



E₂CITY

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Energy → Electricity → Light

UAL's Net Zero and Sustainability Implementation Plan (NZSIP) foregrounds energy reduction as a key institutional target.

Within the environmental data provided, electricity consumption formed a significant measurable category.

We asked: how can this be made spatially legible at CSM?

Lighting emerged as a traceable, building-wide electricity system.

Unlike abstract carbon metrics, light is observable, documentable, and accumulative.

By focusing on lighting infrastructure, we translated Net Zero ambitions into material, site-specific data.

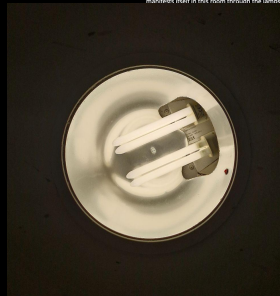


In this historical thread of object-oriented ontology, it is clear to think that we are massively indebted to the line and point evidence to human. A fragment could be the very long-lasting impact of every human intervention. A fragment could be the very long-lasting impact of every human intervention. A fragment could be the very long-lasting impact of every human intervention. That, are these in relation to some thing that actually emerge they are exactly represented by means of one.

The fragment (or the partial aspects visible to us humans exhibited by these hyperobjects do not represent their entirety. We can only perceive their partial aspects because these superobjects exist in higher-dimensional phase space. Our temporal fields are not synchronized.

Hyperobject, such as climate change, are too vast to be exhibited by any single entity. We can only perceive them through the connections between objects.

When we flip the switch on, we engage in an "interobjectively" interaction with coal burning dozens of kilometers away or shifting water behind distant dams. The rock switch, superobject of carbon emission sphere materializes itself in this room through the lens.

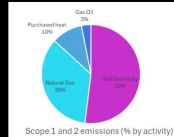
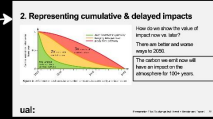


1 TIME & SCALE

Engaging with the climate crisis requires thinking across scales and resolutions of time. Paradoxically, our ability to comprehend the vast scale of **hydrological time** is essential to understanding the need for quick action in response to rising global temperatures. And in the opposite direction: The possibility of immediate data collection—of energy use, water consumption, or carbon emissions—forces our attention down to the level of days, hours or minutes, and yet the effects of our actions will be felt for generations.

What does it mean to work across temporal scales as a graphic designer? What are historical and contemporary representations of time useful for? What are their limitations? How can we make geologic time comprehensible? How can we reconcile multiple scales of time through visual methods? As a group, develop an iterative response to a question about time and scale. Use this NZSIP as a guide to help focus your work on one data source, impact area, or other specific context.

How to visually place "the small actions of the moment" and "the long-term consequences on a geological scale" within the same frame to make people feel more responsible for taking action to rising global temperatures?



If we turn off the lights in this classroom every day when we leave.

Power: Each panel consumes approximately 40W, totaling about 600kW.

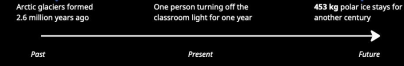
Frequency: If we reduce lighting usage by 12 hours daily over 100 school days per year:

Annual Energy Consumption: $0.6kW \times 12h \times 100 \text{ days} = 720 \text{ kWh}$ (kilowatt-hours).

Energy conversion: 720 kWh represents an extremely small fraction of UAL's annual total energy consumption of **18,800,000 kWh**. (0.0038%)

Carbon emissions: In the UK, 720 kWh generates approximately **151.2 kg of carbon dioxide (CO₂)**. It would linger in the atmosphere for over 100 years if released.

Scientific conversion: Emitting 1 kg of CO₂ causes approximately 3 kg of glacial ice to melt. The annual habit of turning off lights could prevent about **453 kg** of 0.3 m³ of polar ice from melting.



