

Fig 1: Rendered light tunnels
with single spot light.

Glasgow's Sisters

Extending Design

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Proposal:

My Extending Design proposal is for a multi-location light sculpture chandelier that connects artistic communities in Glasgow and its nine sister cities, through the simple shared experience of weather and time of day.¹ In a world of seemingly constant contention and discord, this piece seeks to build a silent connection. It links cities through the common factor of weather and the number of hours in a day: something that connects us all and transcends our cultural, political, and linguistic barriers. I believe that highlighting these shared experiences in everyone's life might lead to a connection over the common and the beautifully mundane.

The sculptures use weather data and light to visually represent current conditions, in each of Glasgow's sister cities. By displaying these real-time weather and daylight conditions, the sculptures hope to create an ongoing, silent bond among the cities and their viewers.

In the collection of these light tubes, the sculpture's corresponding tube can only be seen in those other countries: Glasgow can not see its data, as Havana cannot see theirs. This is for a few reasons, the first being that a light tunnel showing the weather of the city it is in would be redundant, the second being that without the light of that city the viewer would

ideally see themselves as the missing tunnel of the display and then build more of a connection to the piece and in turn the sister cities.

Glasgow's Sisters:

Nuremberg, Germany; Dalian, China; Havana, Cuba; Turin, Italy; Lahore, Pakistan; Marseille, France; Bethlehem, Palestine; Pittsburgh, USA; Mykolaiv, Ukraine.

¹ Glasgow City Council, 'Twin Cities'.

