A WORLD WITHOUT BEES

100 WORDS:

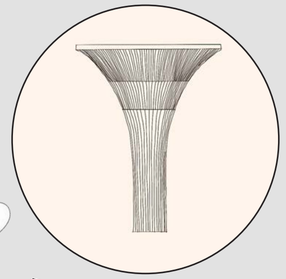
I believe my project “A World Without Bees” would be a strong competitor for the Innovation Practice & Process Award. The project explores sustainability through design by increasing the bee population at Carclew, a Grade II* listed site with historical links to beekeeping. Using biomimicry-inspired glulam structures with timber cladding and ETFE, the design generates heat for bees, collects rainwater and protects the heritage building by remaining separate from it. The project is highly experimental, ethical and environmentally focused, carefully considering sustainability, materiality and future dissemble without damaging the site, whilst using the site as a stage to show how organic design can bring new life to a historic site.

PROJECT INTENT:

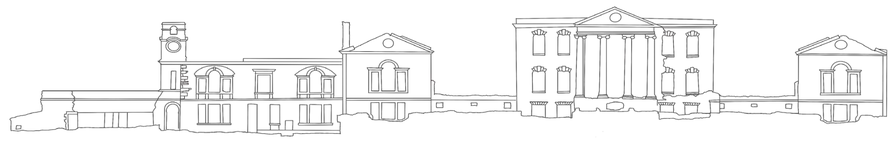
Have you ever wondered what a world without bees would look like? The answer is propably no! Bees are vital to our local ecosystems and are a key group that help shape the health of our local areas, without them would be detrimental to life on our earth. Every year 1.3 trillion bees die globally leaving them an endangered species that humans seem to ignore. How many people do you know that have killed a bee? On average most humans have met at least one person who has killed a bee without relising the on going effect this will have on the environment. The simple fact is, we need bees and we should be protecting such an important part of our ecosystems. The intention and innovation behind this project is to encourage the natural ecosystem at Carclew, by improving the quality of live for bees and increasing their population. I am proposing that as a part of the adaptive reuse of the site Carclew to repurpose it as a bee sanctuary, which would be an innovative and sustainable solution that will have an impact on the local area. A bee sanctuary would keep the neighbours happy as there would not be traffic. From the site visit I remember one of the owners Mandy stating that “Carclew has always provided” in reference to how the site has provided refuge for Austrians during World War II and other occasion. For this reason I believe Carclew can once again provide for the community but as a bee sanctuary.

PRESERVE

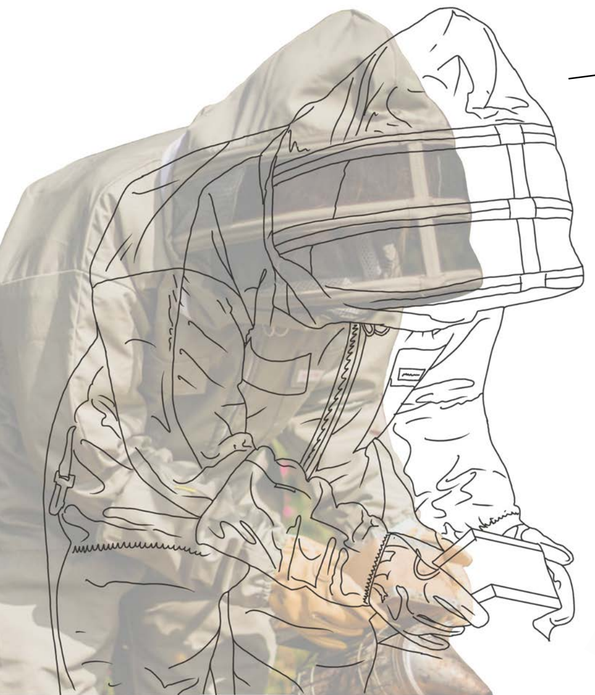
INNOVATION



ENCOURAGE

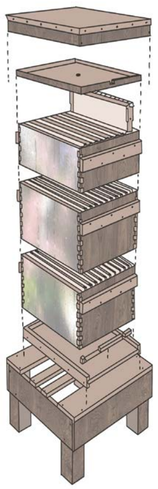


BEE HIVE STRUCURE:



“The bee is more honoured than other animals, not because she labours, but because she labours for others.”