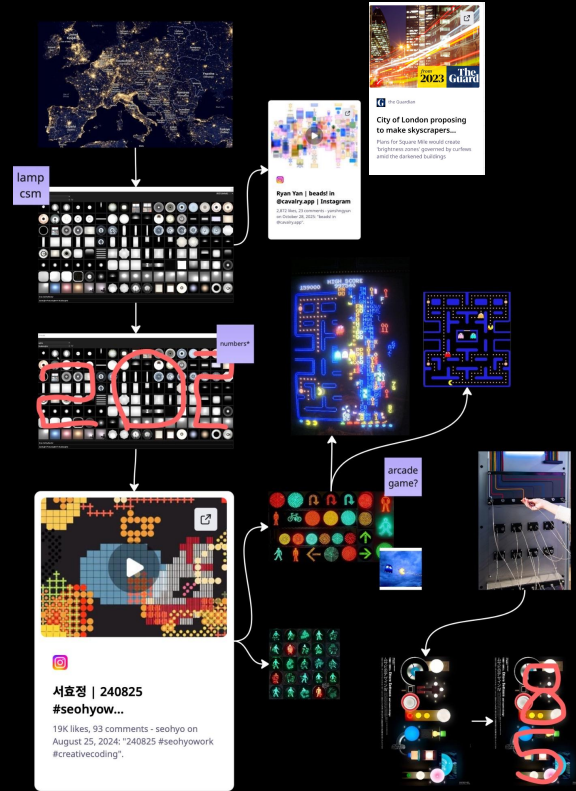
Light Pollution → Patterns

Real-time map lighting switch website

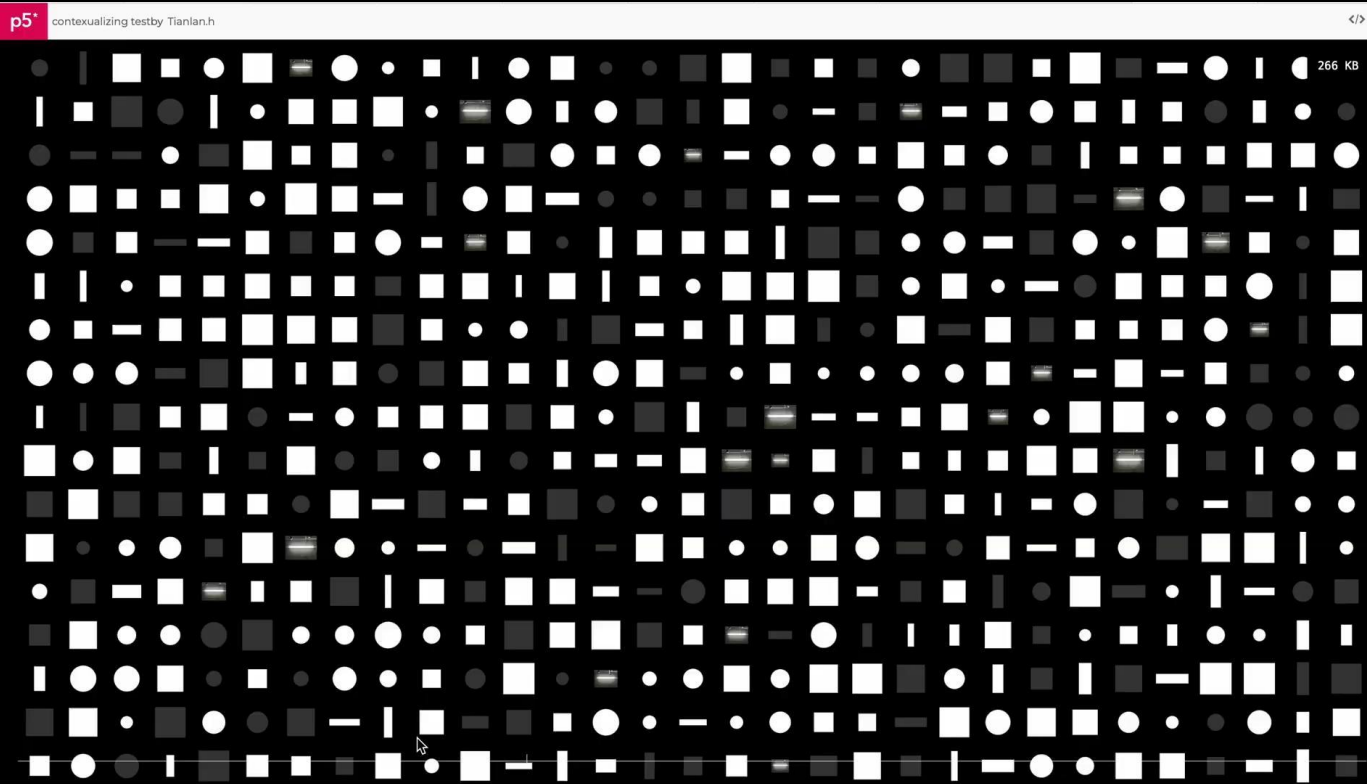
Using collection of patterns as a representation of rising light pollution problem (*City of London proposing to make skyscrapers dim their lights at night. (2023). The Guardian*)