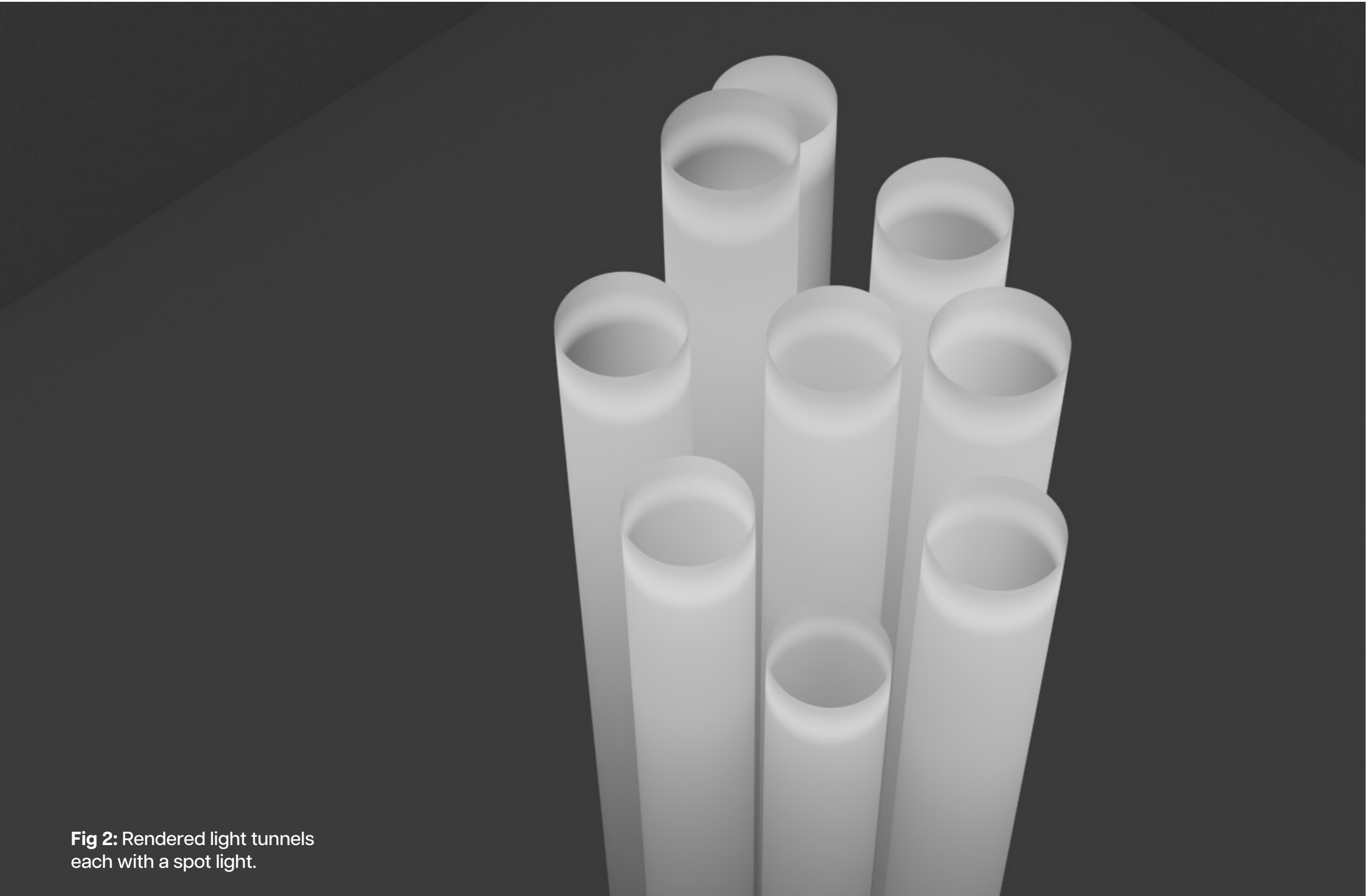


Fig 2: Rendered light tunnels each with a spot light.

Background:

As a creative technologist, designer, and artist, I often explore the connections people experience with the world around them, each other, and technology; either facilitating them or highlighting them.

The first iteration of this work, *Wind Chimes*, the data was more personalised, each tube within

the work represented one person and the data collected about their day. As this was a data visualisation, I believed it showed the beauty of the data, but after development, I found that both the data collected and the output representing it could be more elegant, and that, in that vague elegance, it would appeal to and connect with more people.

The new iteration of this project would build upon the style, the fundamentals, the visual language, and the style of the original, but refine it. The data is simpler, the visual language is simpler, and the story being told is universal.

Logic:

There are 10 cities within this project. Each city is given 9 light tunnels and each of those light tunnels has a colour-changing programmable light at its top. The whole sculpture is controlled by mini computer, which will download the weather data and change the colour of the corresponding light. The enclosed eco-system of the piece means that it is as simple as

assembling however the gallery sees fit and plugging in.

When looking to how the light tunnels have been made aswell as the parts provided it will be self explanatory on how much freedom the gallery has with assembling and displaying the piece.

