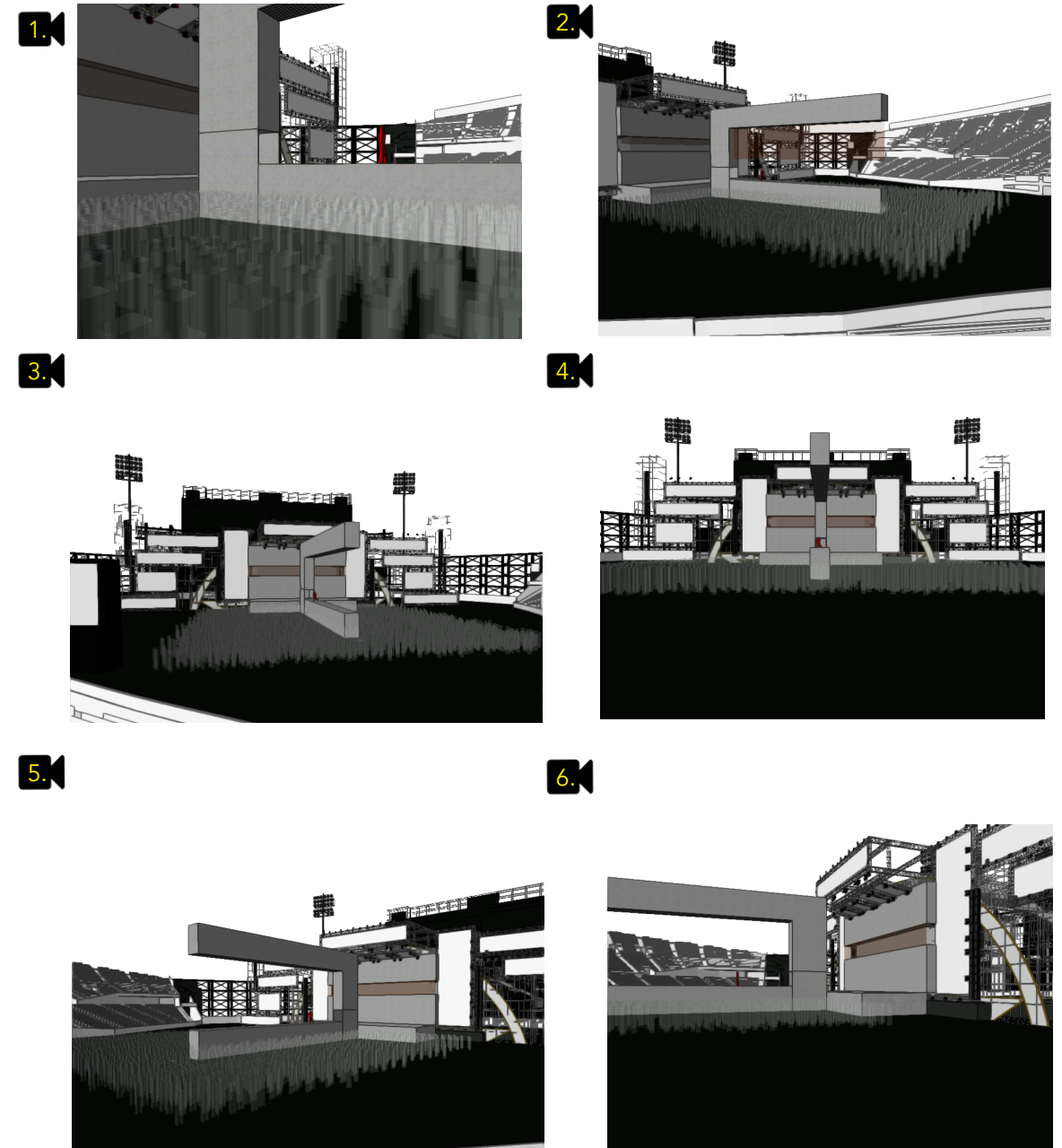


fig. 203: These images correspond to the diagram fig. 202, showing different sightlines depending on seat location. The thrust stage creates similar views from all three sides of the stage but some sightlines will be blocked if you are seating on the side of the stage.

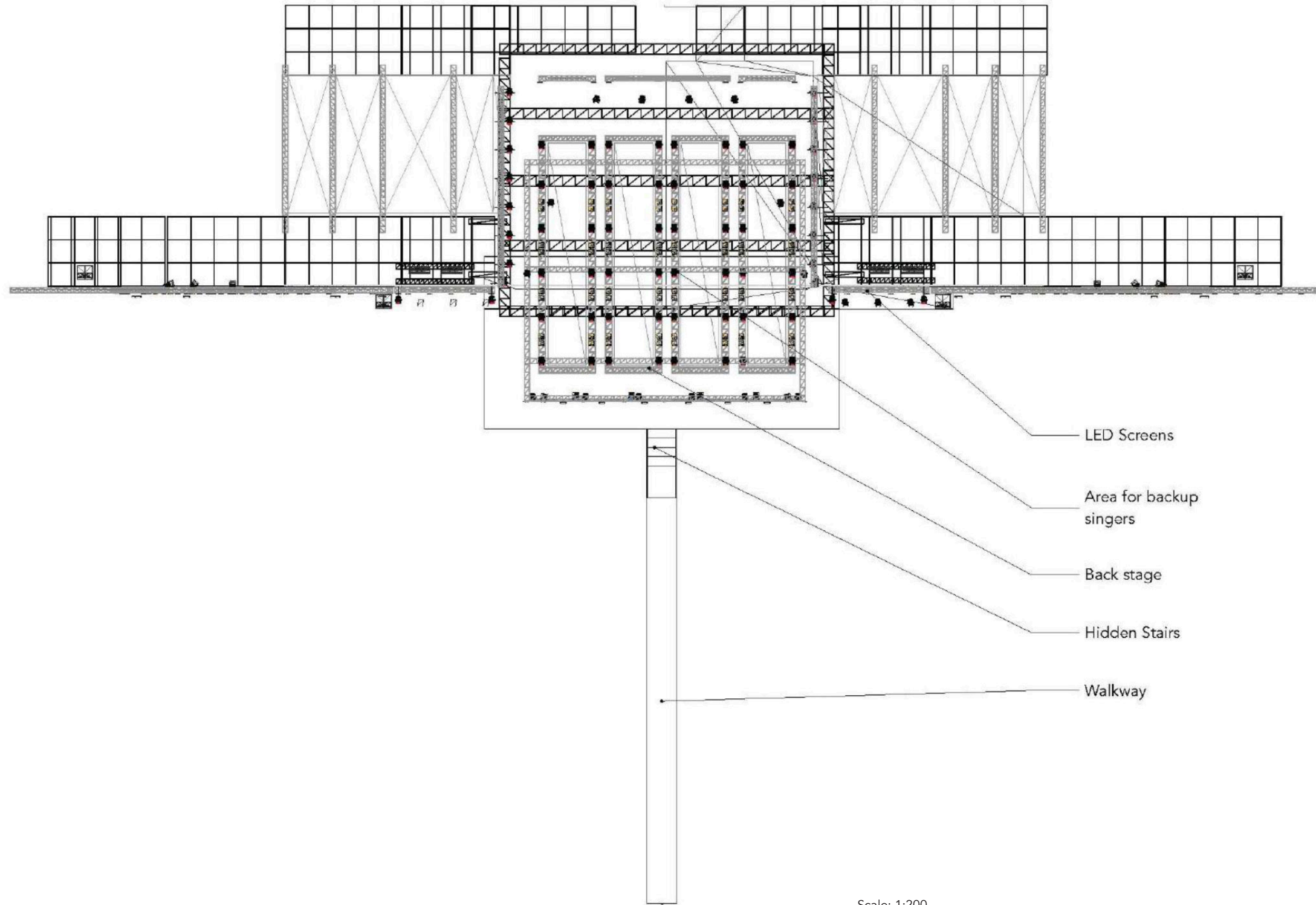
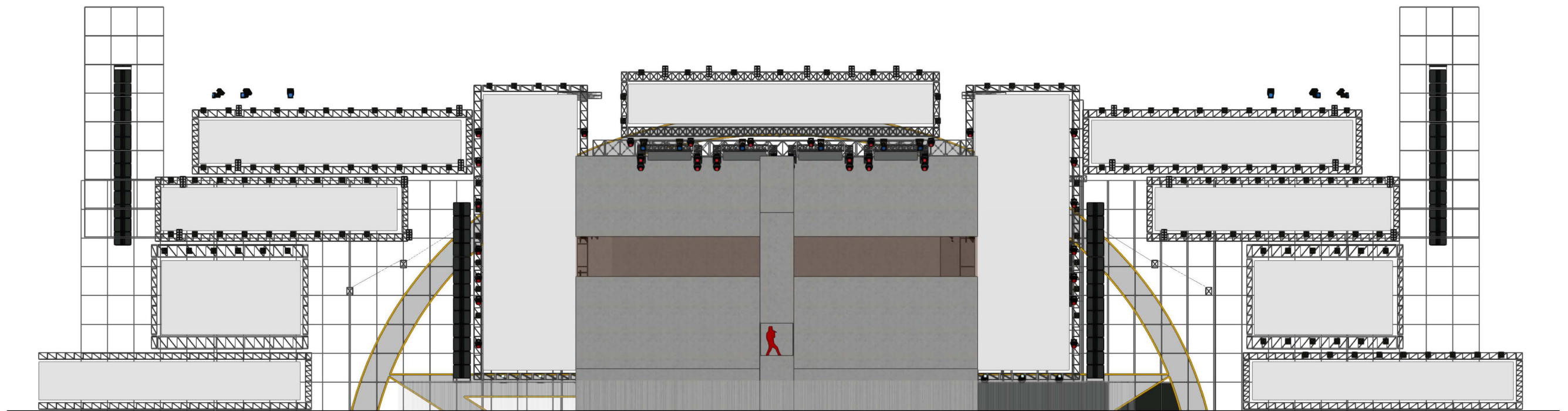
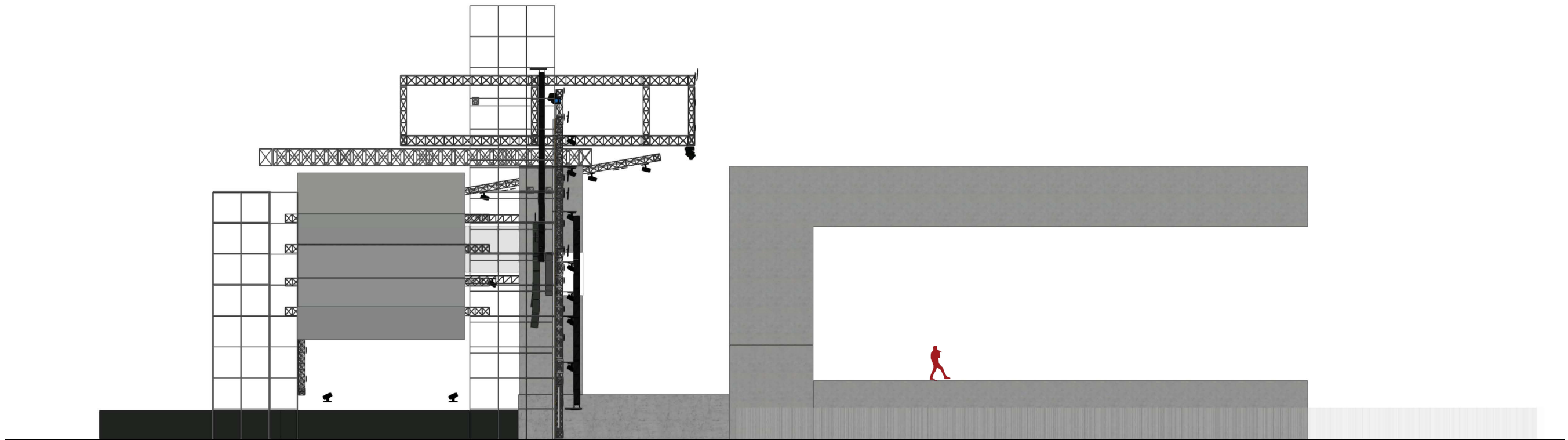


fig. 204: Plan of stage for Labrinth's song "When I R.I.P."