Switching lights on and off functions as a metaphor for daily actions of consumption + foregrounding behaviour over aesthetic form. Certain fixtures remain permanently lit, which we represent through fixed light forms within the interface. (*Security & facilities staff consultation*)

Using a group of the same lights dimming and lighting at the same time to depict CSM's classroom spaces that can be only controlled together and sometimes left even there is nobody in class. (*Group Investigation*)



What are we communicating?



We are communicating:

- The cumulative impact of individual light fixtures.
- The relationship between micro actions and macro institutional systems.
- How everyday infrastructure contributes to environmental load.
- The scale of lighting consumption across CSM.
- Energy as spatial, not abstract.

Week 1's draft

What we did as a team

Divided the building (Ground–3rd floor)
among four team members.

Systematically photographed and mapped
all visible light fixtures.

Counted fixtures room-by-room and
categorised by type.

Consulted security and facilities staff to
understand wattage, motion sensors, and
operational patterns.

Observed daily rhythms: first lights on, last
lights off.

Noted percentage of motion-sensored vs
continuously active lights.

Compiled close estimations of electricity
consumption based on fixture type and
usage duration.



From Raw Data to Structured System | From Documentation to Interface | Challenges & Institutional Constraints | Scaling the Data (Micro → Macro)



Floor number

Room number

0 F202 CB3

Block

Type of lamps

$$E_{hourly} = \sum_{i=1}^{20} \left(\frac{Wattage_i \times Quantity_i}{1000} \right) \times 1 \text{ hour}$$

Hourly Energy Consumption in kWh

Renaming Files to Catalogue



ative machines, environmen



Inspiration

I went to CSM at 8 pm to do light collection jobs. As far as I know, almost all classes had ended by 8 pm. However, I found that most of the lights in every studio were still open.