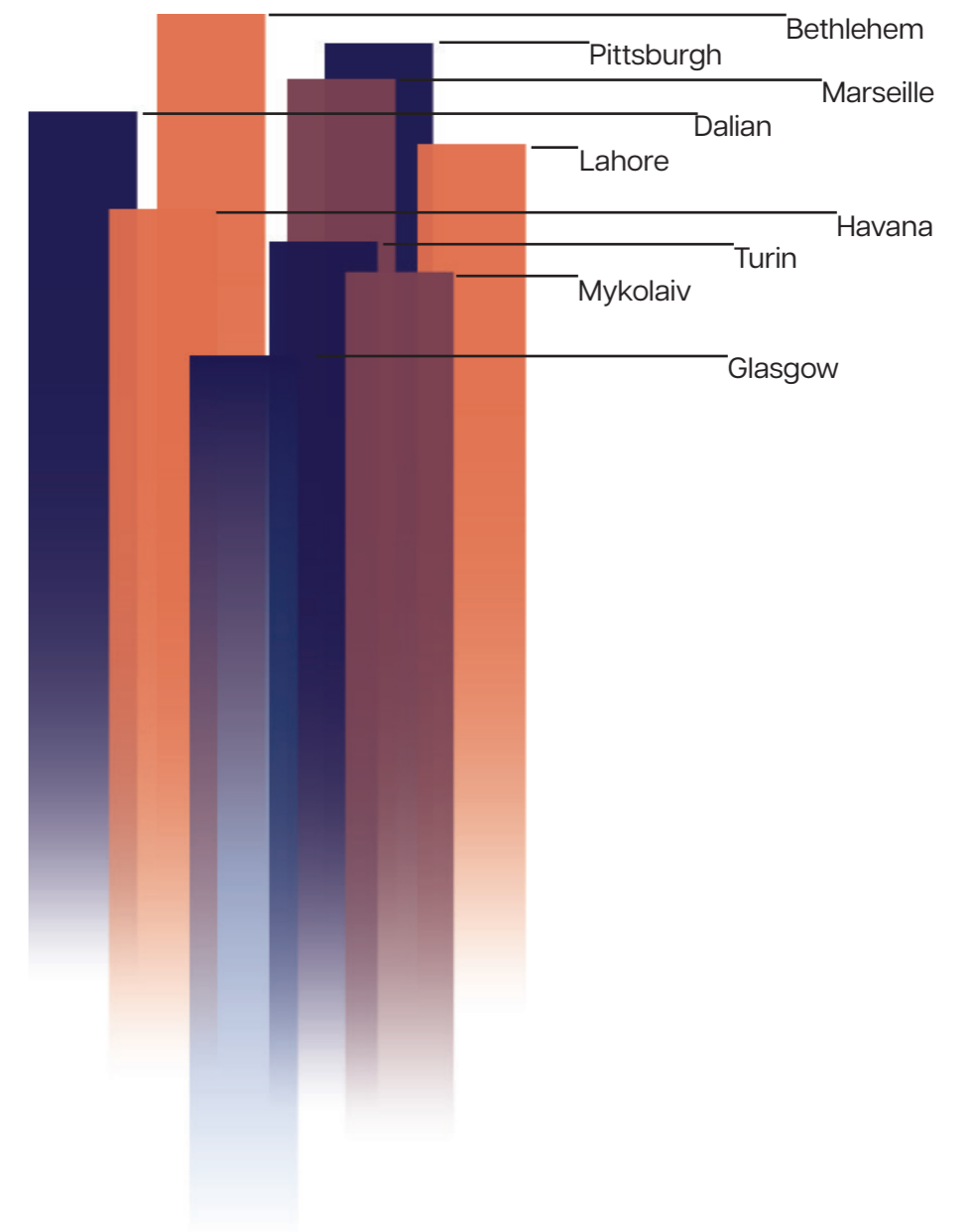


Fig 3: Illustration showing labels of which light tunnel would be