Scale: 1:200

fig. 205: Front Elevation of stage for Labrinth's song "When I R.I.P."



Scale: 1:200

fig. 206: Section of stage for Labrinth's song "When I R.I.P."

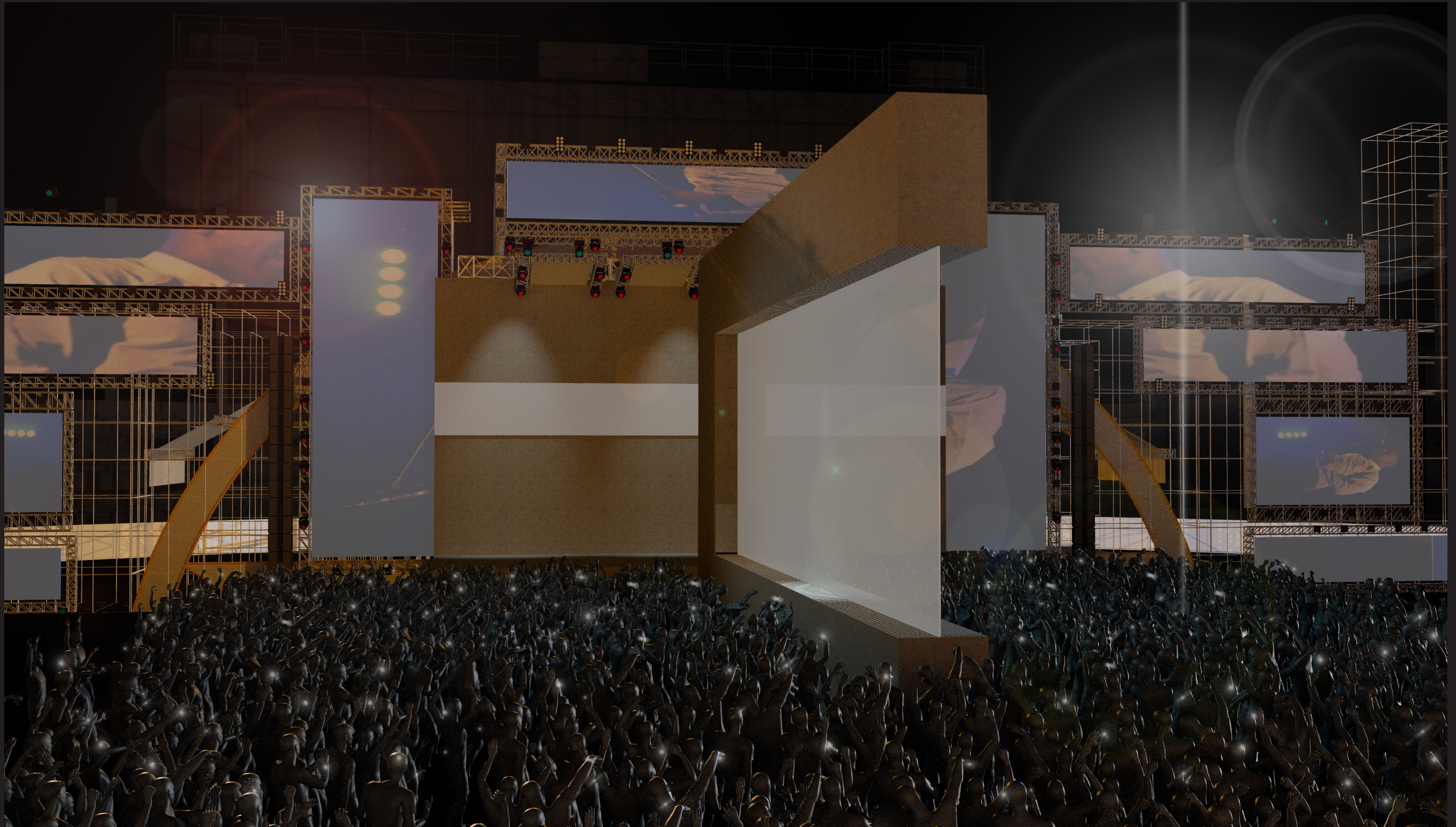


fig. 207: Render showing how the song "When I R.I.P." will look as the song opens. The walkway will have a screen pulled down as well as a screen covering where the backup singers are located. The LED screens will have abstract visuals of Labrinth and the colours will be warm yellow tones.



fig. 208: Render showing how the song "When I.R.I.P." will look as the song continues. The walkway and backup singers screen will begin to be pulled up revealing Labrinth of the walkway.



fig. 209: Render showing how the song "When I.R.I.P." will look as the song continues. The walkway and backup singers screen will be fully lifted and hanging chains on the walkway and the backup singers area will be revealed.

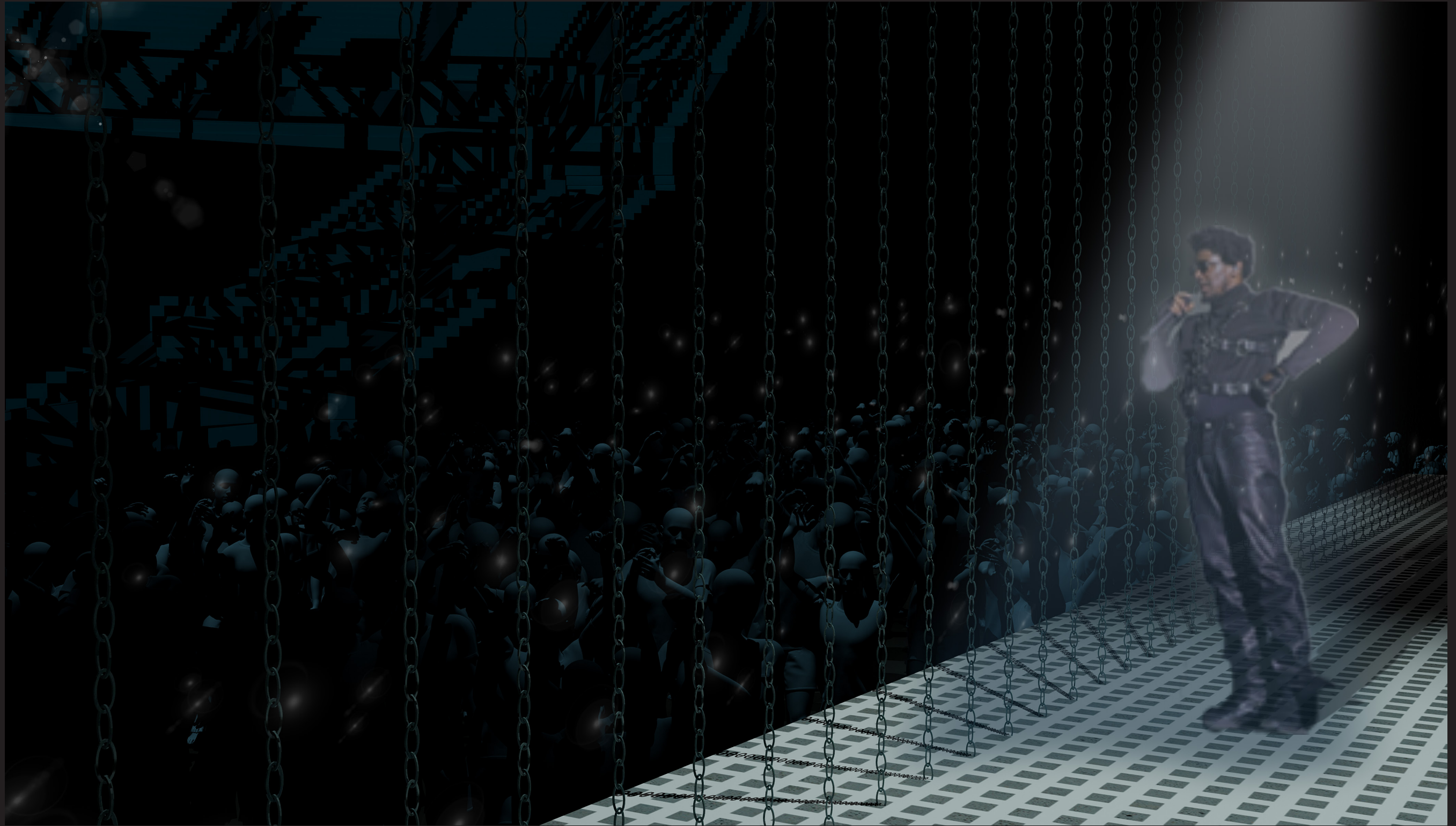


fig. 210: Render showing Labrinth's view from on stage during the song "When I R.I.P.".

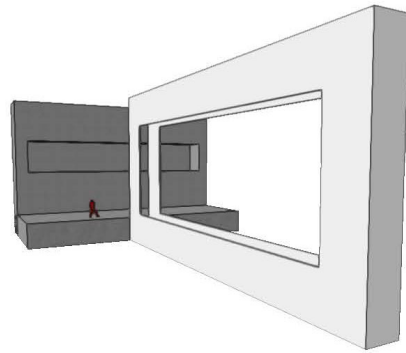


fig. 211: Hanging fabric stage.

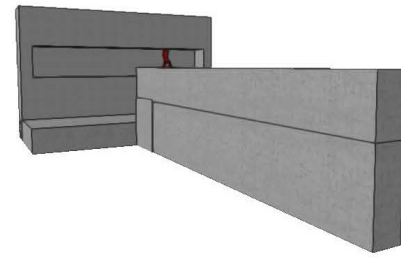


fig. 212: Roof pulled down.

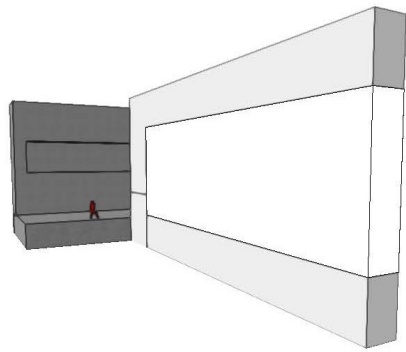


fig. 213: Walkway used as screens.

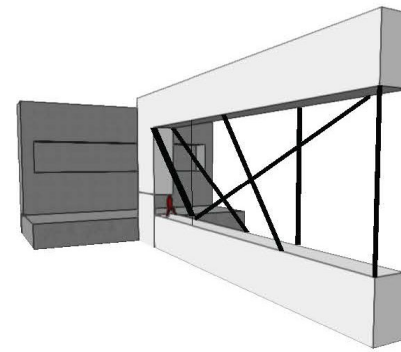


fig. 214: Hanging objects from walkway.

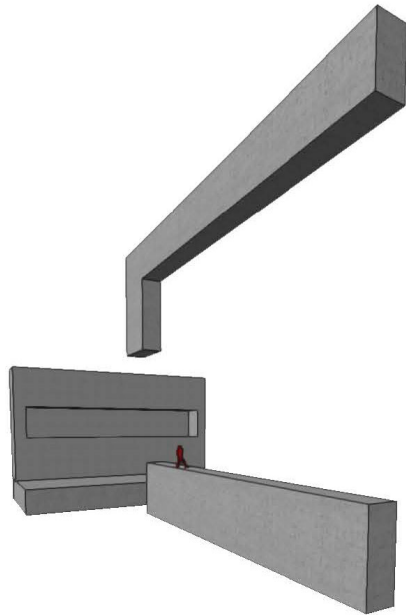


fig. 215: Walkway pulled up.

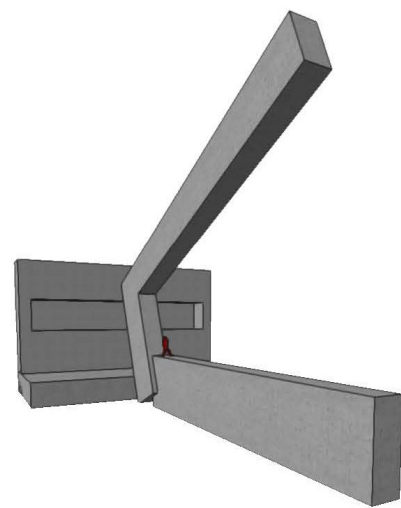


fig. 216: Walkway tilted.

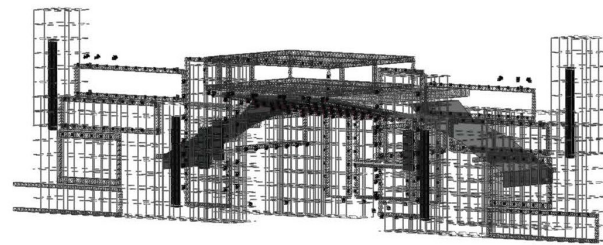
"WHEN I R.I.P." STAGE FLEXIBILITY

The stage design for Labrinth's song "When I R.I.P." has an level of flexibility to it, allowing for various adaptations and changes to suit different songs. One notable aspect is the ability to modify the runway's roof, transforming it into a more traditional runway setup. By lifting the roof, the stage can be reconfigured to accommodate a different aesthetic or performance style, providing versatility for future productions.

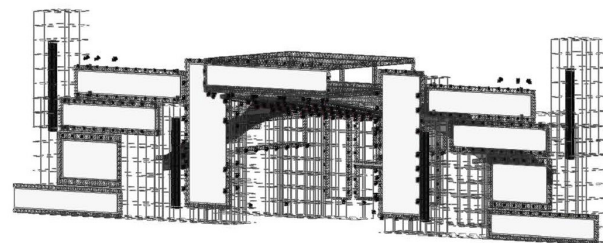
The runway serves as a dynamic element that can be utilized as a large screen projection. This feature enhances the visual experience by displaying visuals, imagery, or even synchronized animations that complement the performance. This creative use of the roof as a projection surface adds an extra layer of immersion and visual impact to Labrinth's live performances.

Another possibility is the concept of suspending various objects from the runway's roof, such as chains that Labrinth can interact with during his performance. This arrangement creates a unique visual effect and adds an element of movement and interactivity to the stage design. By walking through the hanging chains, Labrinth can create dramatic and visually striking moments that captivate the audience.

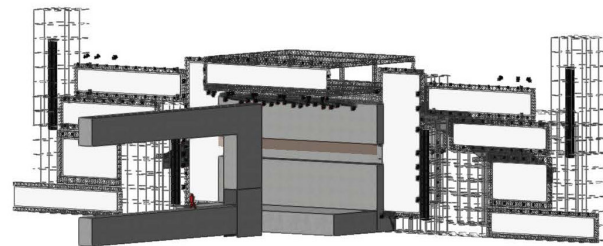
By incorporating these adaptable elements into the stage design for "When I R.I.P.," the production team has not only created a captivating experience for Labrinth's performance but also established a framework that can be repurposed and modified for future songs or live shows. This flexibility allows for continued innovation and experimentation, ensuring that each performance maintains a fresh and engaging atmosphere while showcasing Labrinth's artistry in exciting new ways.



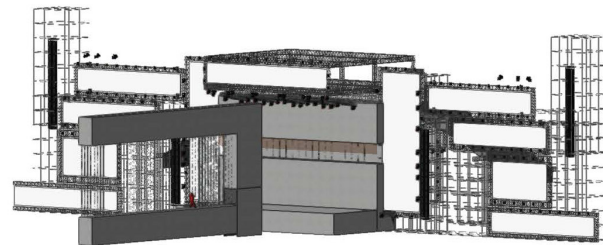
Step One: Building Structure around Stage



Step Two: Adding LED Screens



Step Three: Building Stage and Walkway



Step Four: Adding Hanging Wires

fig. 217: "When I R.I.P." stage logistics, showing the steps for the set-up process.

"WHEN I R.I.P." STAGE LOGISTICS

The logistics of setting up the stage for Labrinth's song "When I R.I.P." at Budweiser Stage is similar to the last stage.

Building the Extended Stage Area: The morning of the show, the setup crew arrives at Budweiser Stage to start the preparations. The first step is to build the extended stage area, this involves the extended structural elements around the stage.

Adding the LED Screens: With the stage area in place, the next step is to add the LED screens. These screens serve as a crucial visual element, displaying visuals that complement the intensity of "When I R.I.P." The LED screens are positioned strategically around the stage to create an immersive backdrop. The setup crew ensures that the screens are securely mounted and properly calibrated to deliver high-quality visuals during the performance.

Building the Stage and Walkways: After the LED screens are installed, the crew proceeds to build the main stage and walkways. The stage and walkways are constructed to facilitate movement across the stage, this will be assembled as a simple framing structures.

Adding Additional Elements and Hanging Wires: The final stage of the setup process involves adding any additional elements including the hanging wires will be added to the walkway.

CHAPTER FIVE: DESIGN WORK

STAGE DESIGN THREE: 'SEXY MF' BY LABRINTH

The final stage design is done for Labrinth's song "Sexy MF" which is "filled with copious ear candy, with sly references to Prince and James Brown, death-defying vocal harmonies, all scaffolded atop an indomitable piano groove."¹

The design for this stage is a large protruding roof that encompasses both Labrinth and the audience, bringing them together in one space. The song enhances an environment that is upbeat and funky because of its beat, lyrics, and overall temp. The design accentuates this by bridging a connection between Labrinth and the audience where they are both connected under the roof.

The roof serves as a canvas for dynamic projections and vibrant lights, which serve to enhance the atmosphere and envelop the audience in a transformative encounter. These elements work in unison to create a transcendent experience, immersing the audience in a fantastical realm where the boundaries of reality dissipate, giving way to a realm where music, dance, and power coalesce.

Some key words that come from the song are: groovy, dance, buoyant, fantastical, and power.



fig. 218-220: Images from Labrinth's "Sexy MF" music video.

¹Charlie Harding and Nate Sloan, "Why Labrinth's 'Sexy MF' Is a Modern Classic* (*According to NPR's Sam Sanders)" (2021), Vulture, accessed June 29, 2023, <https://www.vulture.com/article/labrinth-sexy-mf-modern-classic-sam-sanders.html>.

LYRICS TO LABRINTH'S SONG "SEXY MF"

[Verse 1]

Ayy, you're a pretty little thingling
Ayy, what the **** was the thinking?
Drink got me gettin' a little ahead of myself (Oh-oh-oh-oh)
Ayy, you should pay me a visit
Yeah, for a cup of that English
Ayy, you could talk dirty to me as well (Oh-oh-oh-oh)

[Pre-Chorus]

God made a masterpiece (God made a masterpiece)
God made a masterpiece (God made a masterpiece)
You're in a league all by yourself (Ooh-ahh-ahh)
And I got a fantasy (I got a fantasy)
Get into bed with me (Get into bed with me)
Promise you that you'll rule the world

[Chorus]

Sexy motherf**ker (Sexy mother*****)
I'm lookin' at you (I'm lookin' at you)
Why don't you go ahead and move on up (You better move up now)
Make that space for two (Remember)
You got me
'Cause ain't no time for dilly dallyin'
Ain't no playin' cool, oh no (No-no)
Sexy motherf**ker (Sexy mother*****)
Do me like you do (You do)
Mm-mm (I'm ready for a verse)
Ah

[Verse 2]

Ayy, ought to say they're obsessive
Yeah, I'm the one they possess with
Ayy, once it come, they don't really wanna be, no, no (Ooh-ooh-ooh)
Ayy, we should make this official
Ayy, is you waitin' on typical?
So I need a hot one ridin' with me (Sexy mother*****, oh-oh-oh-oh)

[Pre-Chorus]

God made a masterpiece (God made a masterpiece)
God made a masterpiece
You're in a league all by yourself (Ooh-ahh-ahh)
And I got a fantasy (I got a fantasy)
Get into bed with me (Get into bed with me)
Promise you that you'll rule the world

[Chorus]

Sexy motherf**ker (Sexy mother*****)
I'm lookin' at you (I'm lookin' your way)
Why don't you go ahead and move on up (Oh)
Make that space for two (Oh)
'Cause ain't no time for dilly dallyin' (Ain't playin' no games)
Ain't no playin' cool, oh no (Sexy mother*****)
Sexy motherf**ker (Sexy mother*****, oh-oh)
Do me like you do
Mm-mm-mm
Think you wore me out, oh¹

Link to the song: <https://www.youtube.com/watch?v=-wm6hX1cHbc>

¹"Sexy MF". Genius. Accessed June 20, 2023. <https://genius.com/Labrinth-sexymf-lyrics>.



fig. 221: Images of Echo Beach for a concert.

VENUE SELECTION

Echo Beach
 Toronto, Ontario
 4 000 General Admission¹

Echo beach is located on the Ontario Place park ground, on a sandy patch of Toronto's waterfront. This is a seasonal outdoor concert venue that was named in honor of local new-wave icons Martha and the Muffins' classic single "Echo Beach".²

This venue brings a fun, outdoor vibe with its beach feel which makes it perfect for Labrinth's song "Sexy MF". It inspires a relaxed feel for the audience while still having a mosh pit and space to dance. It consists of mostly general admission tickers with standing room as a first come first serve basses, with two small raised platforms for VIP tickets.

Its use of scaffolding for the stage allows for maximum adaptation and stage design, so it becomes a perfect place for the circle roof element. The scaffolding is used as the base of the main stage and stage roof. Adding additional support to that will help secure the roof element.

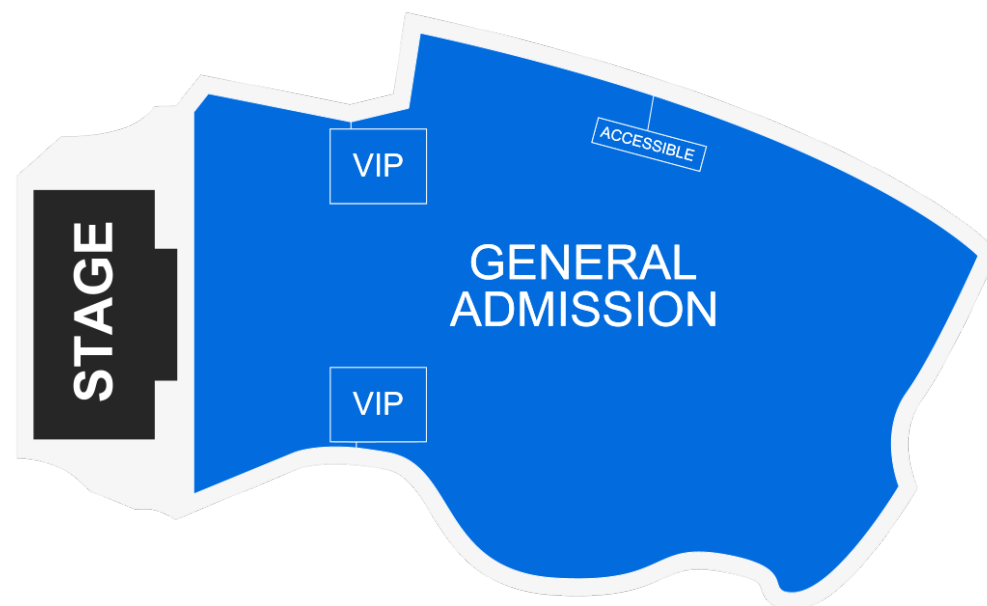


fig. 222: Seating chart for Echo Beach.

¹ Echo Beach. Accessed July 15 2023. <https://blog.ticketmaster.com/venue-faq-rbc-echo-beach-toronto-on/>
² Echo Beach.

UPBEAT & FUNKY

Upbeat and funky adjectives were chosen based on the nature of the song and its pop rhythm and lyrics. The song inspires dancing from the audience because of its faster pace and light hearted lyrics. The front stage helps with this as it creates a mosh pit area for the audience to dance in while being encompassed within the roof.

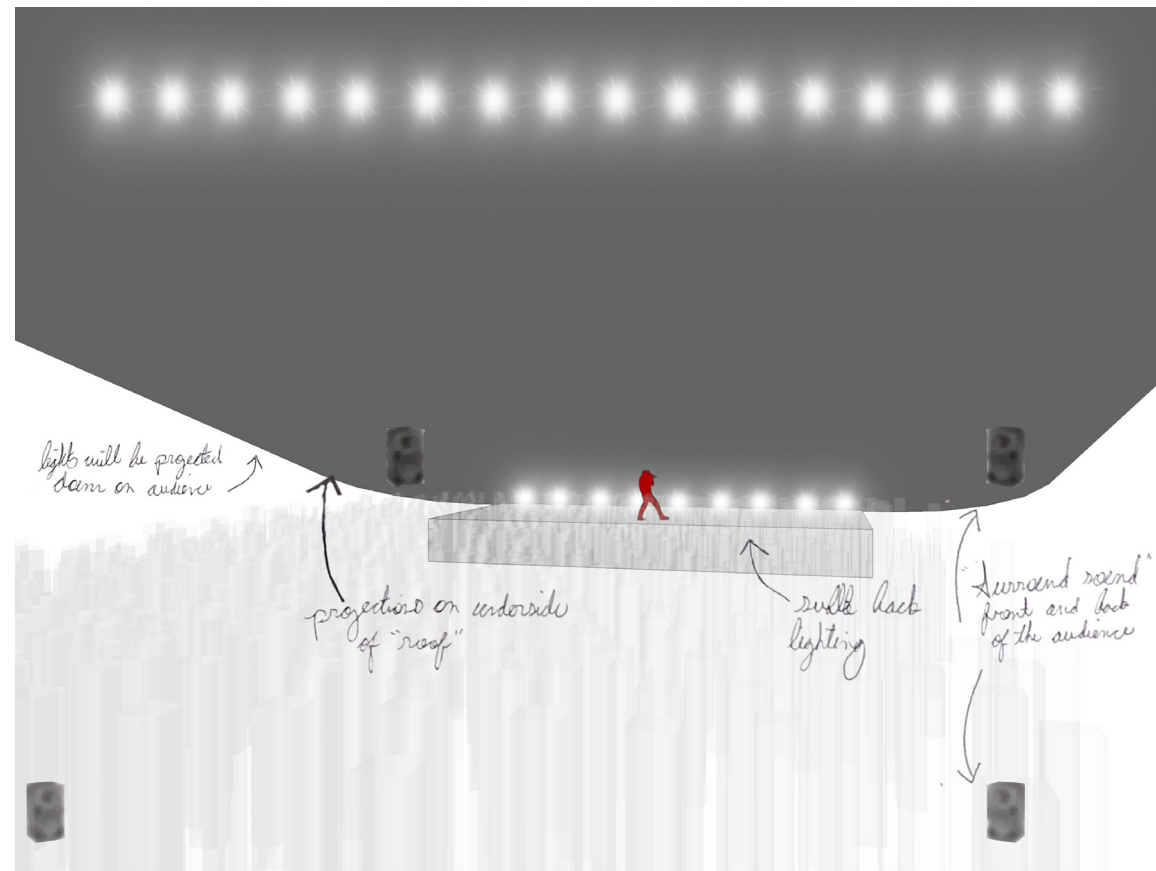
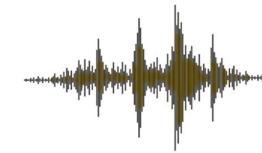


fig. 223: Diagram showing placement of stage elements, speakers, and lights for Labrinth's song "Sexy MF".



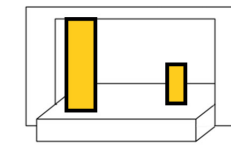
TIME

The timing of the song will be synchronized with the design elements to enhance the overall impact. During the more intense and dramatic parts of the song, the projections and lights will be timed to align with the beat and rhythm. This synchronization can create a dynamic visual experience, with lights pulsating and projections transitioning in harmony with the music.



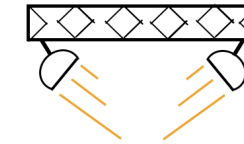
SOUND

This song is full of dramatic instrumental beats that will kick start the audience in dancing. To add depth and intensity to the sound experience, the audio will be played from both the front and back of the audience. Surround sound engulfs the audience in a multidimensional auditory environment. This distribution of sound helps to create a three-dimensional sonic landscape.



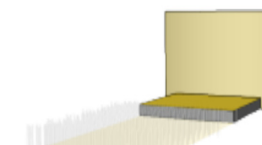
SCALE

The scale has now shifted to larger the human scale to create an intense environment that will make the audience feel connected to one another. The roof's presence will convey a sense of power and intensity, creating a visually striking experience.



LIGHT & DARKNESS

To enhance the intensity and edginess, the lights will project down from the roof, while having rapid movement to them. By illuminating the stage and Labrinth form above, this lighting will create dramatic shadows, intense contrasts, and an overall sense of heightened energy.



SPACE

The large roof becomes the defining element of the performance space. It not only covers Labrinth but also engulfs the audience, creating an immersive environment. The enclosed space can amplify the sense of intensity, creating a focused atmosphere where the audience feels fully immersed in the performance.



AUDIENCE

The audience will feel transformed into a new intense environment that will match the music because of the connection the roof creates between them and Labrinth.

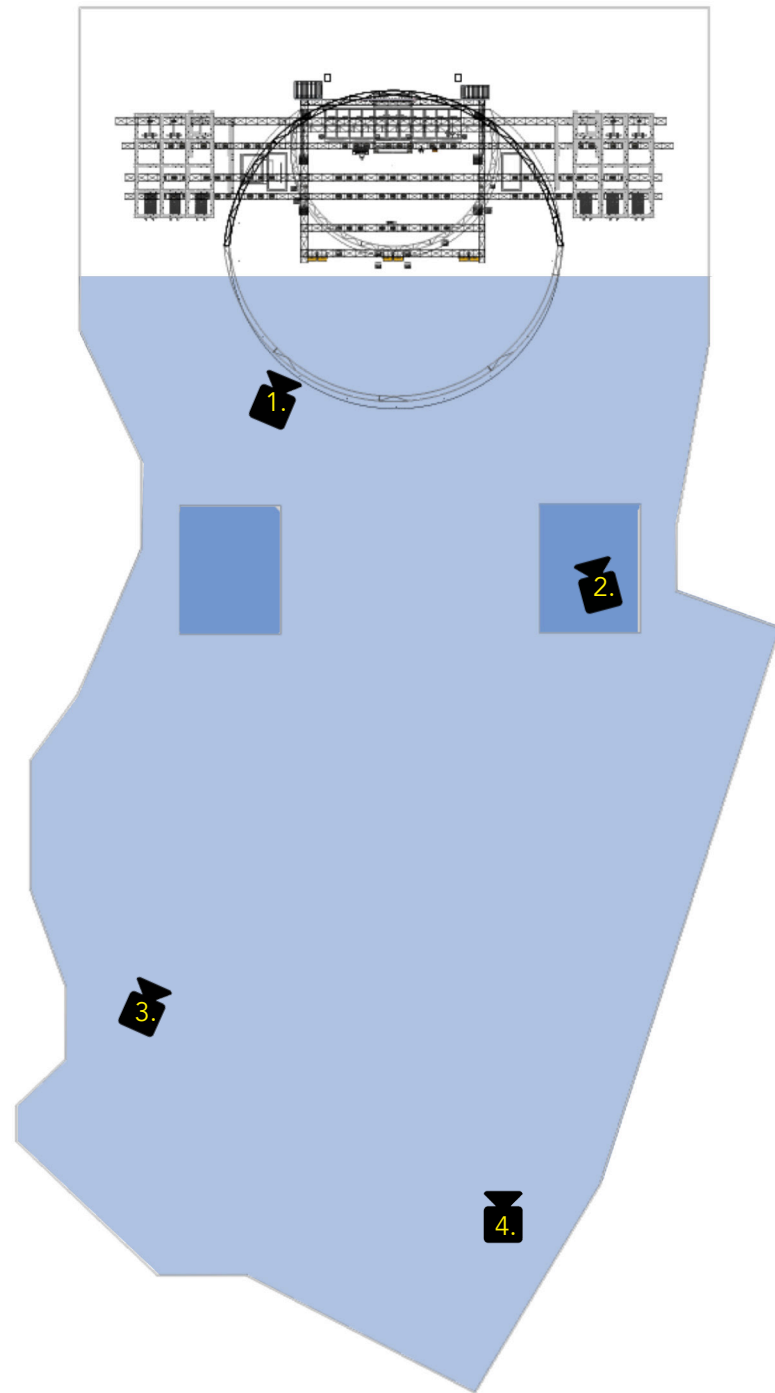


fig. 224: Simplistic floor plan of Echo Beach for Labrinth's song "Sexy MF". The blue is standing room and the darker blue is raised VIP standing area. Each camera corresponds to the images in fig. 225, showing the sightlines of different seats.

SIGHTLINES FOR THE SONG "SEXY MF"

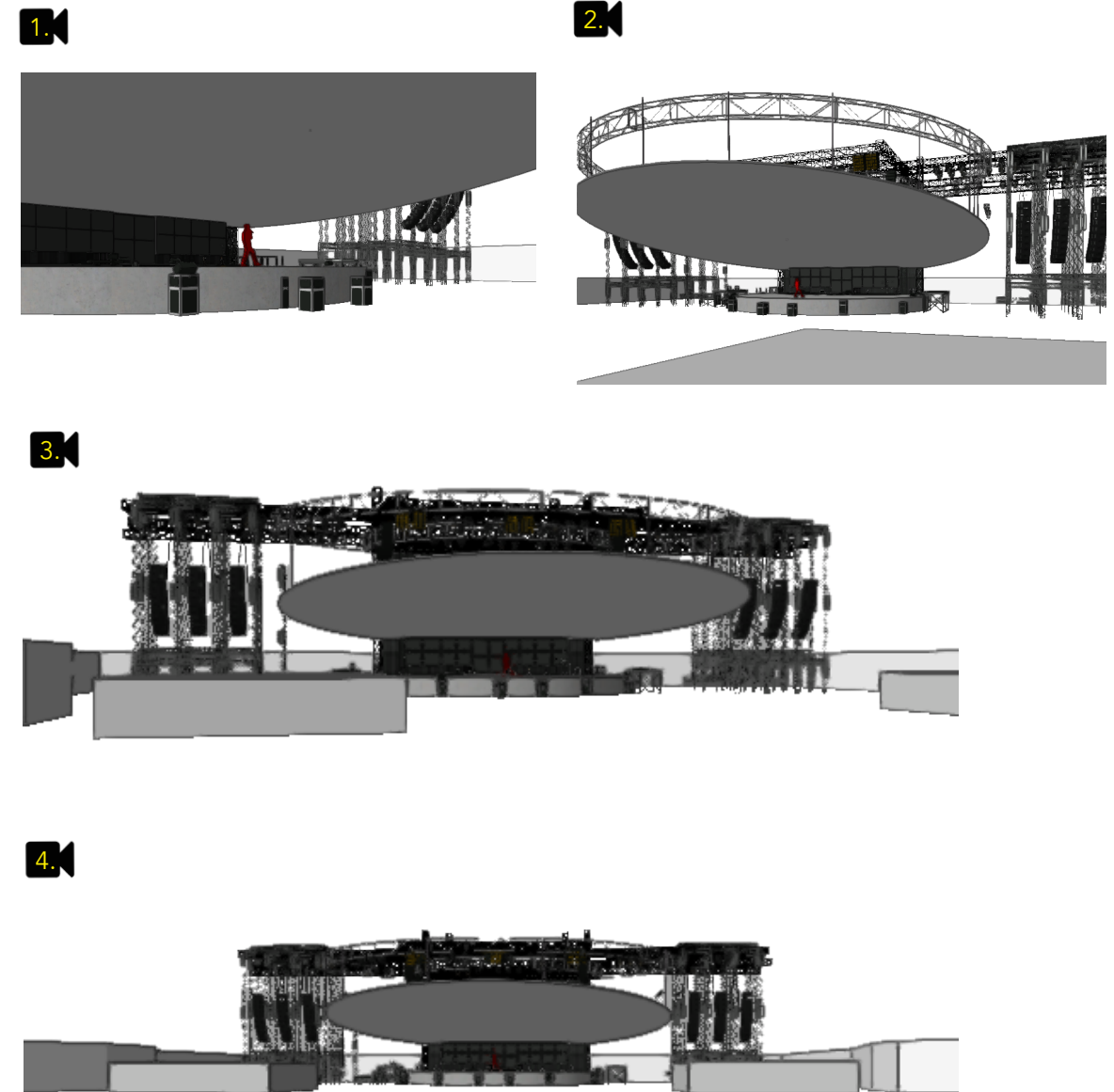
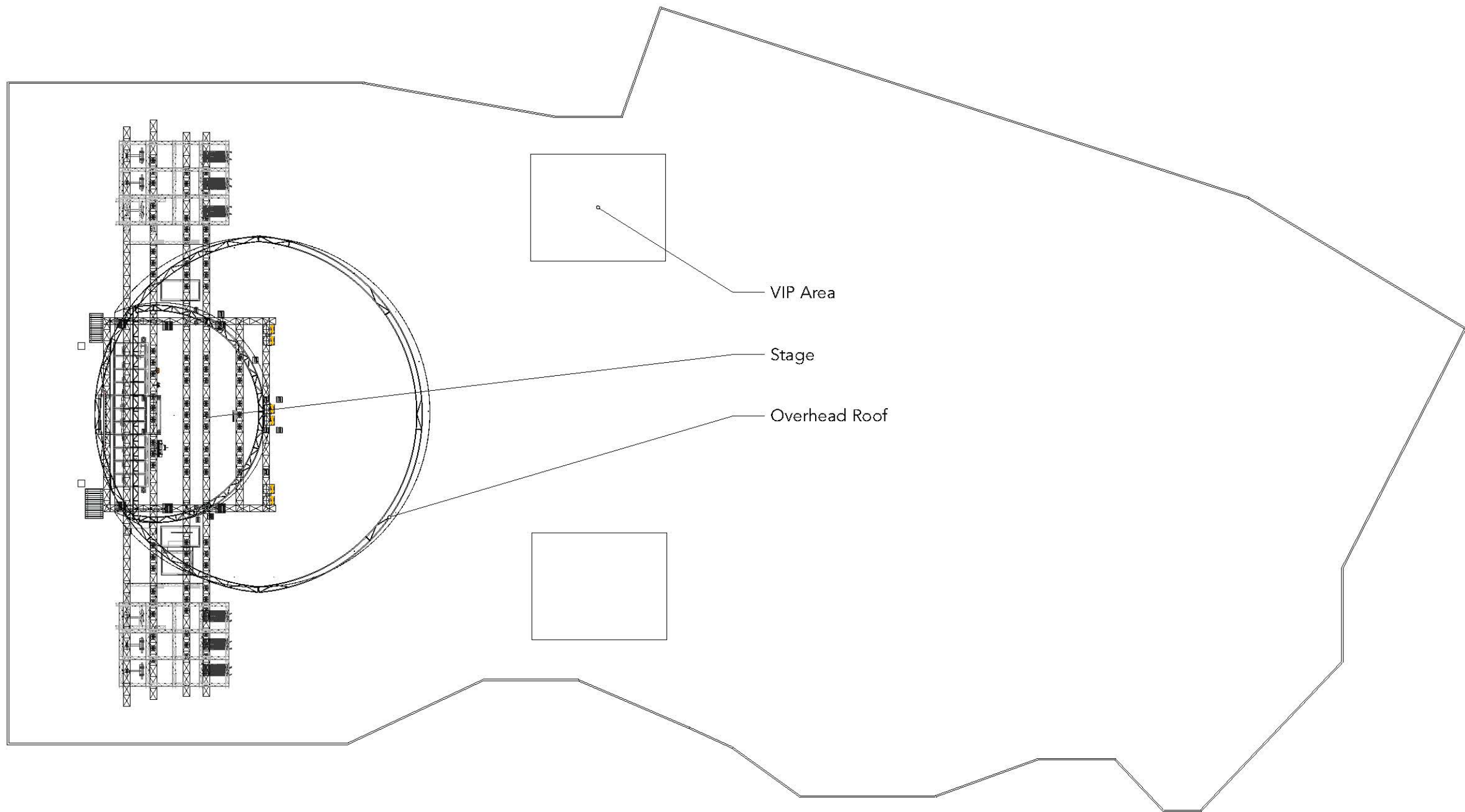
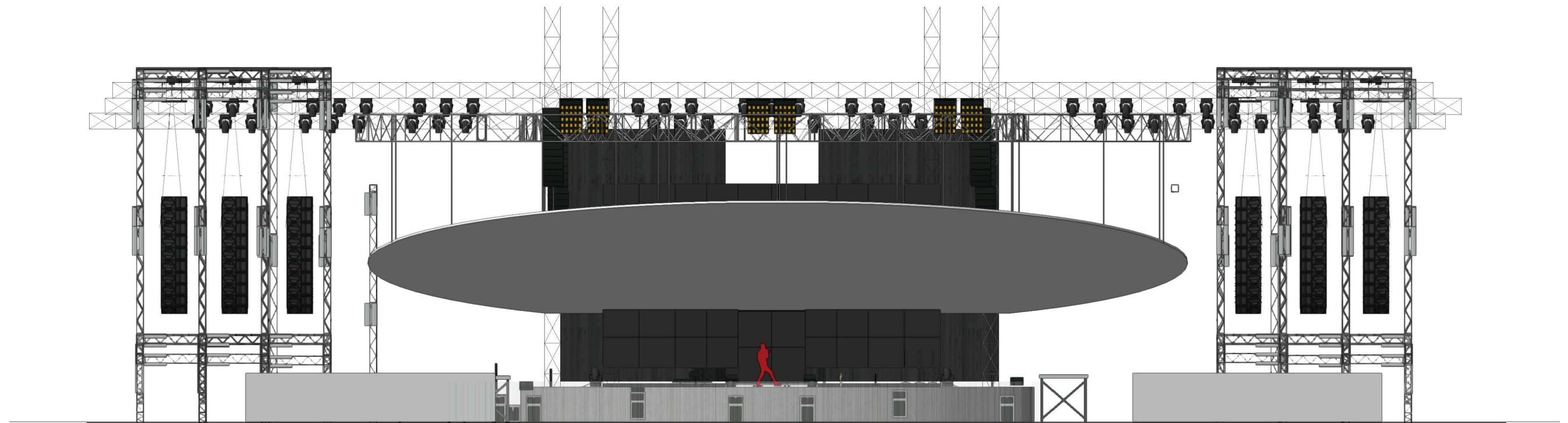


fig. 225: These images correspond to the diagram fig. 224, showing different sightlines depending on seat location. The front stage creates similar sightlines for all audience members.



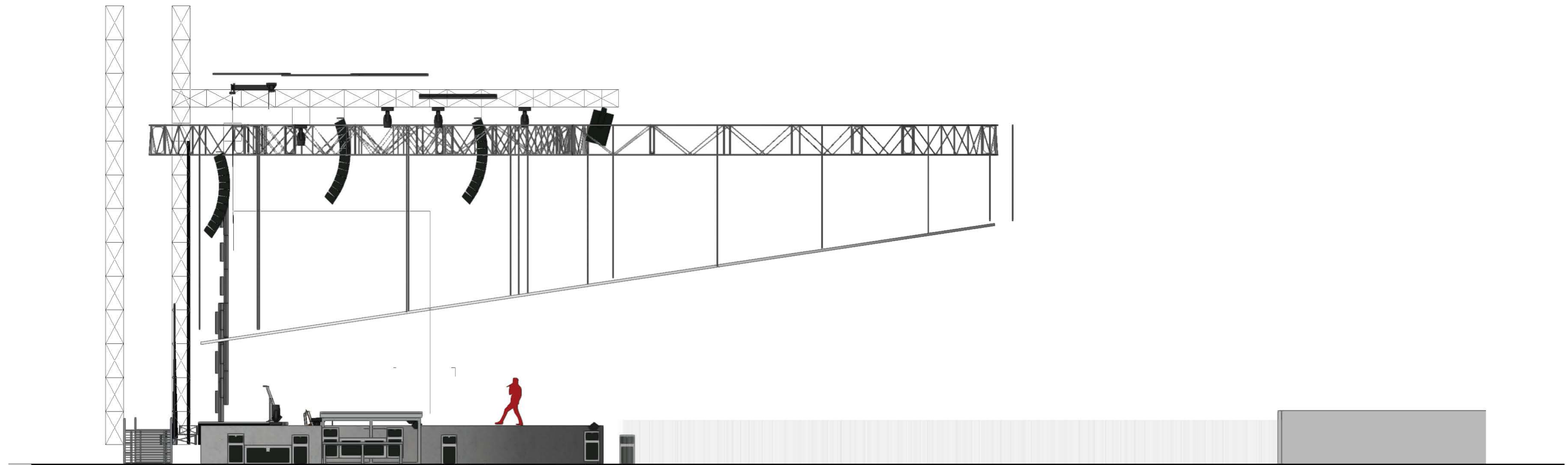
Scale: 1:20

fig. 226: Plan of stage for Labrinth's song "Sexy MF".



Scale: 1:200

fig. 227: Front Elevation of stage for Labrinth's song "Sexy MF".



Scale: 1:20

fig. 228: Side Elevation of stage for Labrinth's song "Sexy MF".

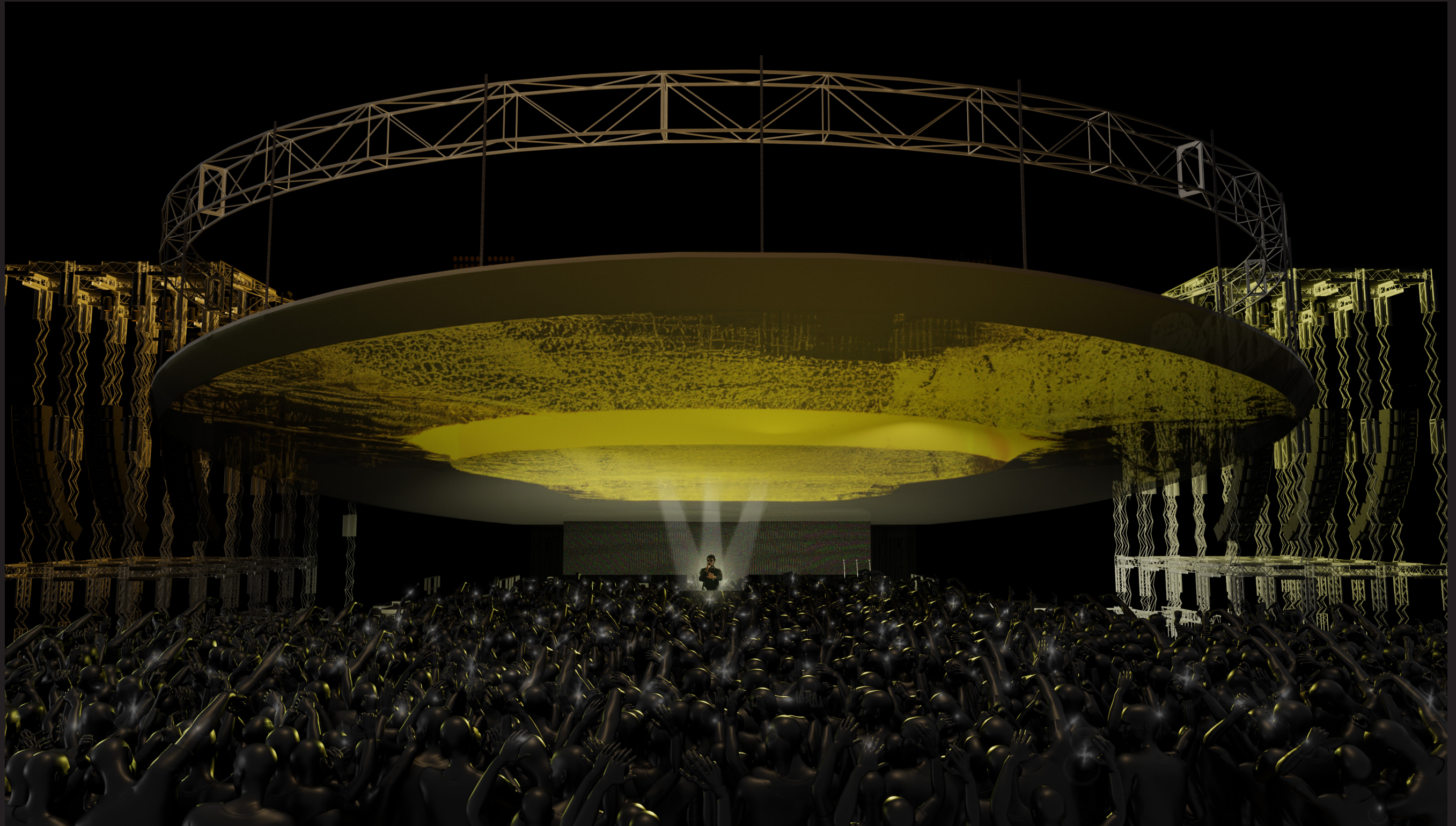


fig. 229: Render showing how the song "Sexy MF" will look as the song starts. Where the roof and back wall meet a yellow light will be shining, creating a sunset environment.

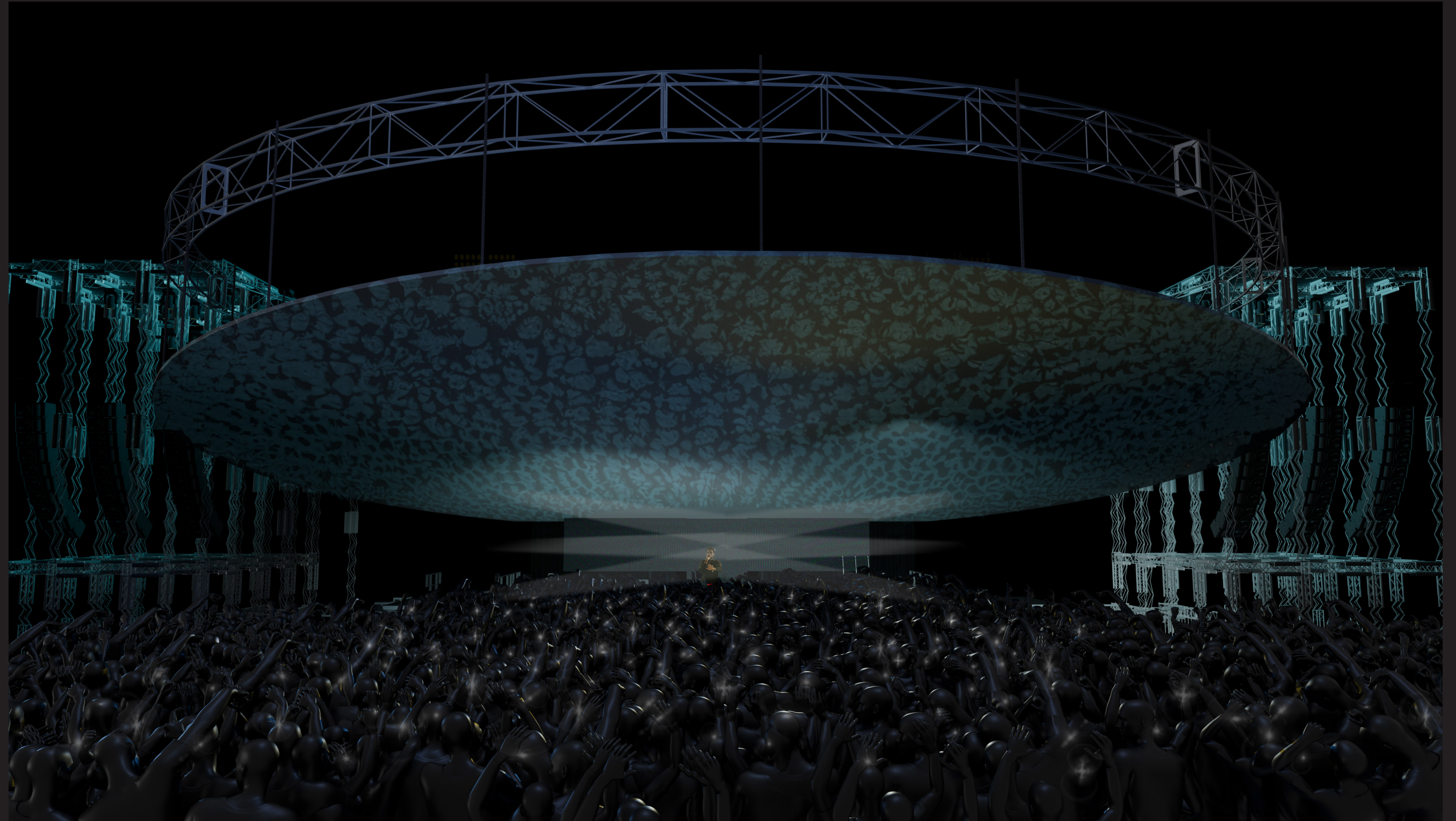


fig. 230: Render showing how the song "Sexy MF" will look as the song continues. The yellow light becomes brighter and reflects down towards the audience enhancing the upbeat environment.

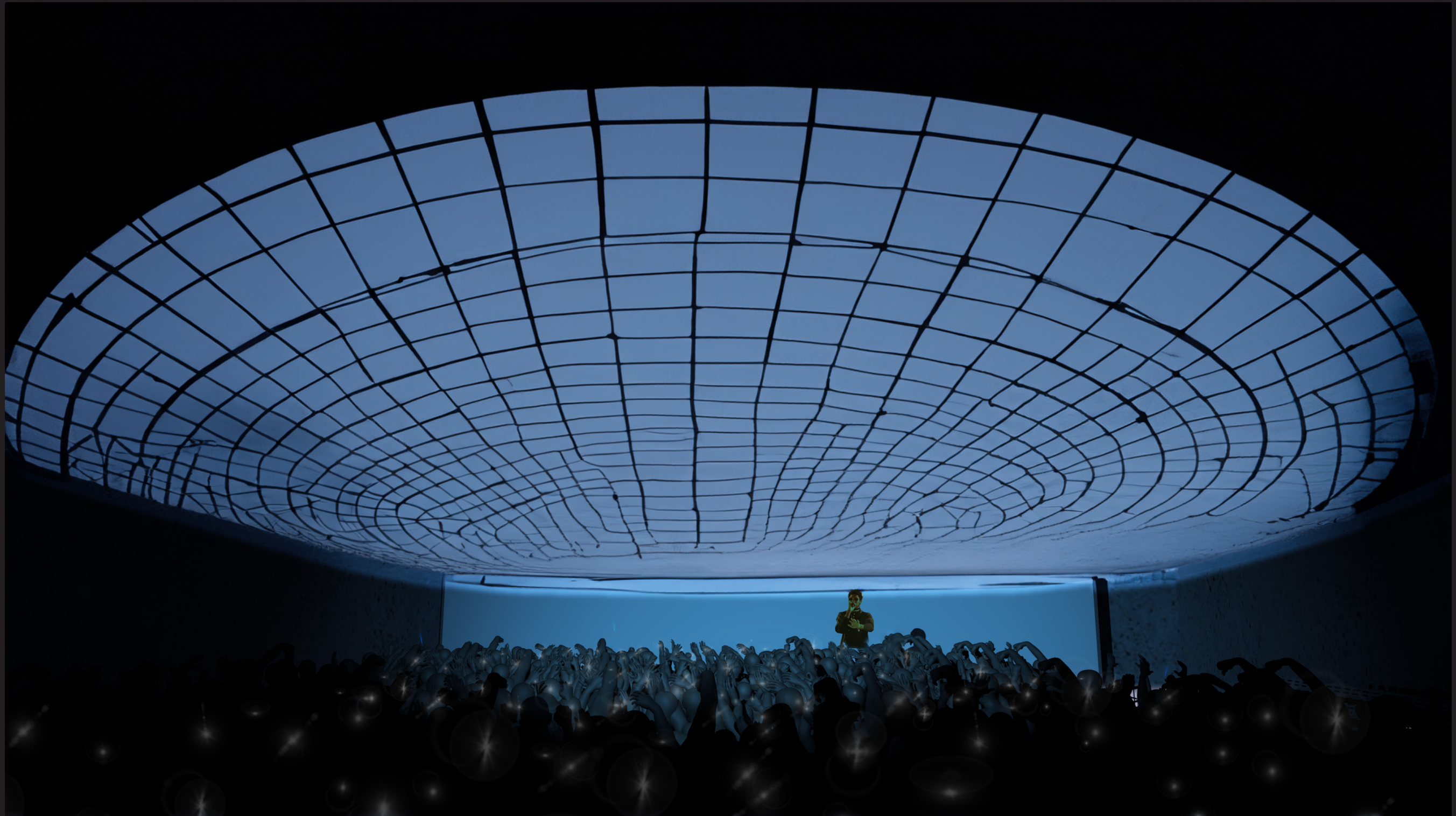


fig. 231: Render showing how the song "Sexy MF" will look as the song continues. The roof is now used for projections that will keep changing throughout the song mesmerizing the audience and really engulfing them in a fun space.

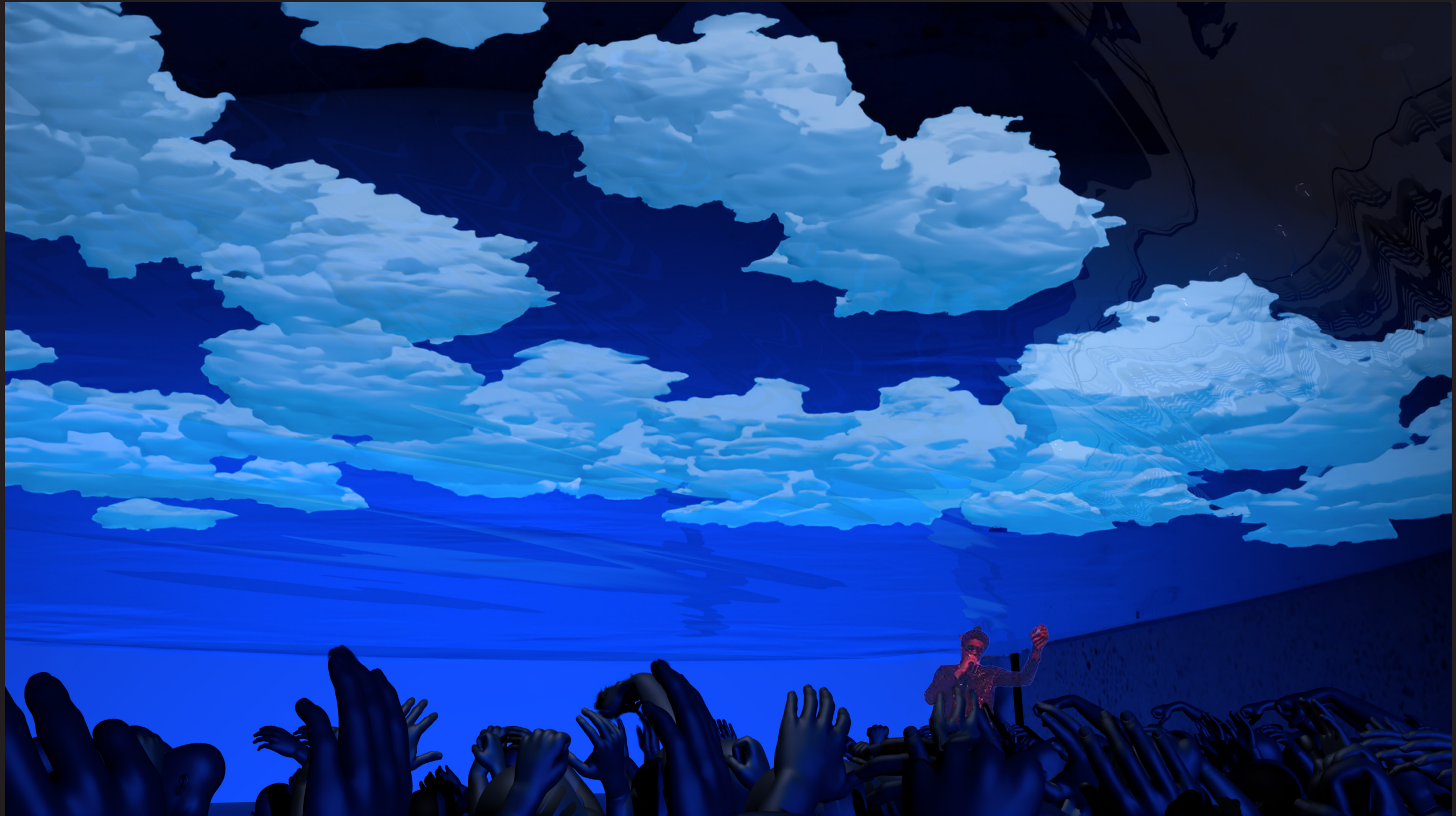


fig. 232: Render showing how the song "Sexy MF" will look as the song continues. The roof is now used for projections that will keep changing throughout the song mesmerizing the audience and really engulfing them in a fun space.



fig. 233: Render showing Labrinth's view from on stage during the song "Sexy MF".

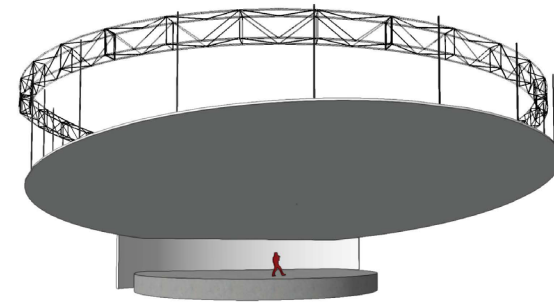


fig. 234: Tilted roof.

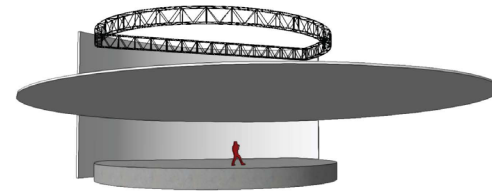


fig. 235: Smaller roof only over performer.

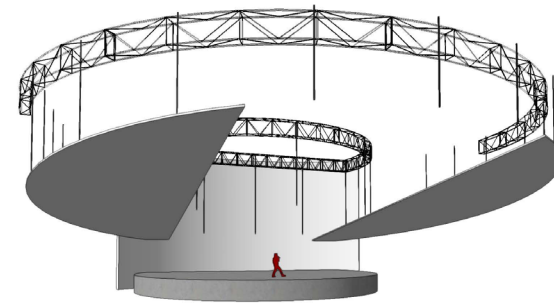


fig. 236: Roof cut in two.

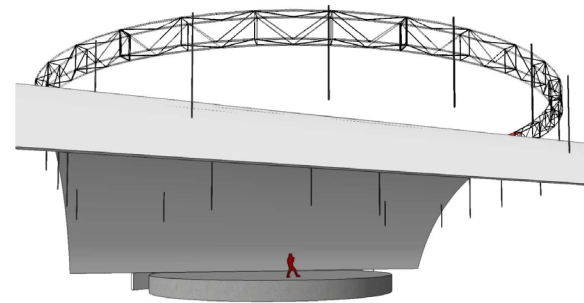


fig. 237: Roof curved over performer.

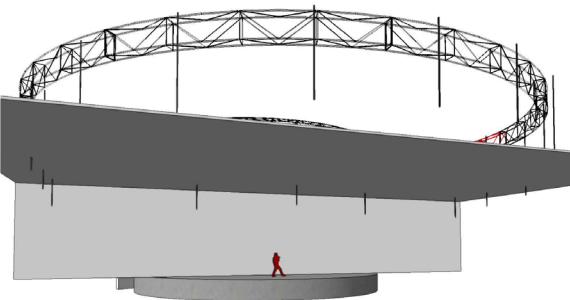


fig. 238: Roof creating backdrop and roof.

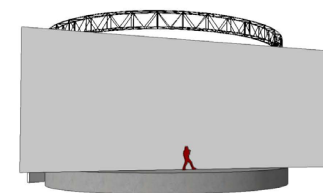


fig. 239: Roof as just a backdrop.

“SEXY MF” STAGE FLEXIBILITY

The stage design allows for flexibility, enabling it to adapt seamlessly to multiple songs and create diverse environments for each performance. The roof structure serves as the primary element that can be manipulated to shape the audience’s experience continuously.

One notable feature is the ability to shift the roof structure up and down, affording the opportunity to create various geometric configurations. This dynamic alteration of the roof’s position introduces a sense of novelty and visual intrigue, ensuring that each song is accompanied by a distinct environment. The ever-changing shapes maintain the audience’s engagement, as they witness the transformation of their surroundings in synchronization with Labrinth’s music.

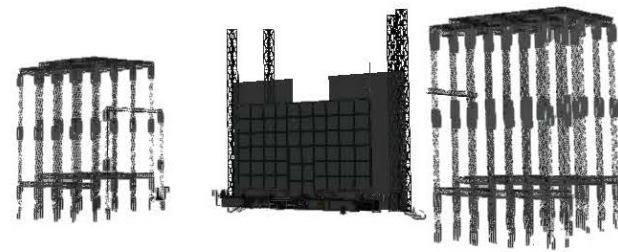
Furthermore, the roof has the capacity to shrink, narrowing its coverage to solely envelop Labrinth as he delivers his vocals. This focused spotlight on the artist intensifies the connection between Labrinth and the audience, emphasizing his presence and creating an intimate atmosphere.

The design also allows for the separation of the roof structure into two distinct entities. By pulling them apart, a dramatic division is created above the audience, augmenting the visual impact and generating a heightened sense of anticipation. This striking visual element adds an extra layer of grandeur and spectacle to the performance.

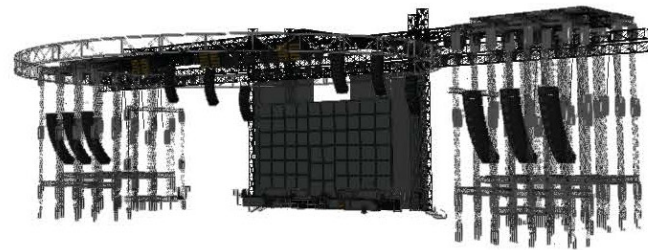
Additionally, the roof structure can be curved, forming a wave-like shape that undulates throughout the space or taking on a more rectangular form for a sleek and modern aesthetic. These variations in shape contribute to the visual diversity and artistic expression, reflecting the essence of each song in a unique and visually compelling manner.

Lastly, the roof structure can be pulled behind Labrinth, serving as a versatile backdrop that complements his performance. This configuration allows for the integration of dynamic projections, captivating lighting effects, or visually stunning imagery, enhancing the overall ambiance and immersing the audience in a multisensory experience.

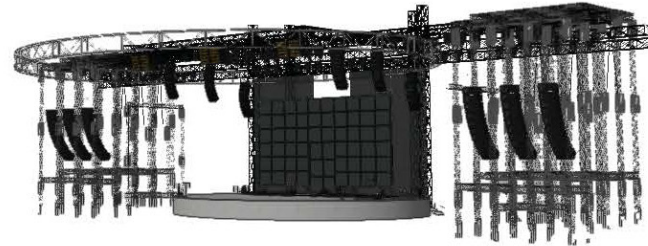
In summary, the ingenious design of this stage not only accommodates multiple songs but also provides an array of options for shaping the audience’s environment. The adaptable roof structure, with its ability to shift, shrink, separate, curve, and serve as a backdrop, enables Labrinth to deliver captivating performances that resonate with the essence of each song while captivating the audience’s senses.



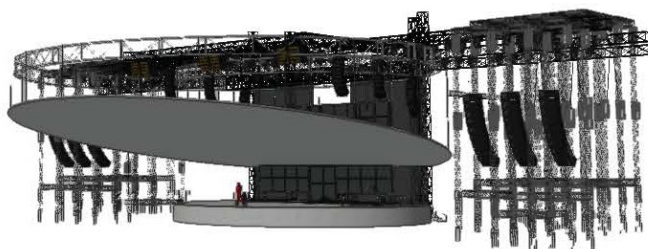
Step One: Base Scaffolding.



Step Two: Addition of Scaffolding, Trusses, Speakers, and Lights.



Step Three: Building the Stage.



Step Four: Hanging the Roof.

fig. 240: "Sexy MF" stage logistics, showing the steps for the set-up process.

"SEXY MF" STAGE LOGISTICS

The set-up and take down process for Labrinth's song "Sexy MF" at Echo Beach would be similarly to the last stage.

Early in the morning of the show day, the trucks carrying the necessary stage equipment, scaffolding, lighting fixtures, speakers, and other elements arrive at Echo Beach. A team of experienced technicians and stagehands are ready to execute the setup.

Expanding the Scaffolding: Echo Beach already has a base setup with a backdrop and side scaffolding, providing a foundation for the stage. To accommodate the new stage design for "Sexy MF," additional scaffolding is added to the existing setup. This expanded scaffolding will be responsible for holding the stage roof and other elements. Horizontal trusses are put in place to provide stability, and circular trusses are strategically positioned to support the stage roof, ensuring a safe and secure structure for the performance. As the scaffolding is expanded and reinforced, additional speakers and lights are integrated into the set-up.