3.2 MB



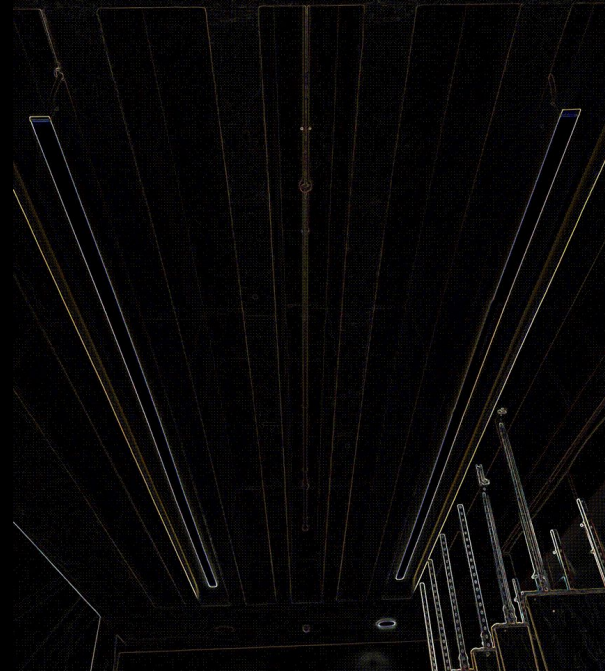
Original image

86 KB



Compressed image

63 KB

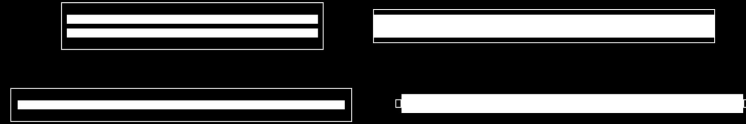


Filtered image



Areas of Enquiry

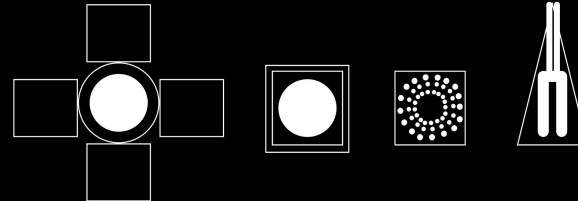
1. How can we reconcile multiple scales of time through visual methods?



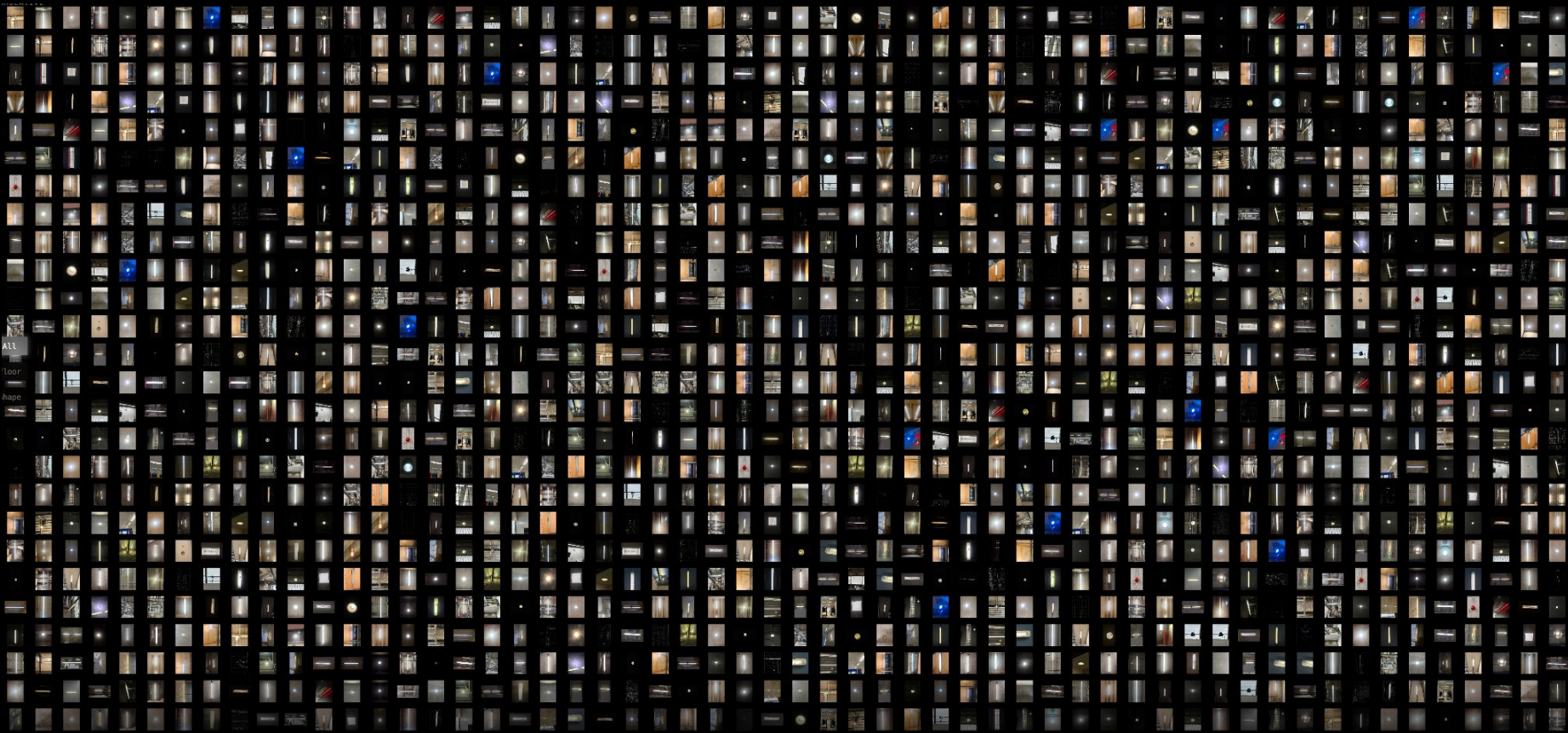
2. What are historical and contemporary representations of time useful for?



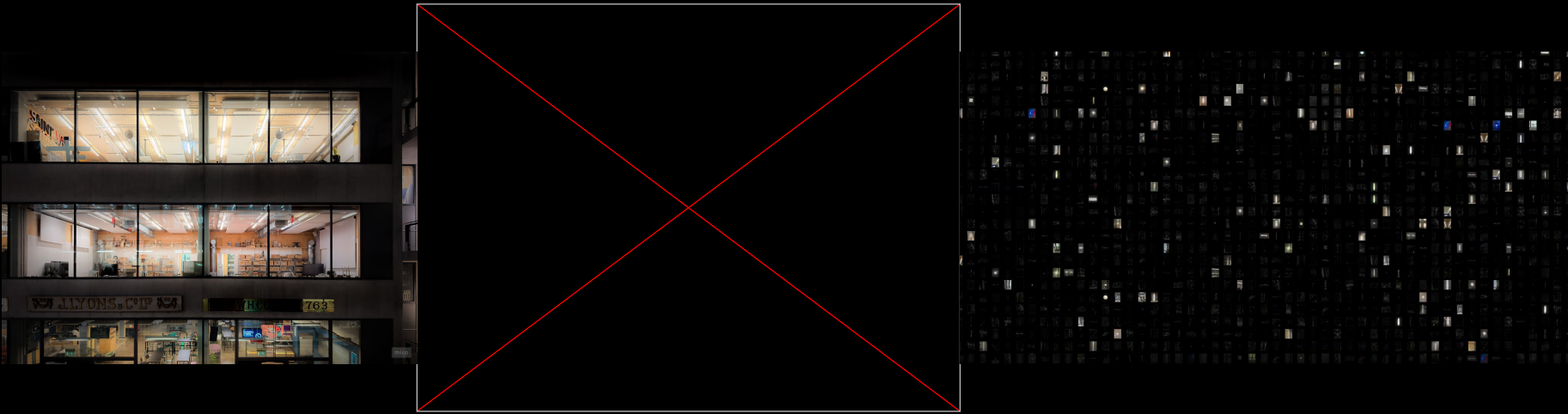
3. How can interface design mediate between individual action and collective environmental impact?



4. How does visualising infrastructure redistribute awareness and accountability within institutional systems?

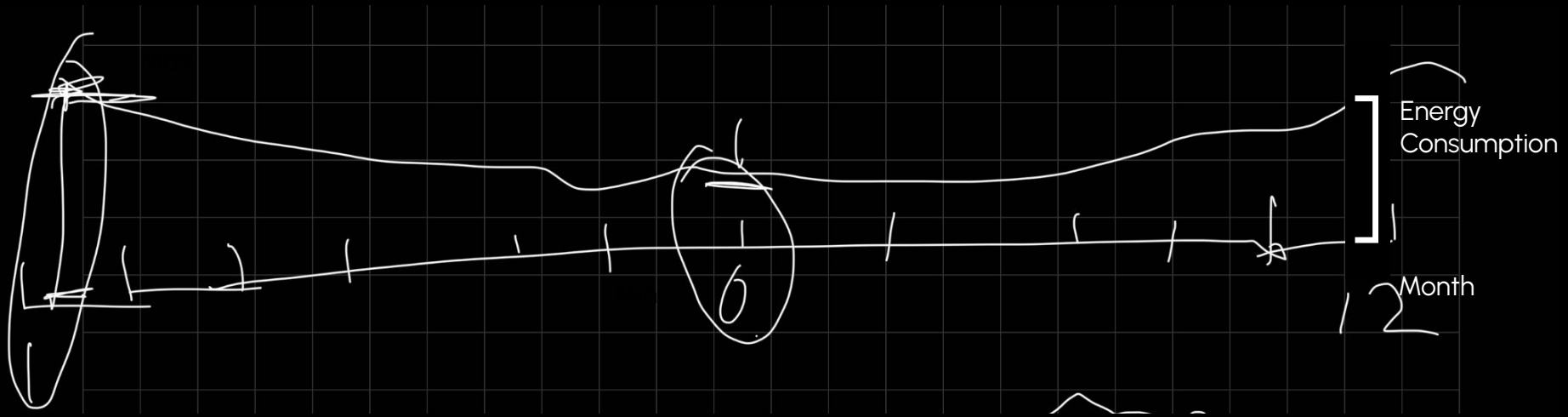


It felt excessive. We started to wonder is there a measurable pattern of energy waste?
So we decided to make them as a data collection. It documents every light, its position, its floor, its shape, its condition, its energy..



Concept of Floor Display

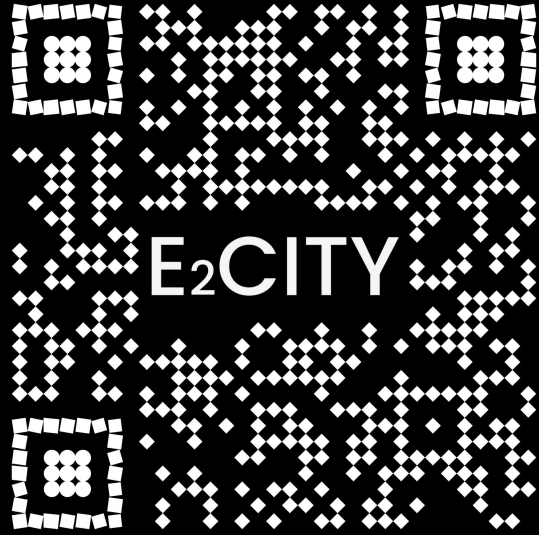
Similarly, when constructing the floor classification, we also referenced the structure of the CSM building. We designed it to illuminate floor by floor so that viewers could clearly understand.



Timeline & Energy Consumption

To clearly visualize energy consumption level, we mapped usage levels onto the draggable timeline. This feature illustrates monthly fluctuations driven by seasonal changes in daylight hours and university breaks.





E2city.netlify.app



wtfhhh hahhahhhhh

This is not even a word though lolll

网状 is happening

i多娘 know

That's Japanese LOL

holaaaa

НАННАНААha

konnichiwa

I love the fat face lol

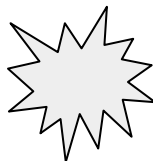
啊啊啊啊啊

HELLOOOOOOOO!!!

konijiwaa

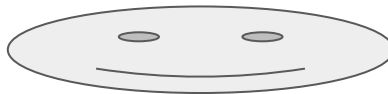
HI

Привет всем лол



heyyyyy

hahahha



What does this meean

Hope it works noww, oh! yaay'

omgggggggg hhhhhh



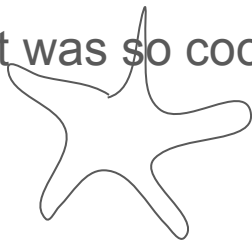
Hi everyone lol



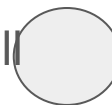
Bruh
i love
that
shah
ahha
ahha



But that was so cool!!!

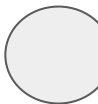
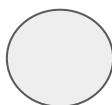
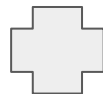


how can u type chineseeee lolll



niceee
ee

can you see this



Hellooo

Yesss i just swapped it into english is it helping??

And we'll go to the website, quickly introduce the welcome page & intro then show them how it works hehe