Saint John Chrysostom



ROOF

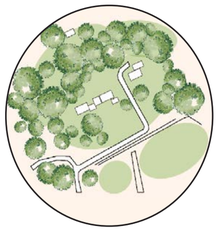
HONEY SUPER

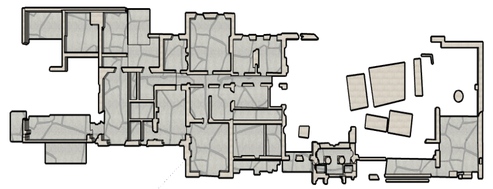
BROOD BOX

FLOOR

BASE

LOCATION:





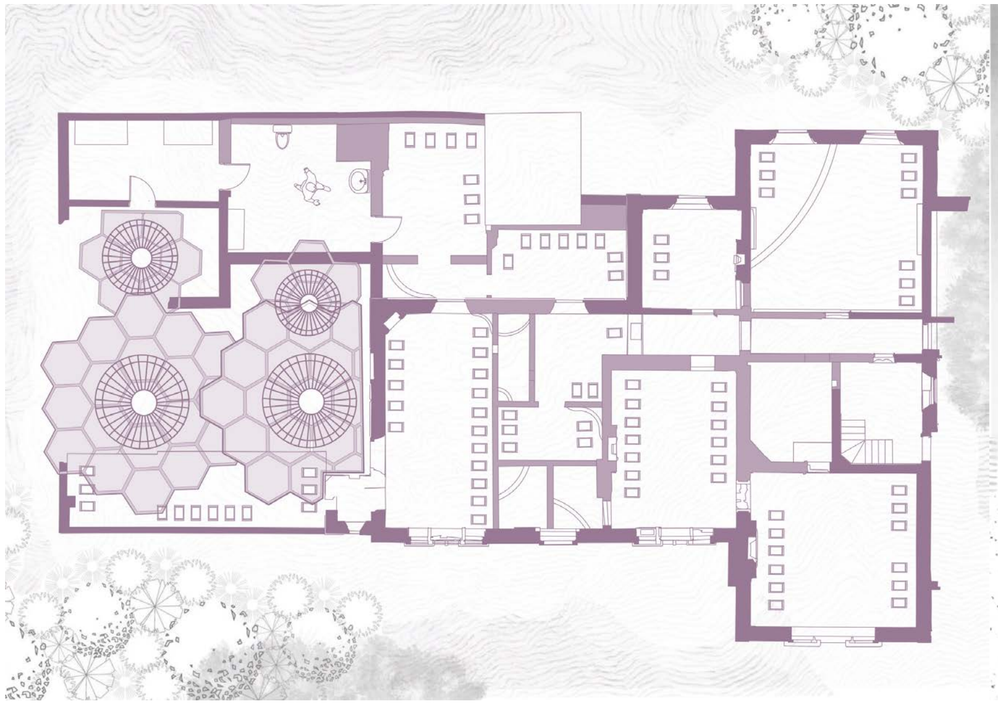
West Extension - Less Value:

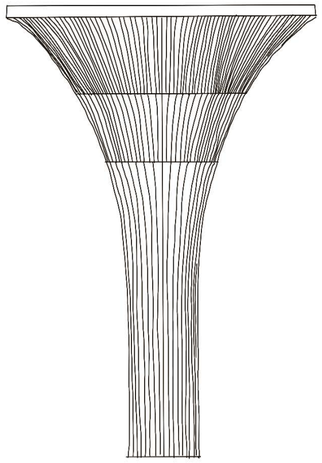
When conducting the site visit the West Extension of the building is mainly stable and is currently being reinforced. I was able to walk around a good section of it and it gave me a very good visual of how the original structure looked before the fire.Many took us to a small section where she explained to us the historical and cultural contect of the site.In this area there is timber reinforcing certain parts of the structure like the windows. From the angle where I was standing, I got a clear view of how unstable certain parts were such as the chimneys. An important fact to mention, Mandy does educational tours in this area to teach the history of the site. This section was also used for refuge for people fleeing Austria during World War II. “Most buildings are resilient.They can accommodate change, they can evolve, expand, contract; they can adapt as the needs and priorities of those who occupy them become different.”Brooker & Stone 2018

PROCESS:

B.J. Sheriff, a respected bee suit design company located near Carclew, has an interesting origin story, which I personally heard from the current owner during an interview I conducted. