PROJECT PROPOSAL

EXECUTIVE SUMMARY

An engineer, a sculpter, and a chef walk into a bar.

An engineer, a sculpter, and a chef sounds like a strange combination yet reflects the reality of work in themed entertainment, where seemingly unrelated disciplines must intersect to fabricate imaginative experiences. Currently, the higher education landscape is devoid of opportunities for students to create and build 'at scale' immersive, multimedia driven transdisciplinary projects that push boundaries and help build both the hard and soft skills needed to fulfill careers in increasingly boundaryless industries. The themed entertainment industry embraces the spirit of collaboration and interdisciplinary project execution like no other. This is an industry that is growing and Ryerson University has an opportunity to become a leader in an area lacking representation in Canadian higher education.

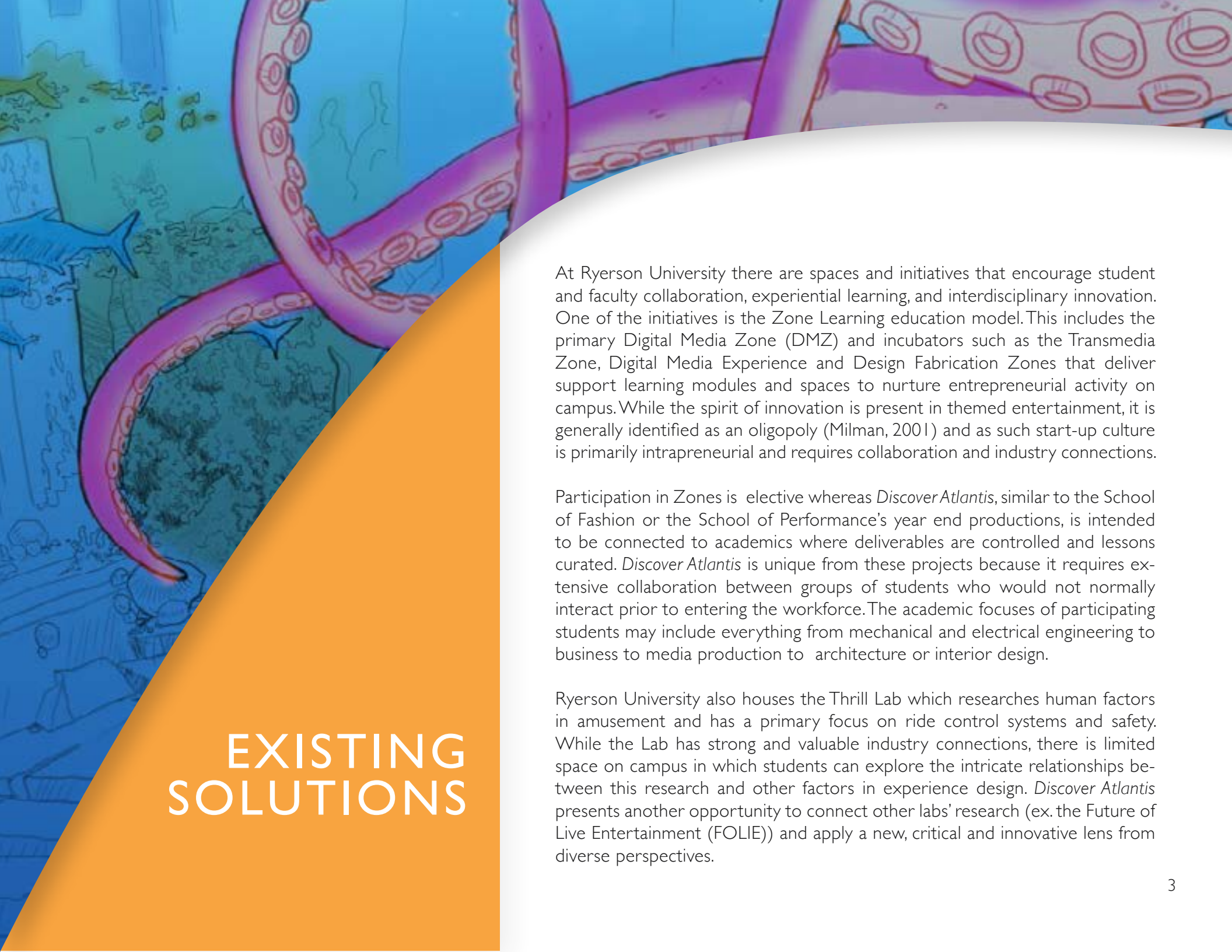
Themed entertainment industries include, but are not limited to: theme parks, amusement parks, museums, zoos, aquariums, arcades, retail environments, casinos, and restaurants. Themed entertainment industries are expected to reach revenues grossing in excess of $70 billion by 2025 (QY Research, 2019), and amusement parks and arcades alone support 784 companies in Canada, grossing $685 million in revenue nationally in 2019 (IBIS World, 2019).

Designed by students, *Discover Atlantis* is an indoor attraction that supports interdisciplinary education and innovation. The project will provide exceptional opportunities for Ryerson students across multiple faculties to build project portfolios, to network within a flourishing industry, and foster the development of interpersonal competencies critical for careers in themed entertainment. With its strategic focus on innovation, entrepreneurship and excellence, Ryerson University is well positioned to become the first Canadian university to develop themed entertainment programming.

The first of its kind in Canada, *Discover Atlantis* is an on-campus, indoor attraction that includes a queue, digital ride, and a post-ride experience taking explorers through an aquatic adventure. The initial development of this project is in itself a learning experience for students, and certain aspects of the projects are intentionally flippable for recurring turnover of cohorts. Redesignable components include the narrative and interactive technologies throughout.

There are permanent requirements for this project as well. *Discover Atlantis* requires a physical space with the estimated dimensions of 100-120 sqm and approximately $12,000 to construct four motion platforms that are integral to the experience. Additional expenses are anticipated but cannot be estimated until further development of the project.

CONTENTS



EXISTING SOLUTIONS

At Ryerson University there are spaces and initiatives that encourage student and faculty collaboration, experiential learning, and interdisciplinary innovation. One of the initiatives is the Zone Learning education model. This includes the primary Digital Media Zone (DMZ) and incubators such as the Transmedia Zone, Digital Media Experience and Design Fabrication Zones that deliver support learning modules and spaces to nurture entrepreneurial activity on campus. While the spirit of innovation is present in themed entertainment, it is generally identified as an oligopoly (Milman, 2001) and as such start-up culture is primarily intrapreneurial and requires collaboration and industry connections.

Participation in Zones is elective whereas *Discover Atlantis*, similar to the School of Fashion or the School of Performance's year end productions, is intended to be connected to academics where deliverables are controlled and lessons curated. *Discover Atlantis* is unique from these projects because it requires extensive collaboration between groups of students who would not normally interact prior to entering the workforce. The academic focuses of participating students may include everything from mechanical and electrical engineering to business to media production to architecture or interior design.

Ryerson University also houses the Thrill Lab which researches human factors in amusement and has a primary focus on ride control systems and safety. While the Lab has strong and valuable industry connections, there is limited space on campus in which students can explore the intricate relationships between this research and other factors in experience design. *Discover Atlantis* presents another opportunity to connect other labs' research (ex. the Future of Live Entertainment (FOLIE)) and apply a new, critical and innovative lens from diverse perspectives.

EXISTING SOLUTIONS CONTINUED...

There are limited cases of existing solutions that allow students and universities to engage with this industry academically. Formal degrees in this field of study are offered by a few American universities. Carnegie Mellon University (CMU) offers a Master of Entertainment Technology in which students explore themed entertainment projects. The University of Central Florida (UCF) offers a design oriented Master of Fine Arts in Theatre, Themed Experience and the Savannah College of Art and Design (SCAD) offers a Master of Fine Arts in Themed Entertainment Design. In these universities, and in many others without degree programs in this field, there are student organized clubs that facilitate learning in themed entertainment (including the Ryerson Thrill Club). Students in these clubs participate in competitions and present at showcases.

In 2019, CMU students built a dark ride, an indoor, narrative driven attraction on their campus utilizing, for the most part, readily available materials. The University of Texas at Austin is another example. In 2018, with faculty guidance, students built life-sized dinosaur costumes for a theatre production and the costumes became a highly collaborative endeavor and groundbreaking project.

Middlesex University's MDX LOCO is another example of initiatives that currently exist. Under faculty supervision and with industry contribution, they created an open source motion platform for virtual reality roller coaster simulation. All plans and information to recreate the platform are available online and remains open for contributions and community iteration.

DISCOVER ATLANTIS

PROJECT DETAILS

Discover Atlantis is a single-seat thrill ride that employs an interactive queue and post-ride to create an immersive story-driven experience. Visitors take on the role of deep sea explorers assigned the initiation task of exploring the undersea ruins of Atlantis.

Through engagement with digitally connected objects in a holding room, visitors can uncover the secrets of the enigmatic Captain Nemo, the mysterious origins of Atlantis, and the (potentially clandestine) Nemo Foundation. The ride then takes visitors on a tour of Atlantis, complete with an encounter with a giant squid and the discovery of the original Nautilus itself!

MEET THE CREW

VERNE

Verne is a remote pilot working for the Nemo Foundation. He initially joined the Foundation because of the access to "cool toys" they offered. His scepticism keeps him from believing that the altruistic intentions his employers present to the public. Having worked at the Foundation and specifically on the Atlantis project since almost the start, Verne knows the pathways and channel of the ruins better than anyone.

JOOLS

Jools works for the Nemo Foundation as a research assistant. The core of her duties are to provide Dr. Namira Ayad the support she needs in analysing artifacts brought up from the ruins. Her role has Jools stationed in the sealab for months at a time, far from her home and family in New Zealand. Jools serves as a guide for new arrivals at the underwater facility, shepherding recruits into their roles.

VERNE & JOOLS

Both Jools and Verne have formed a bond of friendship in their time together at Nemo. Verne's scepticism coupled with Jools' curiosity have led them to believe that their employers are up to no good. However they realize that they are trapped far below the surface of the ocean and if the Nemo Foundation truly is nefarious, there is no telling what could happen to them if their wavering allegiance were discovered. The pair have decided that they need to gather allies. With their access to new recruits, Jools and Verne set into motion events that would present clues to the new arrivals, hopefully easy enough for them to follow while still remaining undetected by Nemo Foundation loyalists.

This is why recruits wait in Captain Nemo's old library, and why they are sent out into the ruins as an initiation. They are two parts of a plan concocted by the conspirators to pull back the curtain and quietly build a mutiny.

ANABETH OLIVERA

The enigmatic founder and CEO of the Nemo Foundation. Anabeth comes from a long line of wealthy industrialists. Her grandfather Anatoli transformed Olivera Heavy Industries (OHI) into a global powerhouse during World War 2, and her mother—as first female CEO—shifted focus to innovative technologies and sciences. Anabeth is well-educated and recognized across the globe as a leader in scientific exploration. Ten years ago she publicly acquired the remaining estate of the late Captain Nemo for her mother's company—exposing the Captain's anti-societal agenda and revealing that he always intended to wage war on a world he felt was irredeemable. Anabeth then created the Foundation under the auspices of returning to Nemo's research for the betterment of humankind.

CAPTAIN NEMO

The secret expedition to Atlantis was a project that Captain Nemo undertook for truly selfless reasons. Atlantean technology buried there was far more advanced than anything modern society had at the time. The secrets of how society grew out of the cradle of civilization, the marvels of the pyramids, genetics, advanced engineering, and alternative technologies were all locked within the undersea ruins. The truth about Captain Nemo is that he was betrayed and misrepresented by the Olivera family. OHI was one of the main suppliers of Nemo's expedition, and Anatoli Olivera sent his daughter to personally oversee the project. When Anabeth's mother discovered that Nemo intended to give the technology away freely, she betrayed him and set into motion a plan for her daughter to continue her work via the Nemo Foundation.

THE ADVENTURE BEGINS...

Having discovered the ruins of the fabled Atlantis, the Nemo Foundation—an altruistic multinational corporation—has set up an elaborate underwater facility on the edge of the sunken city. You are one of their newest recruits, having just arrived at their shoreline facility.

PRE-SHOW ELEVATOR

In transit to Atlantis the recruits meet Verne, a remote pilot who guides transport and cargo between the surface and the undersea base. Their journey begins in a rocky vertical shaft, but quickly opens up to the seabed. At first the recruits are surrounded by coral reefs and relatively shallow waters, but the high-speed sub soon heads into deeper, darker waters.

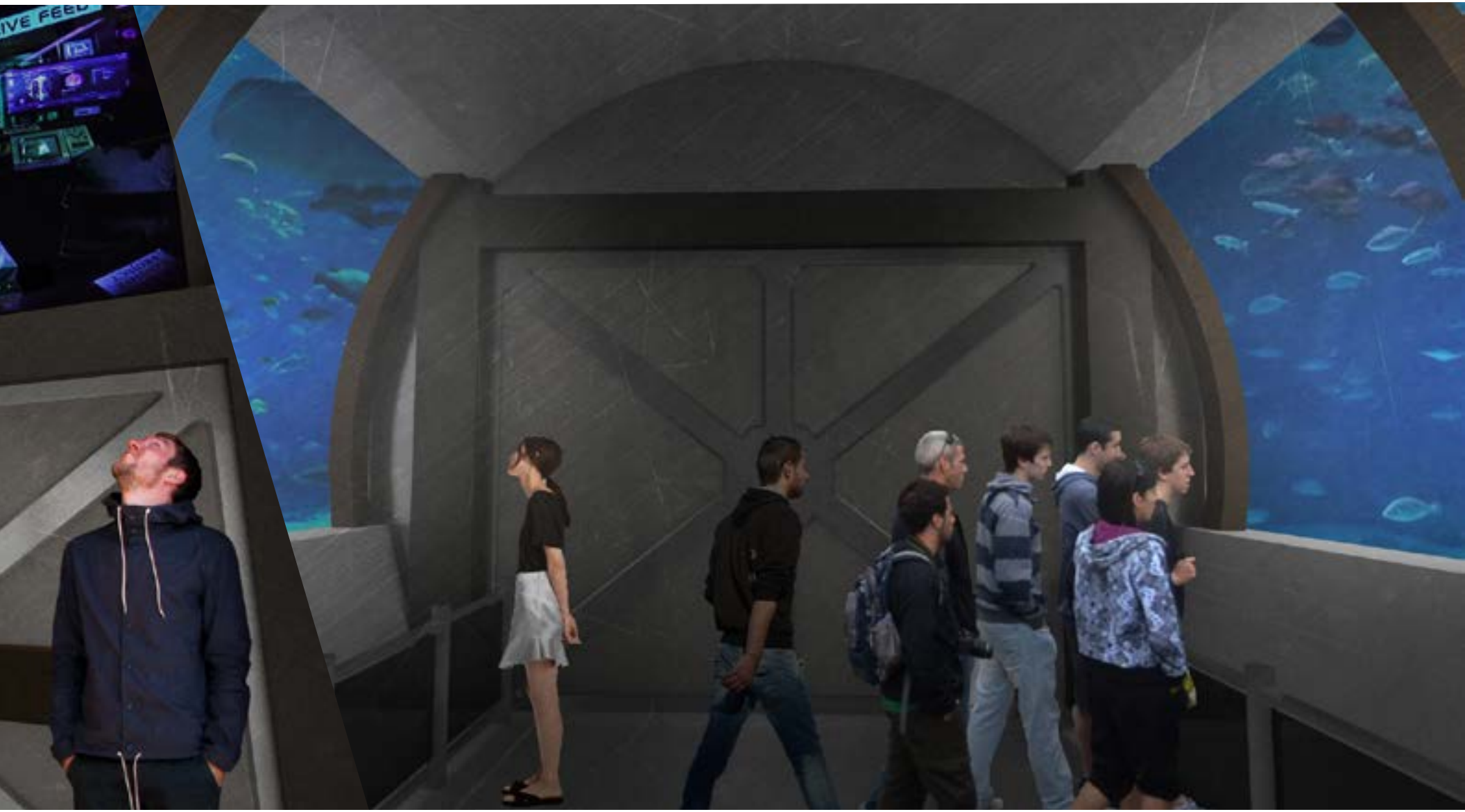
PRE-SHOW ELEVATOR

Verne queues up the mandatory "corporate welcome" video featuring Anabeth Olivera, world-famous CEO of the Nemo Foundation. Her message of progress and hope echoes the company's global brand, but Verne's reactions and quiet mutterings indicate that all may not be what it seems.

Before the recruits have a chance to question the pilot further, the undersea lab comes into view—it is an impressively massive installation. Control takes over from Verne and guides the submersible transport to a docking bay.

INTERACTIVE QUEUE

Here the recruits disembark and enter a high-tech laboratory. The clean, futuristic design is juxtapozed by the ornate and traditional library that comprises the far end of the lab. The new arrivals are greeted by Jools, a Foundation researcher and their acting guide. Jools provides a bit of safety instructions, history of the lab itself, and in particular Nemo's library—transported and recreated only recently from the captain's own estate.



INTERACTIVE QUEUE CONTINUED...

The recruits are divided into sorted groups by their guide. Jools gives each of them an Atlantean coin, a token to identify their group and as a keepsake—at least for this part of their journey. Jools invites the recruits to explore the many Atlantean artefacts they have collected and are currently analyzing. She also mentions the historical and political significance of Captain Nemo's library and wonders what knowledge could be uncovered there.The recruits wander the lab, interacting with numerous items that seem at times to react to their coin. Once Jools calls their group to the Pod Bay, recruits enter a narrow hallway lined with Pod access hatches.

INTERACTIVE QUEUE CONTINUED...

She helps each recruit into their pod… and mentions that they can hold onto their coins for now. "You never know what they might illuminate under a different light."

Perceptive recruits might notice that the back of the coin presents Nemo's sigil and a message from the mutineers when held under the blacklight of the pod.

SINGLE SEATER EXPERIENCE

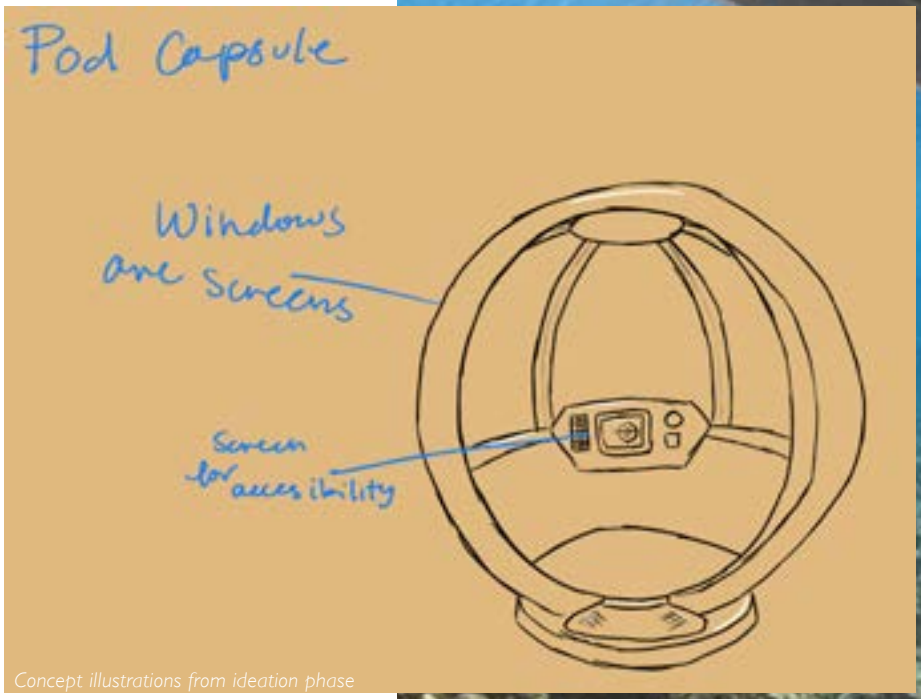
As the recruit gets seated and comfortable, they can see the exterior of the lab through the dome-shaped canopy of the pod. A digital window opens on the canopy displaying Verne's webcam view. He greets the recruit and tells them to prepare for an astonishing ride. He is a bit boastful of his abilities to remote pilot the pods and his knowledge of Atlantis' layout and architecture.

LEAVING THE UNDERSEA LAB

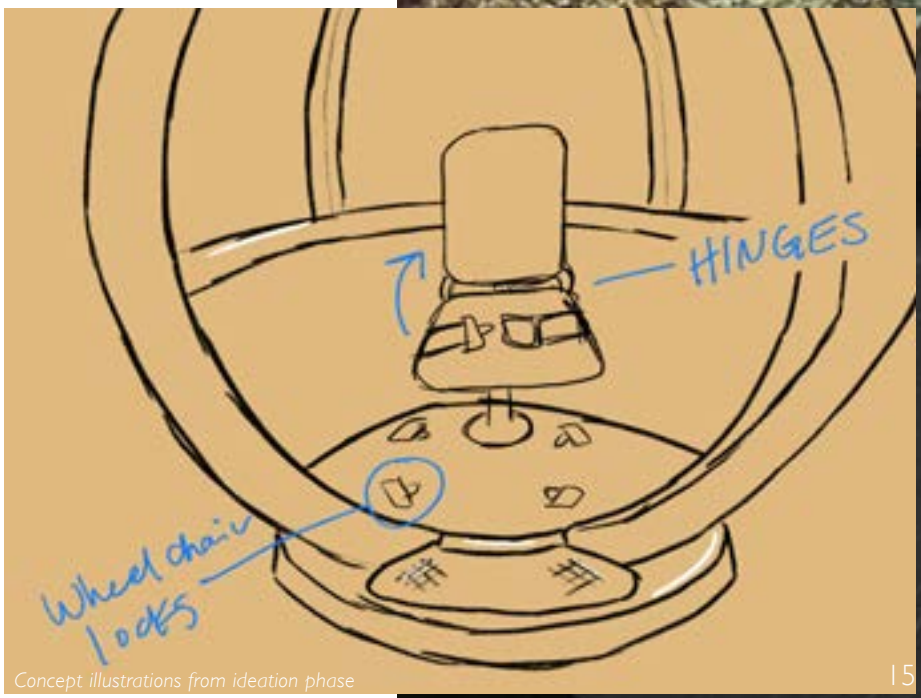
The dashboard lights give readouts on the engine and environmental readings from the exterior of the pod. After a brief systems check, the hatch behind the recruit swings shut and Verne dislodges the pod from the lab. As they travel along the sandy seabed, Verne points out some fish and undersea flora.

THE CORAL FOREST

Before long, the pod enters an area of dense coral growth, teeming with fish and aquatic life of all sorts. Things look amazing under the lights of the pod, but when Verne turns the external lights off, everything begins to glow with bioluminescence. Verne mentions that the chemicals the plants and creatures use to glow is also at the heart of some of the most advanced Atlantean technology. At this point Control chimes in and prompts Verne to keep to the script.



Concept illustrations from ideation phase



Concept illustrations from ideation phase


You never know what they might
illuminate under a different light

THE STORY

CONTINUED...

THE CITY GATES

Exiting the forest, the pod reaches a massive set of pillars that form the gates at the outer perimeters of the city. Verne decelerates the pod so that the recruit can get a good look as they pass underneath the massive and ornate structure. Many statues adorn the gates and everything is covered in aquatic growth.

Verne pilots the pod through the ruined streets of the city, surrounded by schools of fish, plants, etc. There's a flock of sea turtles that swim by, a persistent crab that latches onto the pod's robotic arm while Verne tries to pick up yet another coin and a few other moments during exploration.

All the while, Verne discusses the wonders of Atlantis with the recruit. But whenever his words veer too close to Captain Nemo's true nature and the real reason for his expedition, Control chimes in to keep him from saying too much.

THE COLOSSEUM

At the heart of the city, the recruit and Verne find the grand colosseum. Verne patches in Jools who talks about the ancient Roman and Greek gladiator games and what place Atlantis must have had in an ancient civilization. As the pod explores the stands, grounds, and partially exposed underbelly of the massive structure, they narrowly avoid a cave-in! In the disturbed sands, Verne finds a new artefact.

Using the robot arm he brings it in for closer inspection. Verne and Jools give each other knowing glances. It is part of a map, something they were looking for since … just then Control chimes in—Ms. Olivera herself has a message for the team.

THE COLOSSEUM CONTINUED...

A stern middle-aged woman appears via cam window and demands that they return to the lab immediately with their discovery. Jools tries to play off the discovery as meaningless while Anabeth orders Verne to maneuver the robot arm so that she can get a better look. Verne mentions that the cave-in has disrupted systems somewhat and that he needs time to re-calibrate the arm.

Jools, speaking to Ms. Olivera says she will come up with her research notes on the Colosseum, and just before she signs off flashes a symbol to Verne and the recruit—Nemo's sigil!

Anabeth warns Verne to get that arm working ASAP and signs off. Verne immediately puts the pod into high gear, swimming over the edge of the Colosseum and above the rest of the ruins of Atlantis.

THE DROP

Verne uses text messaging to say there is not much time to explain, and that others are listening. He continues to speak as if he is getting the recruit to help fix the arm while racing towards the Drop—a massive chasm that divides the ruined city.

As the pod descends into the blackness of the chasm, the audio and visual feeds begin to cut out. The last message from Verne is "FND THE CABL!" The recruit manages to find a long comms cable running from above and using the robot arm plugs it into the pod. Verne's video feed reappears and he breathes a sigh of relief. Not long after Jools appears frantically asking if they managed to avoid detection. Verne assures her that thanks to the recruit's efforts they are safely in the "deadzone" of the chasm.

Jools says that the piece of the map was the last part they needed to pinpoint where Hades' Maw is. The Maw was something Nemo mentioned in his journals as a place to explore. It is his last entry—he never returned from the Maw, so it must be where the Nautilus is!

CAPTURED BY A GIANT SQUID

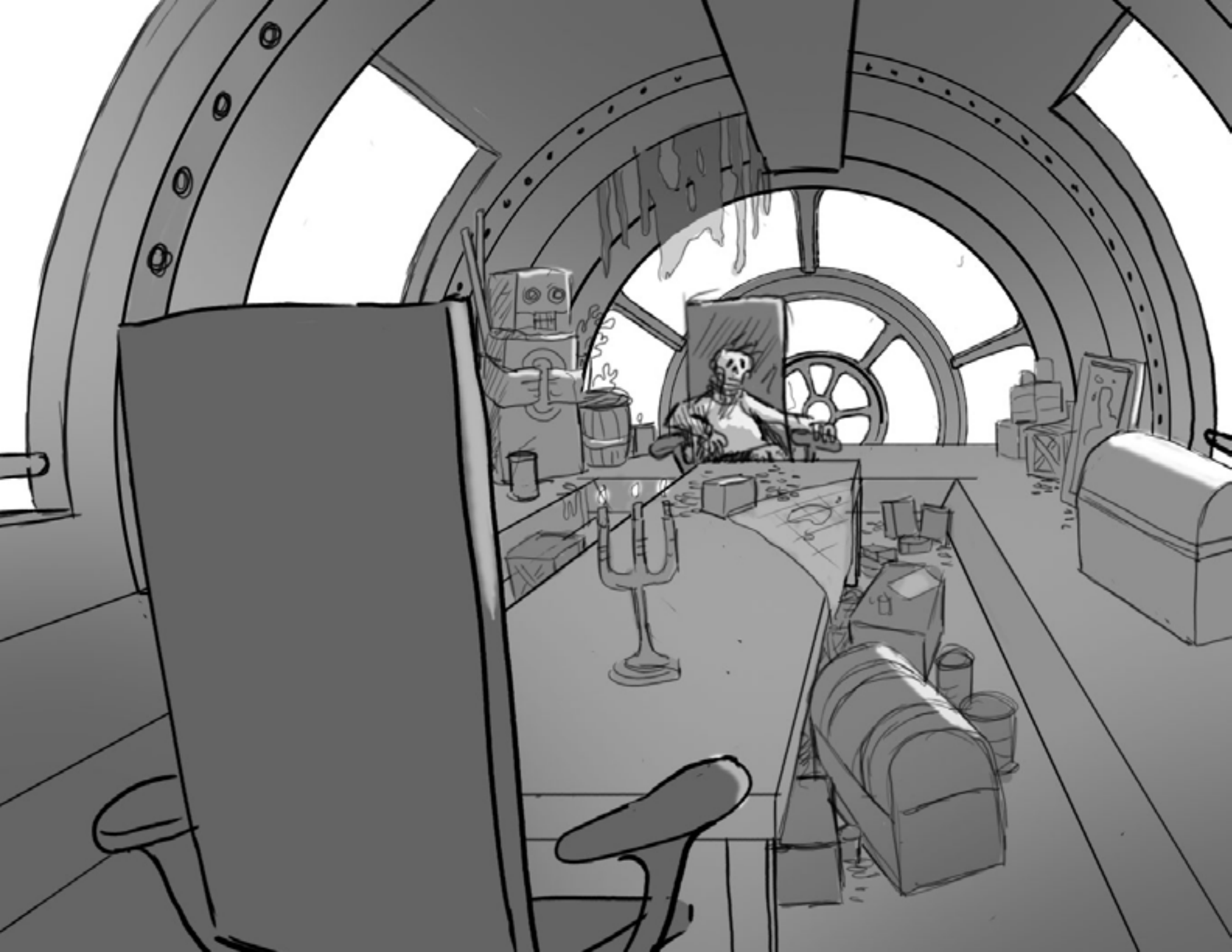
While Jools and Verne are debating the find of the map and the prospect of having the recruit head to Hades' Maw. Something stirs in the darkness below the pod. Suddenly a massive squid appears and latches onto the pod with a crash! At first all the recruit can see is tentacles and suckers. The video feed from Verne and Jools is cut off as the squid swims away with its new prize and the cable is cut.

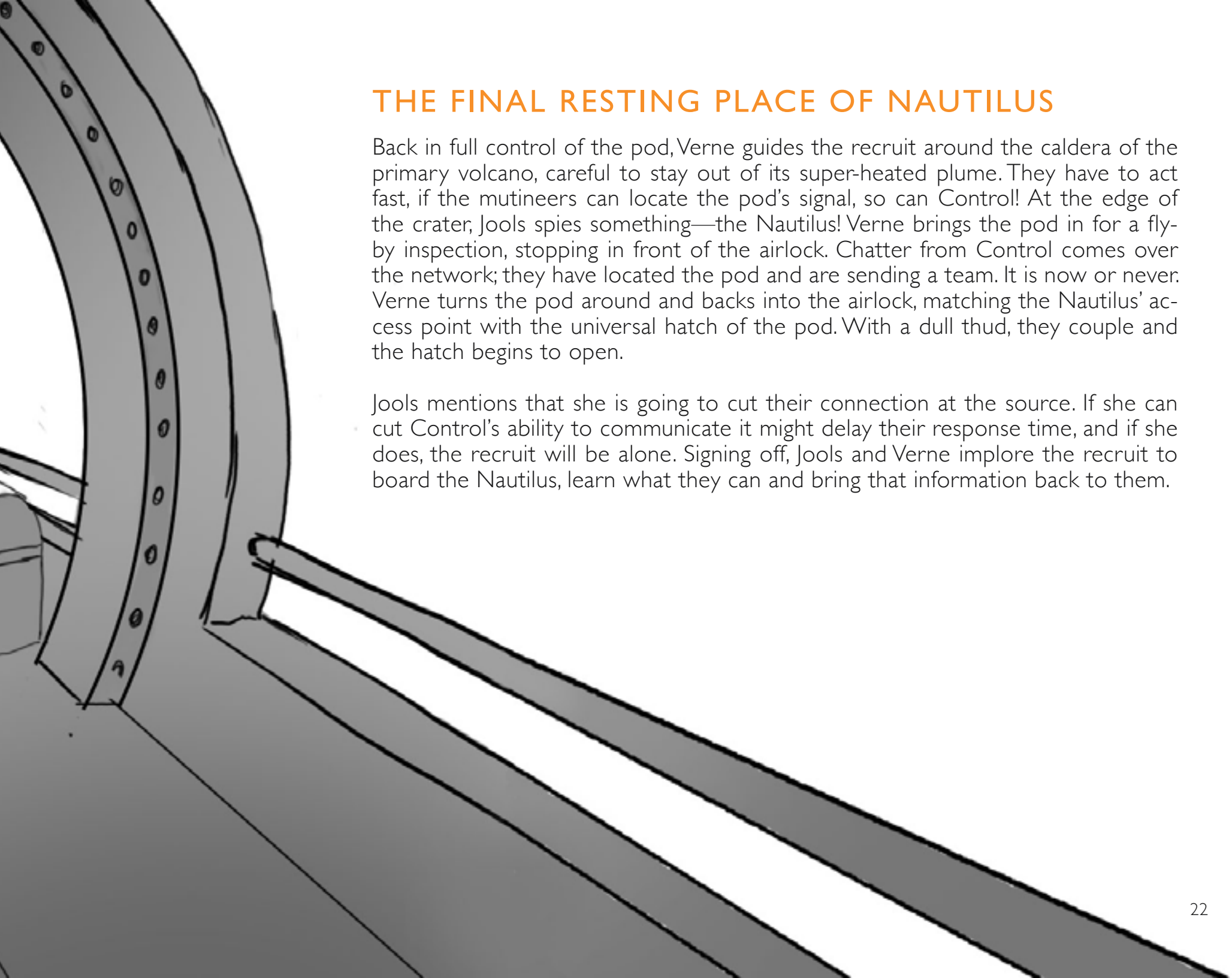
The pod is moving faster than ever in the squid's grasp. Alarms ring out and lights flash. Distortion appears on screens and cracks appear in the glass. This looks like it might be it! The squid takes the pod deeper and deeper when suddenly a massive eel-like creature—dwarfing the squid—attacks and takes a bite out of the pod's tentacled captor. The squid loosens its grip to fight this new assailant and the damaged pod drops into the black abyss.

UNDERSEA VOLCANO

As the pod descends the interior lights turn red, the screens display warning, and sirens continue to wail. The hull has been compromised and water is spraying in. The leaks are not dire yet, but with the mounting external water pressure, the pod will soon hit depths that will crack it open dooming the recruit. One by one the systems fail until only the red glow of the cockpit's emergency lighting remains.

In the inky black outside the canopy, a strange vision appears in the distance—a glowing red mouth, eyes, and nostrils—as if some fiery demon was approaching to swallow them. As the pod gets closer, it becomes apparent that this is a formation of undersea volcanoes. This must be Hades' Maw! The descent should be crushing the pod by now, but by some mysterious force, the pressure outside seems to have stabilized. Furthermore, the electronic systems and communications seem to be working again. Verne and Jools pop back online and can hardly believe what's happening.





THE FINAL RESTING PLACE OF NAUTILUS

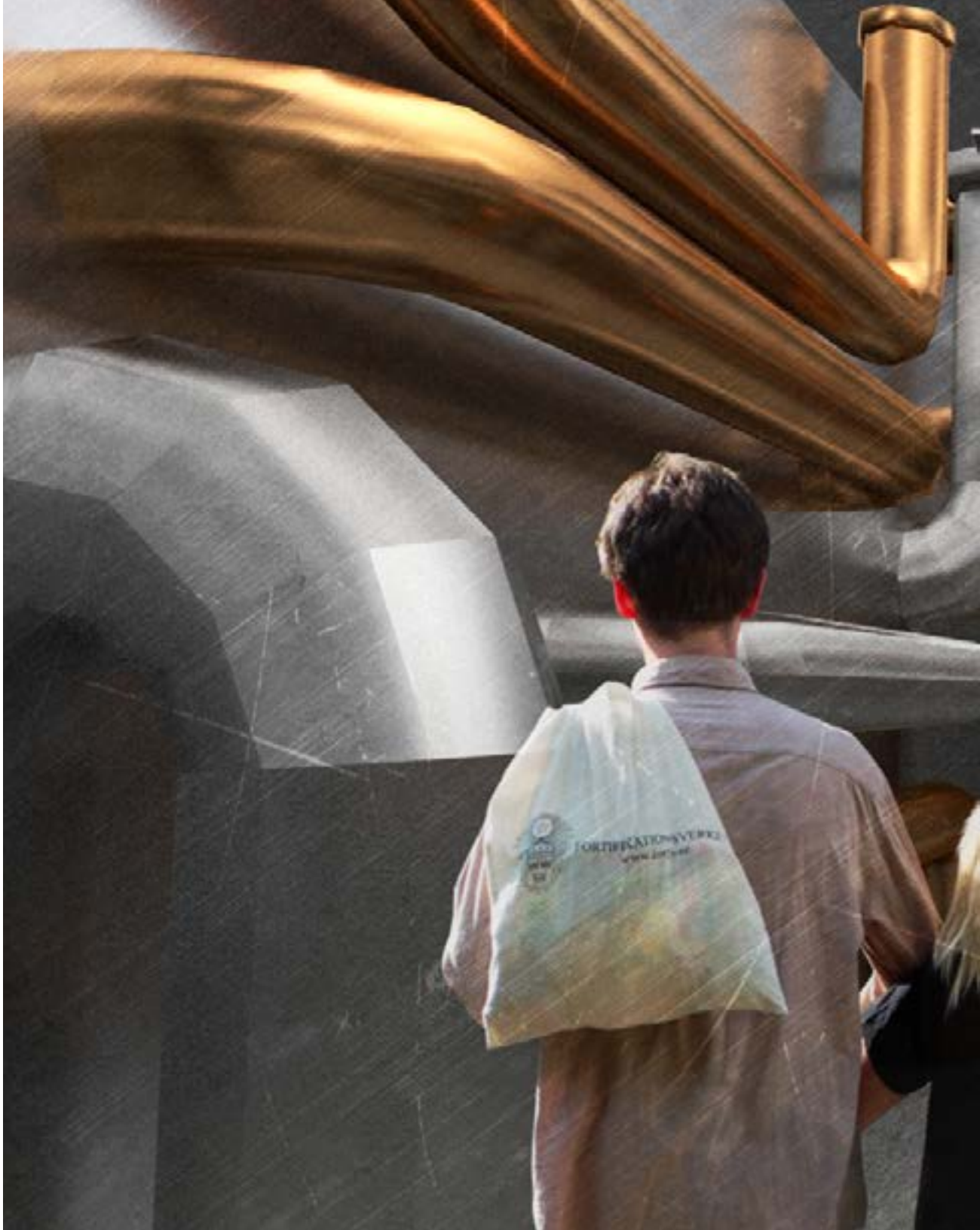
Back in full control of the pod, Verne guides the recruit around the caldera of the primary volcano, careful to stay out of its super-heated plume. They have to act fast, if the mutineers can locate the pod's signal, so can Control! At the edge of the crater, Jools spies something—the Nautilus! Verne brings the pod in for a fly-by inspection, stopping in front of the airlock. Chatter from Control comes over the network; they have located the pod and are sending a team. It is now or never. Verne turns the pod around and backs into the airlock, matching the Nautilus' access point with the universal hatch of the pod. With a dull thud, they couple and the hatch begins to open.

Jools mentions that she is going to cut their connection at the source. If she can cut Control's ability to communicate it might delay their response time, and if she does, the recruit will be alone. Signing off, Jools and Verne implore the recruit to board the Nautilus, learn what they can and bring that information back to them.

DYNAMIC HALLWAY

When the hatch opens, the recruit is in a hallway similar to the layout of the undersea lab, but this one has been neglected underwater for a long time. It is darker, covered in seaweed growth, and there is water leaking all over.

Moving further into the Nautilus portholes show some of the scene outside—dimly lit from the nearby red glow of the volcano. The hall becomes increasingly covered in aquatic growth; barnacles and shallow pools of water, seaweed, coral, etc. Larger windows are covered in mold and are cracked with age. Through the cloudy glass, the recruit can see the approaching lights of the Nemo Foundation team.



POST-RIDE EXPERIENCE

Eventually the recruit makes it to a set of doors that open by themselves. They reveal a large room at the stern of the submersible—Nemo's command room!

Surrounded by large windows, the center of the room features a large table covered in treasure and artefacts. In fact the whole room is littered with curiosities from Atlantis. The path to walk between them is narrow and leads to the far end of the table where sitting on an impressive chair are the preserved remains of Captain Nemo himself!

The recruit explores the room as best as they can given the time constraint. They find that their Atlantean coin reacts to objects here as well and the true nature of Nemo's expedition is revealed. Lastly, the recruit discovers that the ruins uncovered so far are just the beginning of an entire Atlantean empire that has fallen beneath the waves. The recruit learns that the founders of the fabled city might not all have perished in the cataclysm. Nemo kept his journal going in the ill-fated Nautilus and gives an account of discovering living citizens of Atlantis somewhere beyond Hades' Maw!

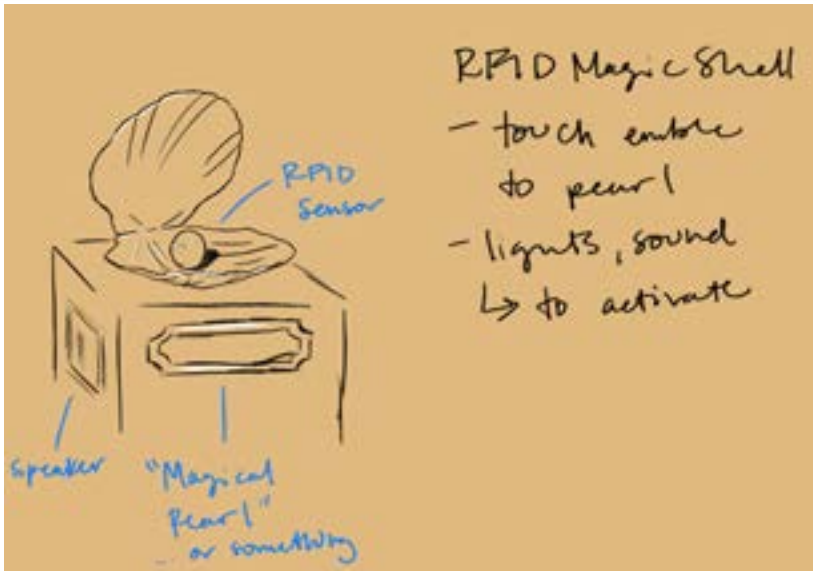
As the recruit makes it to the front of the chamber, they are apprehended by Foundation security, to be brought back for questioning. But one guard flashes Nemo's sigil and nods at the recruit. The mutineer movement is alive and intact—and will take down the Nemo Foundation from within!

EXAMPLES OF INTERACTIVE TE

RFID TOKEN

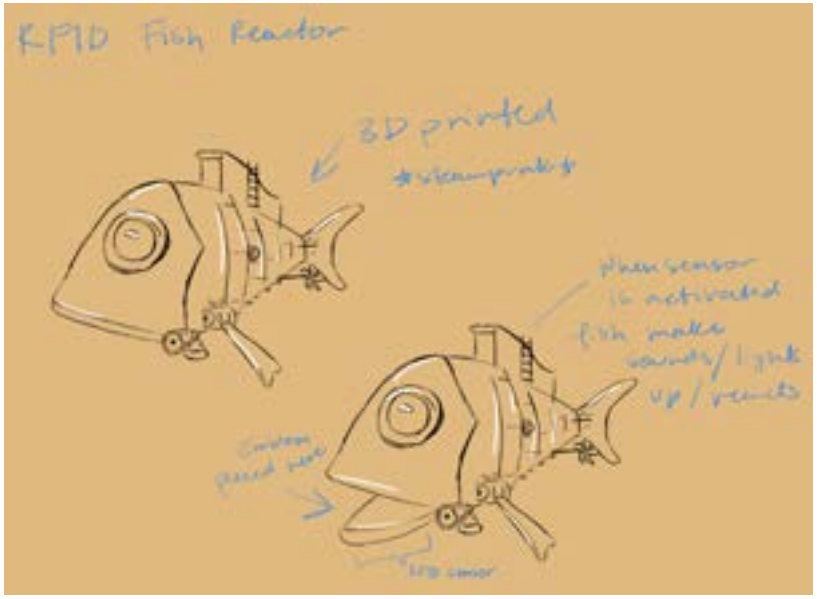
The RFID tokens will be used to sort visitors into different groups and can be used in varying spaces in the experience. They can also connect to environmental artefacts and engage with visitors to add layers of interactivity.

ECHNOLOGY



RFID ENABLED PEARL SHELL

This device can be stimulated with an RFID token given to visitors when the experience starts. The pearl will light up in different colour patterns that visitors have to memorize. Visitors who recite the correct order will be rewarded with a clue or story about the journey they are about to embark on.

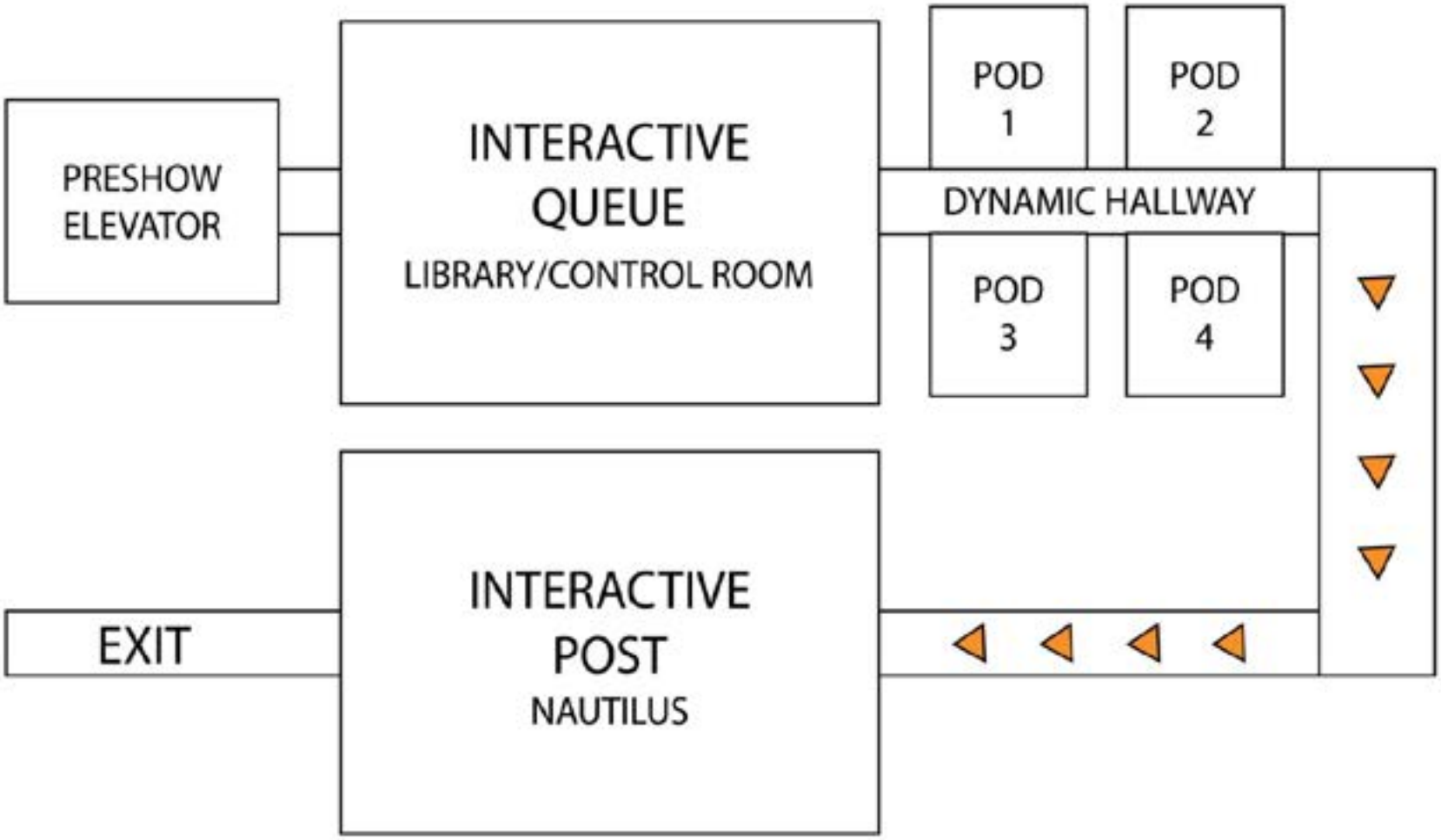


RFID ENABLED TALKING FISH

When queued with the RFID token the fish will "speak" clues and stories to visitors. These stories will help them understand more about the room they are standing in and the adventure ahead.

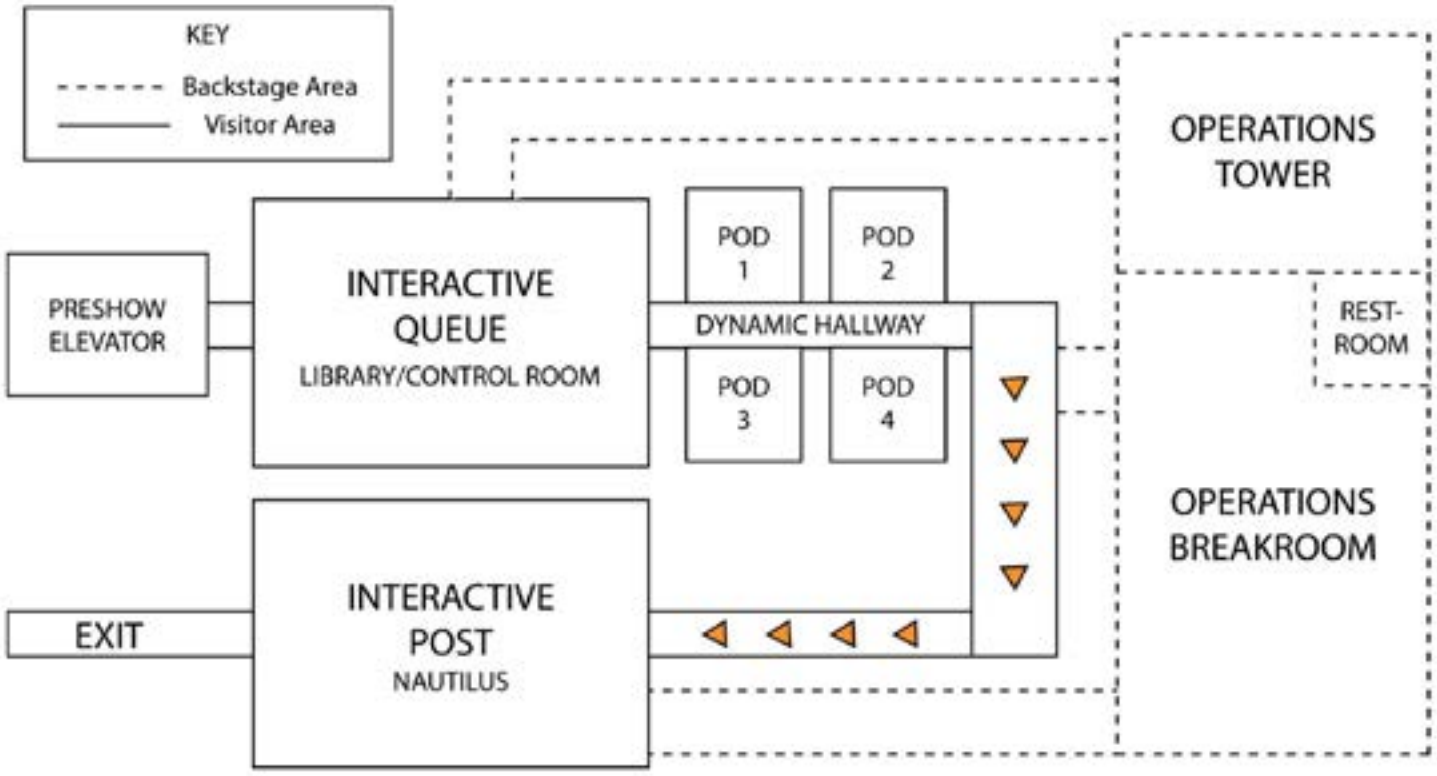
OVERVIEW OF PROPOSED LAYOUT

The diagram demonstrates how these experiences and connected narratives interact in a physical space. The total estimate for this space is roughly 100-120sqm.



INDUSTRIAL PERSPECTIVE OF THE LAYOUT

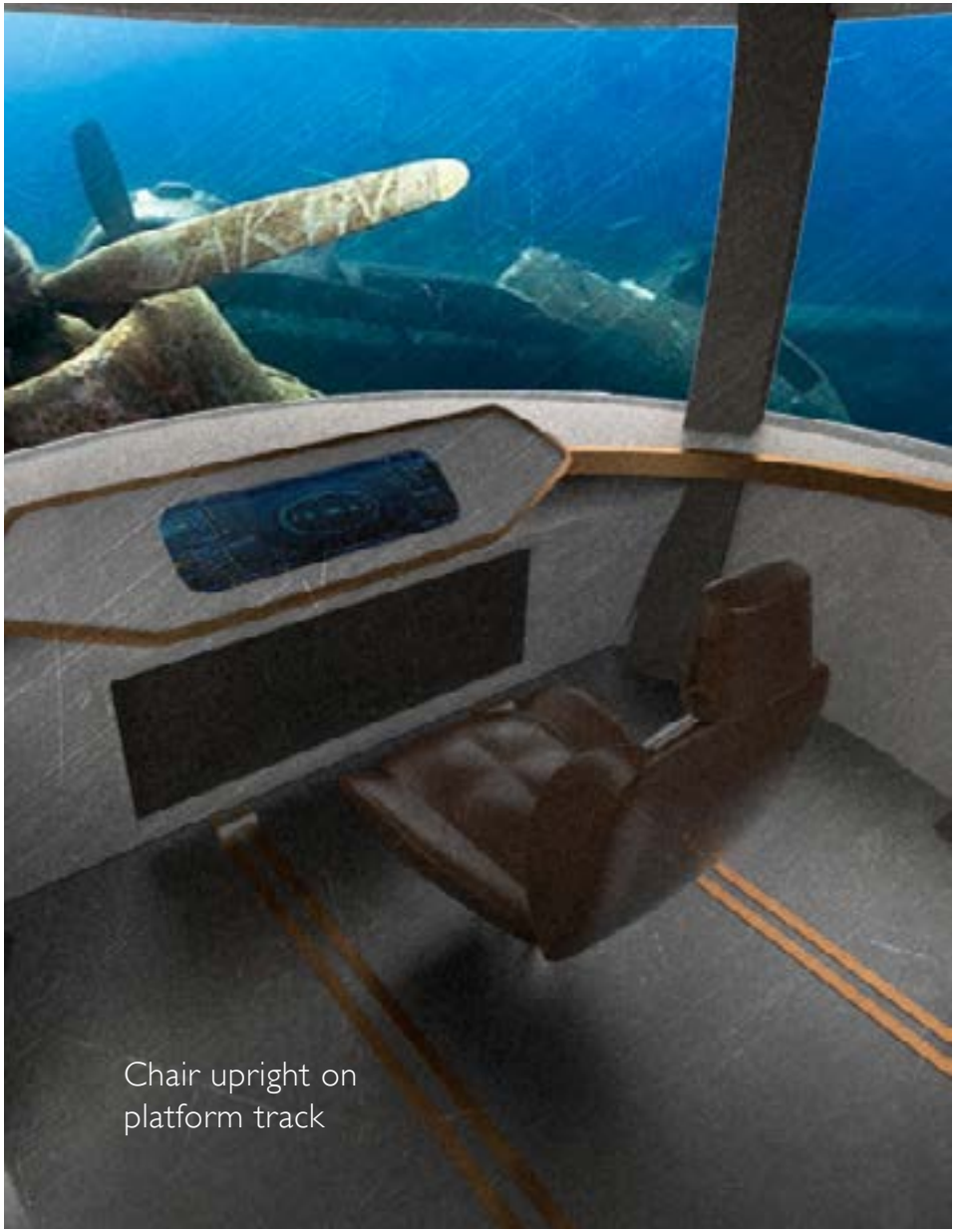
Theoretical alterations have been made to accommodate operations of the attraction to cater to industrial perspective. The below figure showcases a "backstage area" for employees to be able to navigate from visitor areas and behind the scenes. This includes hallways only accessible by employees, the operations tower, and the operations breakroom. The tower is the space where assigned employees will have full control over the ride, being able to handle any emergency stops, view security camera footage, and monitor the overall attraction. A break room and restroom are also necessary for employees for their shifts.



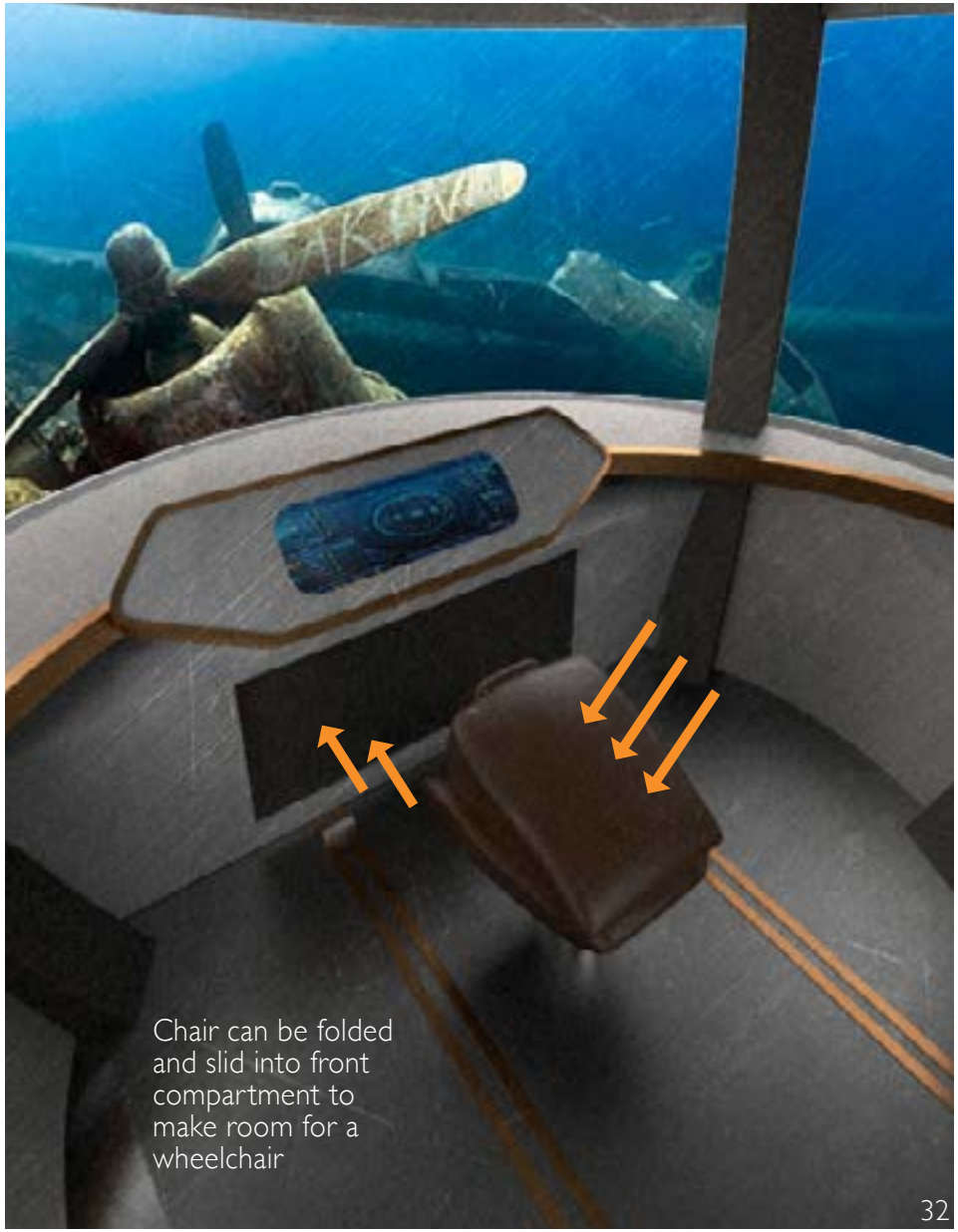
ACCESSIBILITY DESIGN

Under the adoption of the American Disabilities Act (ADA) as a general framework by the International Association of Amusement Parks and Attractions (IAAPA), we have attempted to reduce barriers to ride by ensuring a relatively seamless experience which does not single out any specific visitors. The whole experience is wheelchair accessible, including the digital ride experience, which negates the need for the user to dismount their personal wheelchair. The seat dynamics also allow easy installation through an accessible seat and a wheelchair tiedown and occupant restraint system (WTORS) that comply with SAE J2249, similar to those found on public transportation.

To accommodate visitors who are deaf or hard-of-hearing, the experience is integrated with visual cues, signage, and deliberate captioning that is woven into the narrative itself. We have also ensured adequate space to accommodate service animals.



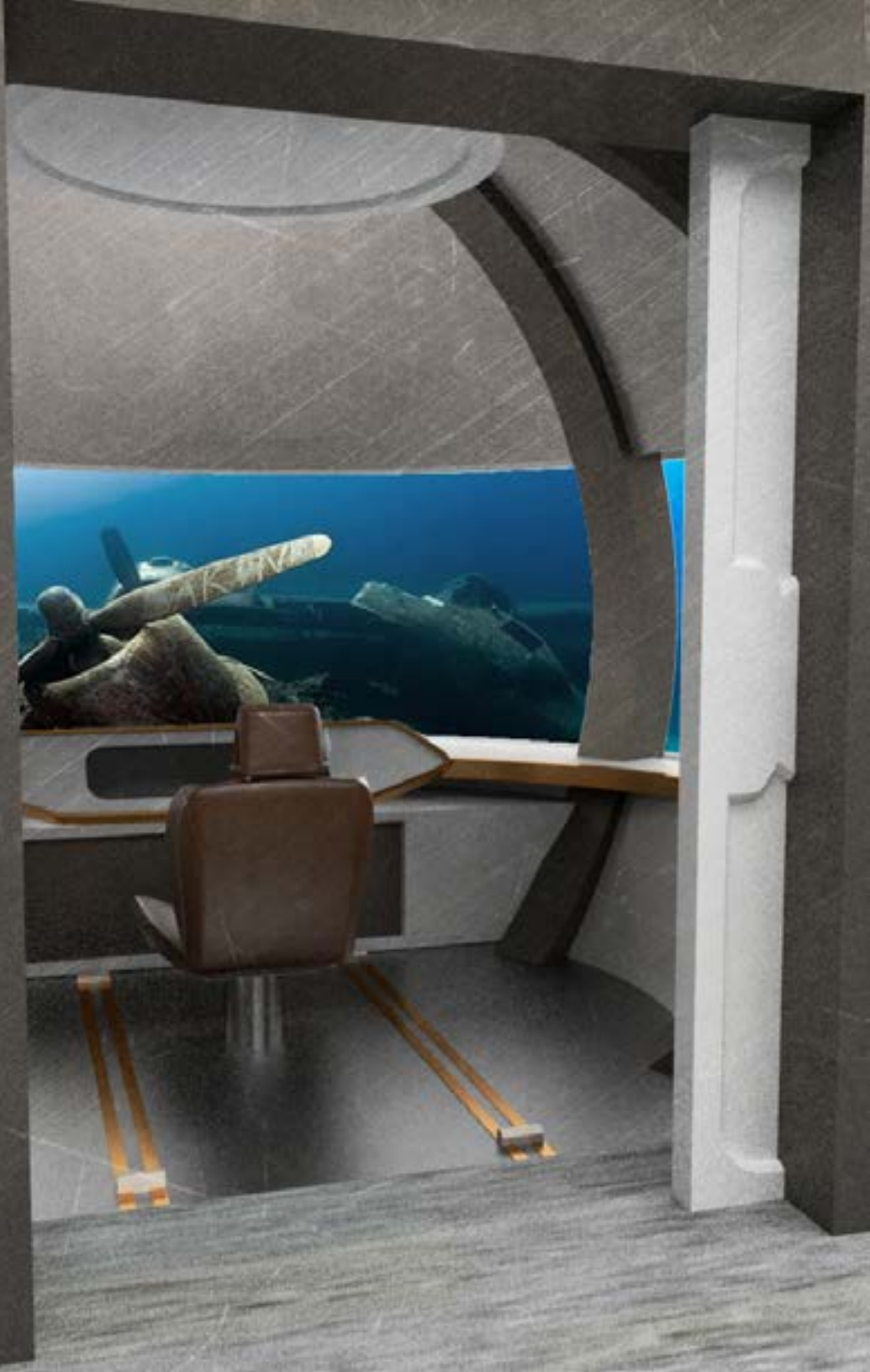
Chair upright on platform track



Chair can be folded and slid into front compartment to make room for a wheelchair

ACCESSIBILITY DESIGN
CONTINUED...

Our team has adjusted the build of the MDX LOCO original design to accommodate wheelchair accessibility. Some materials include Mild Steel Box Hollow, Festo DMSP DIA Fluidic Muscle, Sparco Seat, Upright Joint Mount, and more. Although some specialized parts are needed to be ordered through specific companies, all materials are attainable via online or through the local hardware store.



Screenshot (2020). From Middlesex University MDX LOCO website

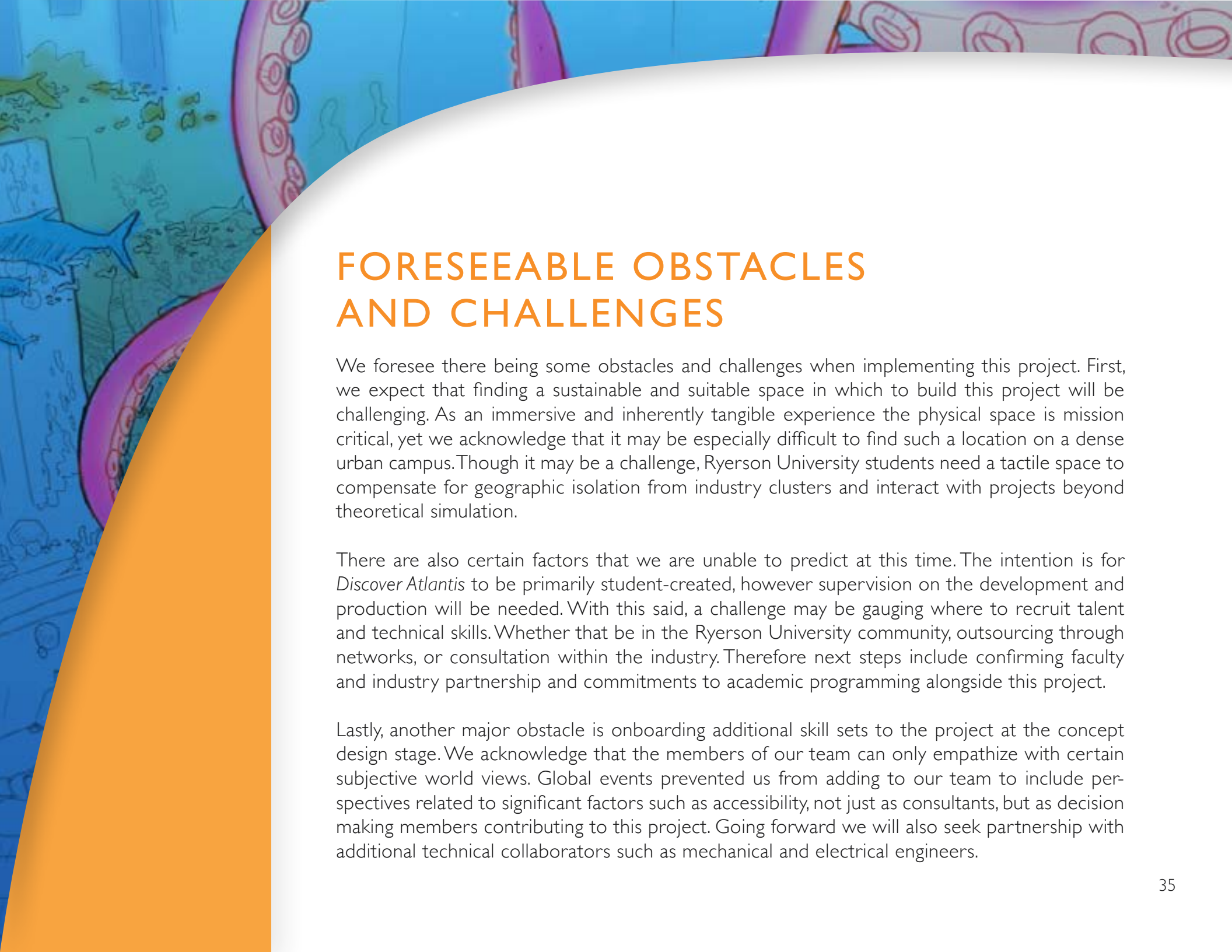
Screenshot (2020). "V-Armchair" parameters from open source schematics

ACCESSIBILITY DESIGN

CONTINUED...

Our team has adjusted the build of the MDX LOCO original design to accommodate wheelchair accessibility. Some materials include Mild Steel Box Hollow, Festo DMSP DIA Fluidic Muscle, Sparco Seat, Upright Joint Mount, and more. Although some specialized parts are needed to be ordered through specific companies, all materials are attainable via online or through the local hardware store.

Discover Atlantis intends to retrofit this resource as the visitor's seat. The total rough estimate of the materials for the MDX LOCO or "V-Armchair" is $3000 CAD. The total list of materials can be found on loco.mdx.ac.uk.



FORESEEABLE OBSTACLES AND CHALLENGES

We foresee there being some obstacles and challenges when implementing this project. First, we expect that finding a sustainable and suitable space in which to build this project will be challenging. As an immersive and inherently tangible experience the physical space is mission critical, yet we acknowledge that it may be especially difficult to find such a location on a dense urban campus. Though it may be a challenge, Ryerson University students need a tactile space to compensate for geographic isolation from industry clusters and interact with projects beyond theoretical simulation.

There are also certain factors that we are unable to predict at this time. The intention is for *Discover Atlantis* to be primarily student-created, however supervision on the development and production will be needed. With this said, a challenge may be gauging where to recruit talent and technical skills. Whether that be in the Ryerson University community, outsourcing through networks, or consultation within the industry. Therefore next steps include confirming faculty and industry partnership and commitments to academic programming alongside this project.

Lastly, another major obstacle is onboarding additional skill sets to the project at the concept design stage. We acknowledge that the members of our team can only empathize with certain subjective world views. Global events prevented us from adding to our team to include perspectives related to significant factors such as accessibility, not just as consultants, but as decision making members contributing to this project. Going forward we will also seek partnership with additional technical collaborators such as mechanical and electrical engineers.

CONCLUSION

There are limited opportunities for students, faculty and industry community members to collaborate on experimental and innovation driven themed entertainment projects. Canadian enterprises make exceptional contributions to the global themed entertainment market despite being physically isolated from leading industry clusters. There is an opportunity in higher education to provide a necessary resource and educational service to the future creators of themed experiences in a vast array of fields.

Discover Atlantis is an immersive narrative experience centered around interdisciplinary collaboration, accessibility design and interactive technology. Ryerson University is uniquely equipped to take on this groundbreaking project as a leader of interdisciplinary and experiential learning. The project will connect diverse groups of students to collaborate on dynamic, industry informed projects. *Discover Atlantis* will enrich the academic experience of participating members by building technical skills along with interpersonal strengths such as critical thinking, team work, and communication.

DISCOVER ATLANTIS

DESIGN TEAM

Discover Atlantis is a project created in the Spring of 2020 by:

Emily Le (Master of Digital Media)
Keegan Toscano (Master of Architecture)
Nicole Hack (Master of Digital Media)
Rachel Au (Master of Architecture)
Robin Kang (Master of Digital Media)
Stefan Grambart (Master of Digital Media)
Tamer Gargour (Master of Digital Media)

WORKS CITED

Accessibility Legislation in Ontario . (n.d.). Retrieved from: https://accessibilityconsultants.ca/resources/legislation

Carnegie Mellon University, L. K. (2019, April 10). "Take a Ride on The Old Mill at CMU". News. Carnegie Mellon University. Retrieved from: https://www.cmu.edu/news/stories/archives/2019/april/spring-carnival-old-mill.html

Cornelis, P. (2011). A management perspective on the impact of new attractions. Journal of Vacation Marketing, 17(2), 151-162. doi:10.1177/1356766710392483

Etcheberry, D. (2013, October). "How using a wheelchair changes the theme park experience". Theme Park Insider. Retrieved from: https://www.themeparkinsider.com/flume/201310/3700/

Government of Canada. Summary - Canadian Industry Statistics: Amusement and theme Parks - 71311 (2019). Retrieved from: https://www.ic.gc.ca/app/scr/app/cis/summary-sommaire/71311

Griffiths, Wyn and Patel, Ahmed (2017) #MDXPD Product Design 2017. Technical Report. Middlesex University

IBIS World. (2019). "Amusement Parks & Arcades in Canada industry statistics". Retrieved from: https://www.ibisworld.com/canada/market-research-reports/amusement-parks-arcades-industry/

Johnson, J .E. and Maness, Karen (2018) "Soft skills with teeth: Creating authentic learning environments with charismatic mega-projects," Journal of Themed Experience and Attractions Studies: Vol. 1 : Iss. 1 , Article 2. Retrieved from: https://stars.library.ucf.edu/jteas/vol1/iss1/2

Market Watch. (2019, December 6). "Amusement Parks Market Analysis and Outlook During 2019-2025". Retrieved from: https://www.marketwatch.com/press-release/amusement-parks-market-analysis-and-outlook-during-2019-2025-2019-12-06?mod=mw_quote_news

Milman, A. (2001). The future of the theme park and attraction industry: A management perspective. Journal of Travel Research, 40(2), 139-147. doi:10.1177/004728750104000204

New Data on Disability in Canada, 2017. (2018, November 28). Retrieved from: https://www150.statcan.gc.ca/n1/pub/11-627-m/11-627-m2018035-eng.htm

Ontario Human Rights Commission. (n.d.). Retrieved from: http://www.ohrc.on.ca/en/policy-ableism-and-discrimination-based-disability/1-introduction

Passmore, Peter J., Tennent, Paul, Walker, Brendan, Philpot, Adam, Le, Hoang H., Markowski, Arja Marianne and Karamanoglu, Mehmet (2017) Archives of thrill: the V-Armchair experience. In: ICAT-EGVE 2017 - International Conference on Artificial Reality and Telexistence, 22-24 Nov 2017, Adelaide, Australia.

QY Reports. (2019). "Global Amusement Parks Market Size, Status And Forecast 2019-2025". Retrieved from: https://www.marketinsightsreports.com/reports/07121359216/global-amusement-parks-market-size-status-and-forecast-2019-2025/inquiry?source=MW&mode=86&mod=article_inline

Schneider, L. W., & Manary, M. A. (2008, August 1). "The Dos and Don'ts of Wheelchair Transport Safety". Retrieved from: https://www.schoolbusfleet.com/article/611464/the-dos-and-donts-of-wheelchair-transport-safety

Schulson, M. (2019, December 10). "Wheelchairs On Planes: Why Can't Passengers Use Their Own Onboard?". NPR. Retrieved from: https://www.npr.org/sections/health-shots/2019/12/10/786559969/wheelchairs-on-planes-why-cant-passengers-use-their-own-onboard

Welcome to MDXLOGO. (n.d.) MDXLOCO. Retrieved March 30, 2020 from: http://loco.mdx.ac.uk/

Younger, D., Baxter, T., & Rohde, J. (2016). Theme Park Design & the art of themed entertainment. Plaats van uitgave niet bekend: Inklingwood Press.

#MDXPD Product Design 2015. (2015). Middlesex University School of Science and Technology.