Building the Stage: With the scaffolding in place, the next step is to construct the stage itself. This process involves assembling the stage platform and integrating it into the scaffolding.

Hanging the Roof: The final step involves hanging the roof onto the trusses and scaffolding.

CHAPTER SIX: CONCLUSION

In conclusion, this architecture thesis has explored the potential for the integration of architectural thinking into concert stage design, highlighting the potential for creating immersive and enhanced experiences for audiences.

Through the design of three distinct stages, each utilizing different stage shapes and architectural elements, the aim was to provoke specific emotions within the audience. By considering the spatial qualities, materiality, and overall aesthetic, the stages were crafted to enhance the overall concert experience and create memorable moments for the audience.

By exploring enhanced sets that transcend traditional lighting techniques, we can unlock a realm of possibilities for crafting more captivating and immersive experiences for the audience. By incorporating architecturally based elements into stage design, performances can transcend the boundaries of mere entertainment and become profound artistic journeys that resonate deeply with the spectators. When the set design is thoughtfully connected to the nature and content of the music and the performer's artistic vision, the result is a harmonious fusion that elevates the overall impact of the performance.

Architecturally based elements in stage design enable performers to immerse themselves fully in their artistry, as they become an integral part of the carefully crafted environment. This synergy between the performer and the set design creates a symbiotic relationship, allowing the music and the performer's presence to shape and interact with the physical space in a seamless dance of creativity. The set becomes more than just a backdrop; it becomes an active participant in the storytelling, amplifying the emotional depth and narrative of the performance.

While implementing such architecturally driven sets may entail higher costs compared to conventional low-cost mobile installations, the investment yields immense returns in terms of artistic expression and audience engagement. These elaborate stage setups offer unparalleled flexibility, empowering performers to tailor their shows to different songs and genres with relative ease. The ability to transform and adapt the stage design for various performances ensures that each show remains fresh, distinct, and unforgettable for the audience.

The transformative potential of these architecturally based sets extends far beyond mere aesthetics. The dynamic nature of these designs allows for seamless transitions between different moods, atmospheres, and themes, enhancing the storytelling power of the music and the performer's art. This adaptability contributes to a truly immersive experience that captures the hearts and minds of the audience, leaving a lasting impression that extends far beyond the final notes of the performance.

In conclusion, the integration of architecturally based elements in stage design opens up a world of creative opportunities that connect music, performer, and audience in profound ways. While the initial investment may be higher, the ability to create transformative and emotionally

resonant experiences justifies the costs. These sets possess the magic of becoming an extension of the performer's artistic expression, adding an extra layer of depth to the music, and enveloping the audience in an immersive journey they will carry with them long after the final curtain falls.

Moving forward, it is evident that the value of this research extends beyond the scope of this thesis. There are countless opportunities for further exploration and innovation in the field of concert stage design. By pushing the boundaries of creative stage shapes and incorporating advanced technologies such as lights, projections, and AI, new dimensions of immersive experiences can be unlocked.

Moreover, this research lays the foundation for future theses and studies to delve deeper into the integration of architecture and stage design. Building upon the findings and insights gained from this work, future researchers could explore areas such as acoustics, sustainable design practices, audience engagement, or the utilization of virtual reality and augmented reality technologies. By continuing this line of inquiry, the field can evolve, and architects can continue to play a vital role in shaping the future of concert stage design.

This thesis has successfully demonstrated the value of integrating architectural principles into concert stage design, showcasing the potential for creating immersive experiences that transcend traditional notions of performance spaces that are merely just smoke and lights. The journey does not end here, but rather opens up exciting possibilities for further exploration and innovation in the field, ultimately enriching the experiences of both performers and the audience.

BIBLIOGRAPHY

Alex White, "The Importance of Timing in Concert Production," Eventbrite UK, accessed April 16, 2023, <https://www.eventbrite.co.uk/blog/the-importance-of-timing-in-concert-production-ds00/>.

Arena, Scotiabank. "Calendar | Scotiabank Arena." Calendar | Scotiabank Arena, n.d. <https://www.scotiabankarena.com/events-1/calendar>.

YouTube. "Hockey to Concert Changeover," November 21, 2016. <https://www.youtube.com/watch?v=SSjbmj5e0w8>.

Bahamón, Alejandro., and Ana María Álvarez. 2010. *Light Color Sound : Sensory Effects in Contemporary Architecture*. New York: W.W. Norton.

Banks, Tom. The logistics of stadium set design. *Designweek*, 2009. <https://www.designweek.co.uk/issues/july-2009-online/the-logistics-of-stadium-set-design/>

Böhme, Gernot, and Jean-Paul Thibaud. 2017. *The Aesthetics of Atmospheres*. London ;: Routledge, Taylor & Francis Group.

Bonnemaison, Sarah., and Christine. Macy. 2008. *Festival Architecture*. London ;: Routledge.

Cadena, Richard. 2009. *Lighting and Sound for Concerts and Tours*. Burlington, MA: Focal Press.

Canadian Amphitheatre. Accessed July 15 2023. <http://www.canadianamphitheatre.net>.

Cook, Peter. 2016. *Architecture Workbook : Design through Motive*. Chichester, West Sussex, United Kingdom: Wiley.

Cook, Peter. 1996. *Primer*. London: Academy Editions.

Charlie Harding and Nate Sloan
Why Labrinth's 'Sexy MF' Is a Modern Classic* (*According to NPR's Sam Sanders)

Critical Theory and Interaction Design. United Kingdom: MIT Press, 2018.

Devlin, Es. Es Devlin, <https://esdevlin.com/>.

Devlin, Es. "Lorde Coachella | Es Devlin." Accessed July. 18 2023. <https://esdevlin.com/work/lorde-coachella>.

"Digital Dozen: Forest of Us," accessed June 3, 2023, <https://digitaldozen.io/projects/forest-of-us/>.

Edward Macan, *Rocking the Classics: English Progressive Rock and the Counterculture* (United Kingdom: Oxford University Press, 1997).

Fiss-Hobart, Jacob. 2013. *Concert Production Techniques*. New York: Routledge.

Galper, Hal. 2011. *The Touring Musician: A Small Business Approach to Booking Your Band on the Road*. New York: Backbeat Books.

Gibson, David. 2013. *The Art of Mixing: A Visual Guide to Recording, Engineering, and Production*. New York: Three Rivers Press.

Grütter, J. "Introduction—The Foundations of Perception." In *Basics of Perception in Architecture*, edited by Springer Vieweg, Wiesbaden, 2020. https://doi.org/10.1007/978-3-658-31156-8_1.

Harding, Charlie, Nate Sloan. "Why Labrinth's 'Sexy MF' Is a Modern Classic* (*According to NPR's Sam Sanders)" 2021. <https://www.vulture.com/article/labrinth-sexy-mf-modern-classic-sam-sanders.html>

House, Naomi., Coles, John. *The Fundamentals of Interior Architecture*. Taiwan: Bloomsbury Academic, 2007.

Holding, Eric. 2000. *Mark Fisher : Staged Architecture*. Chichester, West Sussex: Wiley-Academy.

"Jealous". Genius. Accessed June 20, 2023. <https://genius.com/Labrinth-jealous-lyrics>.

Kernodle, George Riley. *The theatre in history*. United States: University of Arkansas Press, 1989.

Kronenburg, Robert. 2010. "Live Architecture: The Design of Portable Buildings for Live Music Performance." *Arq* (London, England)14 (4): 304–16. <https://doi.org/10.1017/S1359135511000108>.

Kronenburg, Robert. 2012. *Live Architecture : Venues, Stages and Arenas for Popular Music*. 1st ed. Abingdon, Oxon ;: Routledge.

Labrinth. "Labrinth." Spotify. Accessed June 20, 2023. <https://open.spotify.com/artist/2feDdbD5araYcm6JhFHHw7>.

Licklider, Heath. *Architectural Scale*. United Kingdom: G. Braziller, 1966.

Partyka, Lukasz. "LIVE - Exploring motion in live music shows and architecture." (2017).

Penner, Devin. *Rethinking the Spectacle: Guy Debord, Radical Democracy, and the Digital Age*. Canada: UBC Press, 2019.

Phua, Jacky, Julia Dewi, and Andreas Wibisono. 2021. "Urban Contemplative Architecture Design through Light and Sound." *IOP Conference Series. Earth and Environmental Science* 764 (1): 12006–. <https://doi.org/10.1088/1755-1315/764/1/012006>

Rossi, Catharine. 2014. "Architecture Goes Disco." *AA Files*, no. 69: 138–45.

Sadler, Simon. 2005. *Archigram: Architecture Without Architecture*. Cambridge: MIT Press. Scotiabank Arena. Accessed July. 15 2023. <https://www.scotiabankarena.com>.

Stark, Scott Hunter. 2009. *Live Sound Reinforcement: Mix Pro Audio Series*. Boston, MA: Cengage Learning.

Stevens, Renée. *Designing Immersive 3D Experiences: A Designers Guide to Creating Realistic 3D Experiences for Extended Reality*. United States: New Riders, 2021.

Smith, Gareth Dylan, Michael Dines, and Tom Parkinson. 2017. *Punk Pedagogies : Music, Culture and Learning*. London: Routledge.<https://doi.org/10.4324/9781315276250>.

Standish, John. "Wearable Architecture and Live Music." (2016).

Superstudio & Radicals. 1982. *Tokyo: Japan Interior*.

"The Art of Bloom," accessed June 3, 2023, <https://theartofbloom.com>.

The Danforth Music Hall. Accessed July 15 2023. <https://thedanforth.com>.

"The Psychology Behind Scale in Architecture" accessed July 4 2023. <https://www.re-thinkingthefuture.com/architectural-community/a5412-the-psychology-behind-scale-in-architecture/#>

Trends, Experiences, and Perspectives in Immersive Multimedia and Augmented Reality. United States: IGI Global, 2018.

"Temporary Architecture & Architecture For the Temporary." *Future Landscapes*. 2012. Accessed June. 20 2023. URL: <https://futurelandscapes.ca/articles-of-interest/2012/11/11/aydmor0qf0keauiz1bsmul4yp1pft2#:~:text=%3E,the%20community%20they%20enter%2C%20e.g.>

McLaughlin, Katherine. "The Eras Tour: The Intricate World- Building Behind Taylor Swift's Most Ambitious Sets Ever". *Architectural Digest*. March 24, 2023. https://www.architecturaldigest.com/story/the-eras-tour-set-design?utm_source=ground.news&utm_medium=referral

McCay, Erica. *7 Principles for Creating Immersive Worlds*. Valtech, 2022. <https://www.valtech.com/en-ca/blog/7-principles-for-creating-immersive-worlds/>

Morrow, Guy. 2020. *Designing the Music Business: Design Culture, Music Video and Virtual Reality*. Cham: Springer International Publishing AG

Olsen, Eric P. *The Principles of Spectacle: A Geographic Model*. N.p.: University of Wisconsin--Madison, 2003.

Hitti, Natashah. "Es Devlin creates augmented-reality avatar of Bono for U2's tour stage

design." Dezeen. Last modified May 9, 2018. Accessed June 1, 2023. <https://www.dezeen.com/2018/05/09/es-devlin-augmented-reality-avatar-bono-u2-set-design/>.

"Van Gogh: The Immersive Experience." Accessed June 3, 2023. <https://www.vangoghexhibit.ca>.

YouTube. "The Absurd Logistics of Concert Tours," September 22, 2022. <https://www.youtube.com/watch?v=MY8AB1wY0tg>.

Xylobands. Accessed June 1, 2023. <https://xylobands.com>.