assigned to which city.

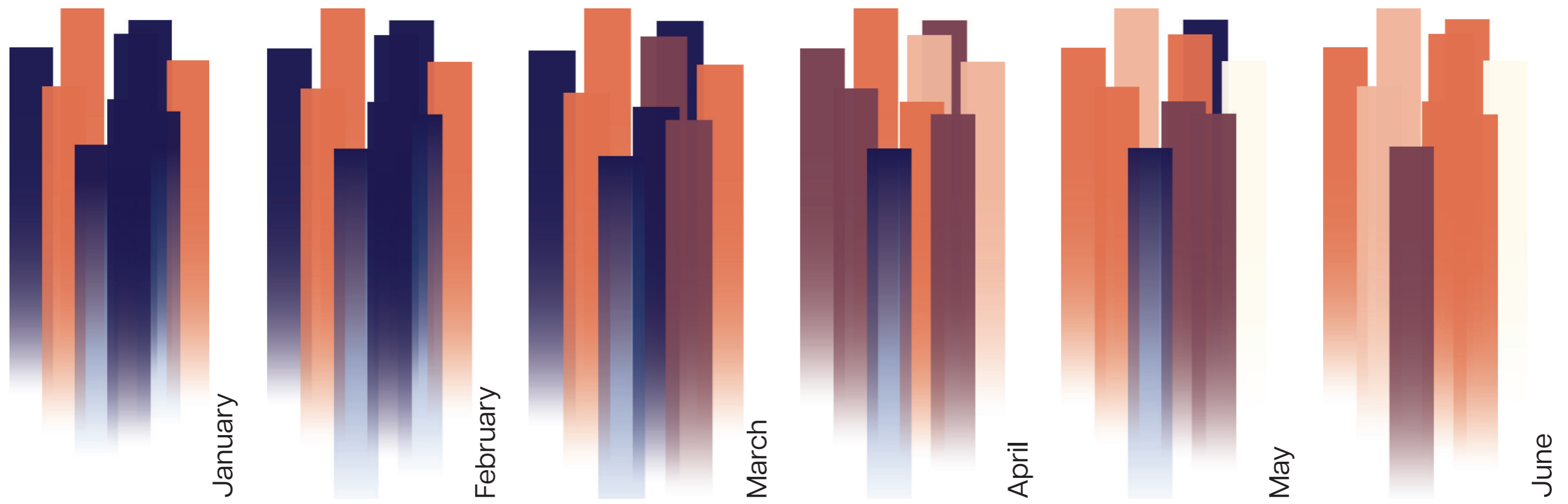
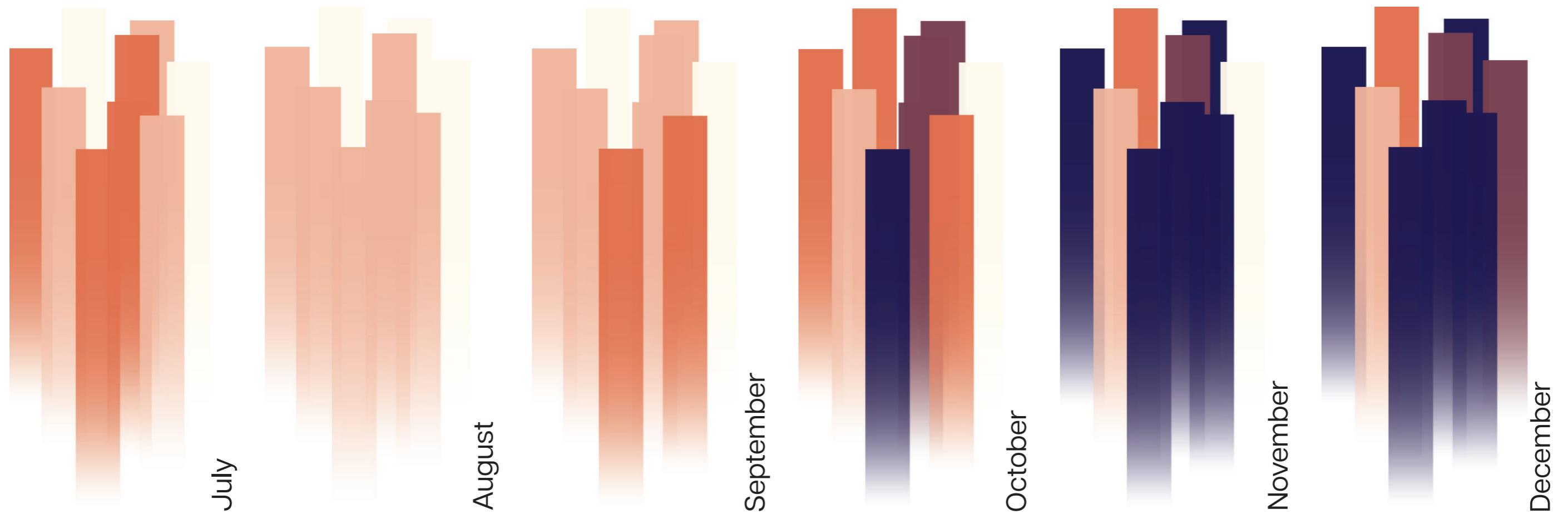


Fig 4 - Fig 15: Illustration showing an example of how the piece would change over the span of a year.



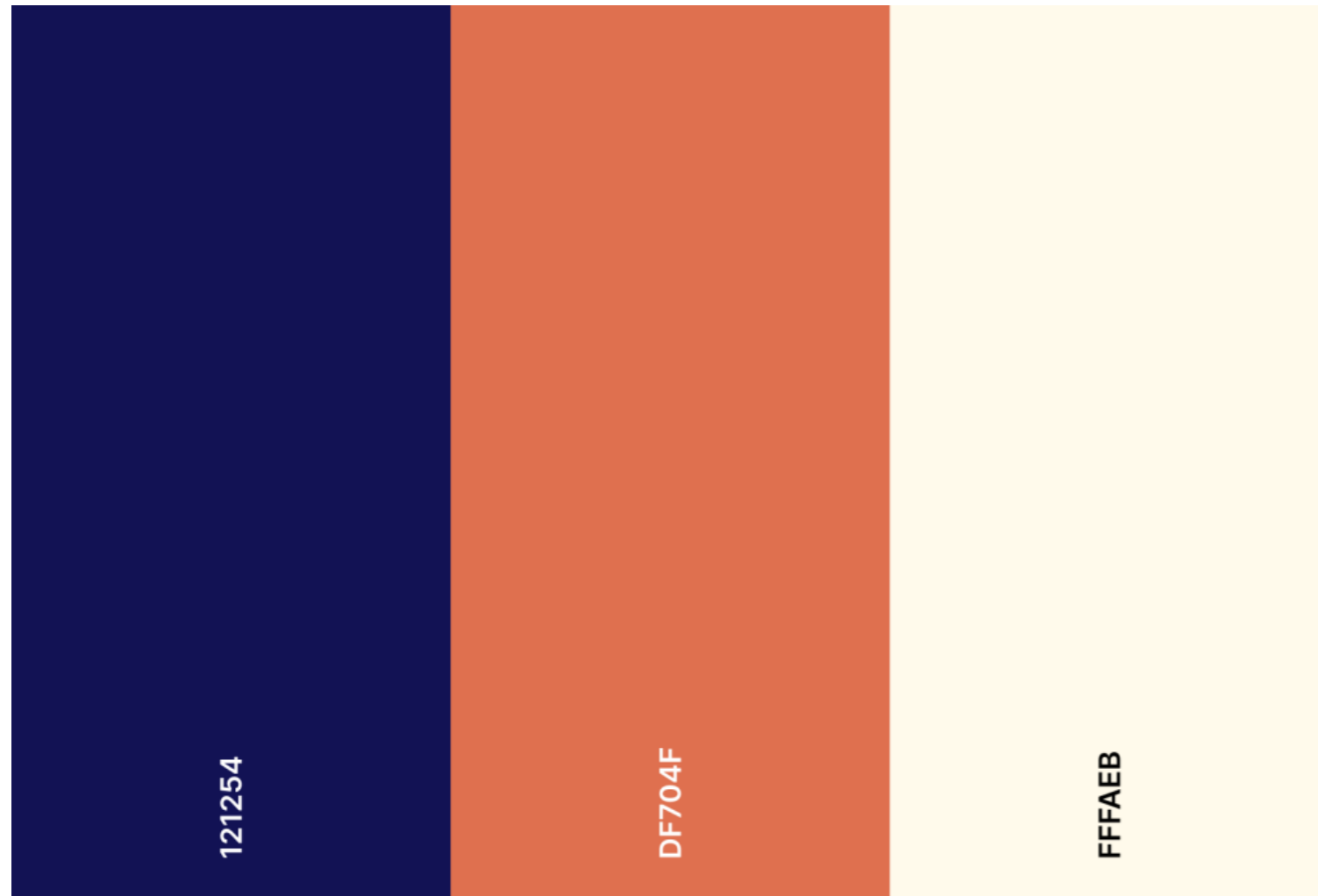


Fig 16: Basic colour scheme .

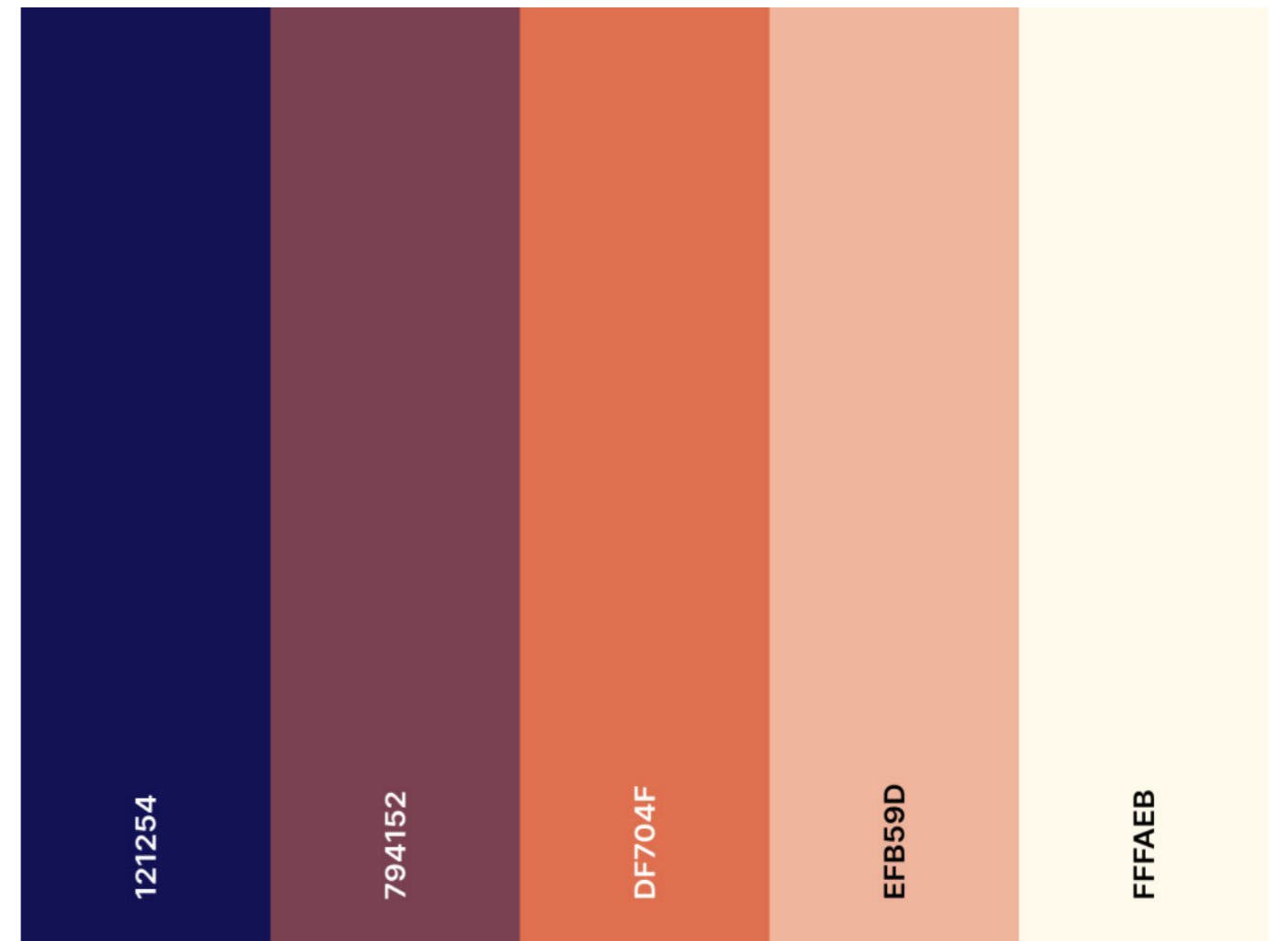


Fig 17: Expanded colour scheme.

Colour:

As the time and weather data are communicated through light and colour, the language of colour and light temperature is also important to the piece; All of these will be pre-programmed and driven by the data. The colours shown here are what is going to be programmed into the lights but through the frosted acrylic these colours will seem partially washed out and softened.

Data:

Every hour the custom program will pull the weather data from the best possible pre determined source. In this same program there will be a colour assigned to each city's current weather, which will be used to drive the programmable lights at the top of each light tunnel.

The data will be collected from local sources of live weather monitoring, such as national

meteorological services, citizen science networks; educational establishments or Open Weather Maps API, a small computer, such as a Mac mini or a mini PC, will drive the programable lights.²

The data can be sourced from the any of the previously mentioned sources, whichever is the most stable for the location of the corresponding gallery.

² *OpenWeather*




Fig 18: Rendered light tunnels with multi coloured lights.





Fig 19: Rendered light tunnels with multi coloured lights.

Mounting:

Each acrylic tube will be hung together with the metal hanging wire commonly used for ceiling mounting of light fixtures, when looking at possible weight limit of both the plastic materials and hardware this is excessive but again is easy to use, very secure and easy to source.

There will be 3 holes drilled at the top of each tube with enough space for the wire to be fed through easily.

Cost:

Since this piece will be made and reproduced 8 times, then shipped globally, consistency is essential.

Tunnels:

Each light tunnel will be made of frosted acrylic, cut to standard size. Each of the 9 cities will receive 8 identical light tunnels, for a total of 72 tubes of acrylic drilled at the top for hanging.

Lights:

The lights will be programmable, colour-changing lights: either small DMX lights with high enough lumens to travel down the length of the tunnels, or a number of Neo Pixel ring lights on either side of the tunnel.

Skilled Technician:

If there are any problems that cannot be fixed by referring to the operations manual then there will be someone assigned to fix a software issue remotely or a capable manufacturer will be sourced for any hardware problems.



Fig 20: Scale rendering of piece in the GoMA.



Fig 21: Scale rendering of piece in the GoMA.

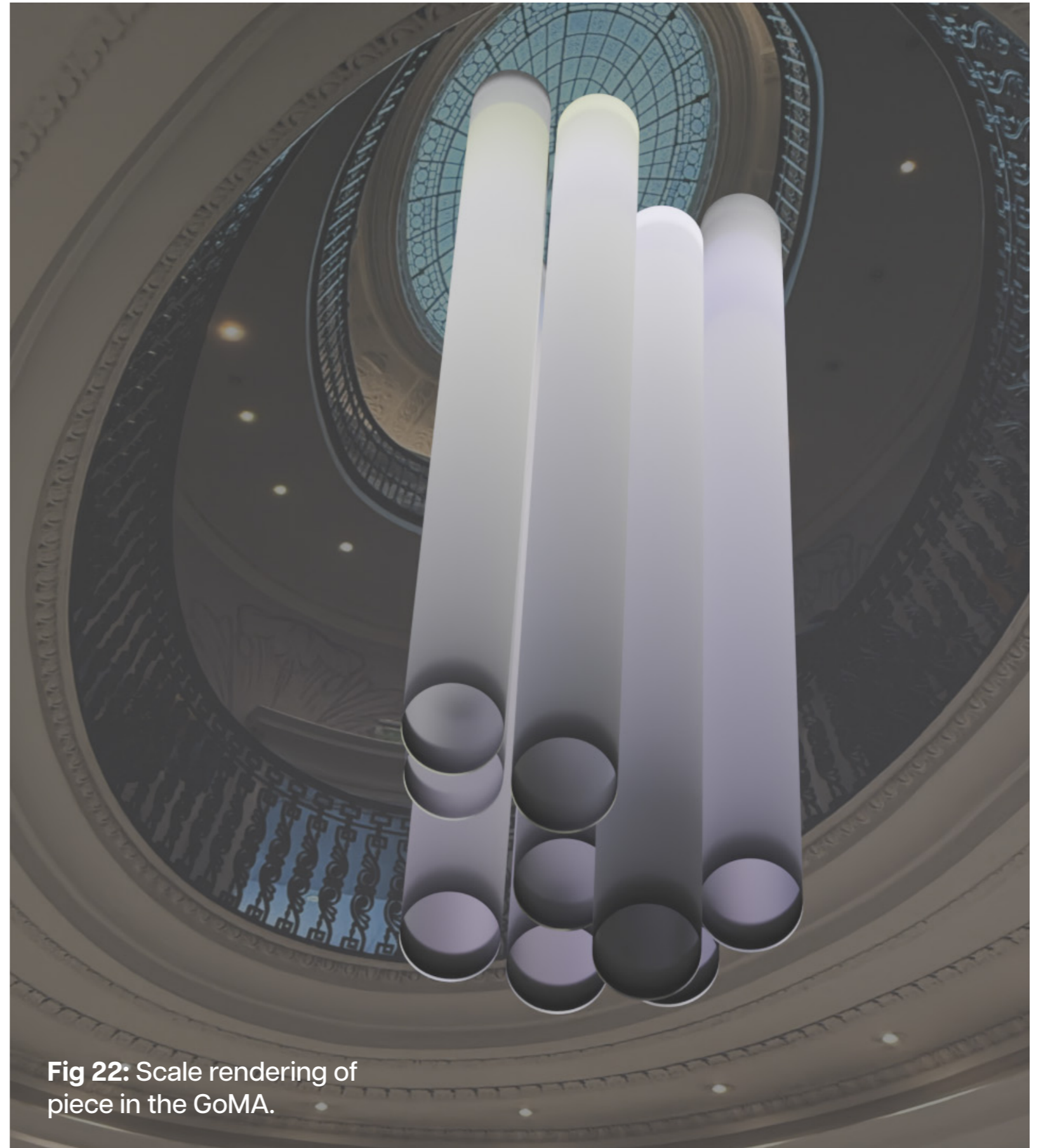


Fig 22: Scale rendering of piece in the GoMA.

Details:

As this piece is going to be displayed around the world in different galleries, different spaces, different conventions and different cultures that I do not know nearly enough about, I would like to take inspiration from Sol LeWitt's collection of Wall Drawings and instruct each gallery to display the work with a certain number of pre-decided variables and some undecided as to create unique and engaging pieces that work within each gallery and each culture.³

The variables each gallery controls are the order and height at which they wish to hang each light

tunnel, and the location in the gallery where they would hang it.

The manufacturing of the tunnels and the technological components provided would ideally constrain the other variables of the piece. This is to provide each gallery or artist with a sense of agency and ownership over each variation, and to allow the surrounding gallery and culture to influence the piece in ways I might never consider; without restricting this to one man's vision of art.

The project's automation will be tied to each city's time zone, as long as it has an internet connection, to keep a self-correcting clock and to access the weather data streamed into the gallery. The project's automation will be pre-programmed, and as long as the computer has power, it will turn on and off at the galleries' opening times.

As regards accessibility, the visual nature of the piece might be seen as exclusionary for those who are visually impaired, but this could be discussed with each gallery to develop an audio description track in their respective language.

³ Mass MoCA, 'Sol LeWitt: A Wall Drawing Retrospective'

The Galleries:

As this project is to connect the sister cities of Glasgow, the cities themselves have to be considered.

As with the installation of the piece, there were several aspects to consider, including location and connection to the local community.

Glasgow, Scotland:

For Glasgow, the GoMA was chosen both for its location at the centre of Glasgow and for its well-known status within both the public and the artistic community. As I have first hand knowledge of the location and would be the Glasgow agent in this project, the main room of the GoMA darkened

would be the pieces initially home until being moved out to the mezzanine area in the gallery.

A list of each gallery that has been chosen :

- Nuremberg, Germany - The Kunsthalle Nürnberg
- Dalian, China - Dalian Modern Museum
- Havana, Cuba - Factoria Habana Art Gallery
- Turin, Italy - The Turin Civic Gallery of Modern and Contemporary Art
- Lahore, Pakistan - Alhamra Art Center
- Marseille, France - [mac] Musee d'art contemporain de la Ville de Marseille

- Bethlehem, Palestine - Dar Yusuf Nasri Jacir for Art and Research
- Pittsburgh, USA - Mattress Factory Contemporary Art Museum
- Mykolaiv, Ukraine - Gallery

These galleries range in size and scale but no one should be put above or below another, there might have been more accommodating options in neighbouring cities but that then is detected from the meaning of this project.

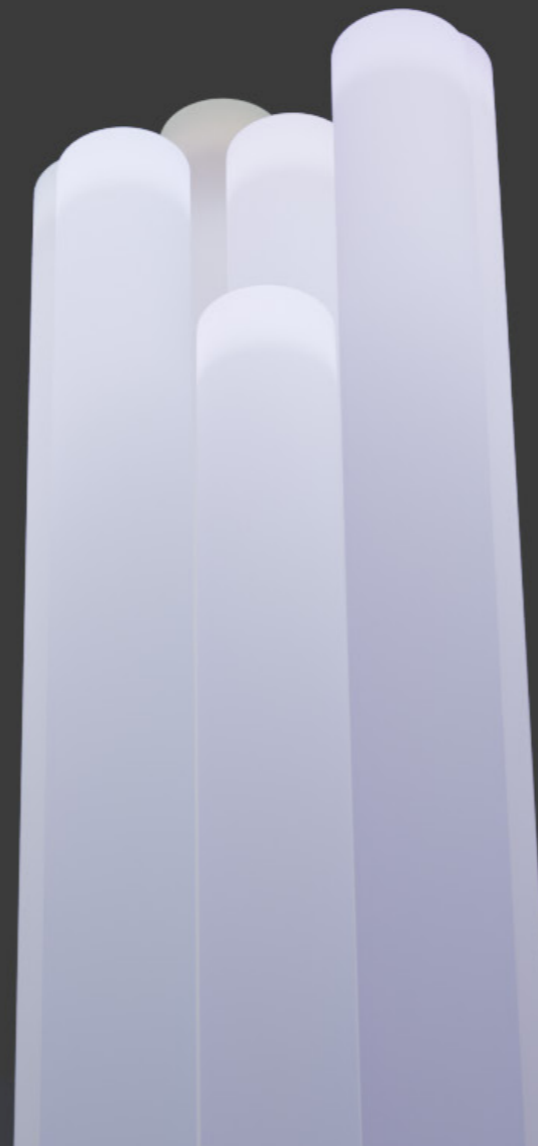


Fig 23: Rendered light tunnels, cool colour scheme.

Maintenance:

For maintenance and troubleshooting, an Operations Manual (OM) will be included to address any issues that may occur during the life span of the piece. As most of the pieces will be standard, easily replaceable, or shippable from any manufacturer, any breakages or deterioration can be fixed or replaced. The program and the connection to the live data will also be included, so that ideally the piece will start up and turn off on its own and access the data on its own.


The image shows five vertical, tapered light tunnels of varying heights and widths, rendered in a warm, golden-brown color scheme. They are set against a dark, gradient background that transitions from black at the top to a dark grey at the bottom. The tunnels have a soft, glowing appearance, suggesting they are light sources or part of a digital installation.

Fig 24: Rendered light tunnels,
warm colour scheme.

Parts and Assembly:

As previously stated each part of this project will ideally be standard or shippable globally either from myself sourcing components and materials from Glasgow and the UK or can be sourced to the gallery that may need it with relative ease from a local supplier.

All specifications of material and manufacturing will be predetermined during further development and with a consideration for ease

of assembly, as well as ease of disassembly and replacement of parts. The goal of this project is not to make something bespoke and premium but assessable and elegant not only in language but in materials and manufacturing.

When considering all digital components of the project there will be a file transfer available to each gallery that can be accessed at any time to minimise any problems or file corruption.

This will also be advantageous if there is any problems with the Mac Mini or the mini PC and any files are lost or connections severed.

If the connection is severed then the previously discussed automation of the program means that the piece will simply need to be disconnected from the power and then reconnected.




Fig 25: Up close rendering of light tunnels.

Proposal Conclusion:

To conclude, I believe this project will foster community between Glasgow and it's sister cities and connection, it will be an enriching experience and process, building communities and connections not only in their own lives but in their professional and creative communities across these partaking cities.

Art galleries are an integral part of our society and of our expression as artists and as communities. At a time when

both community and artistic expression are under appreciated, Glasgow can be a guiding light in building these global communities, taking a small step toward reaching out to them and forming a creative sisterhood that may bring life to other interconnected pieces of art.

By creating echoes of each project in each of Glasgow's sister cities and allowing these echoes to be influenced by the cities they inhabit and the people they come

into contact with, they will then grow and change in ways that I cannot predict but remain open to.

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Bibliography:

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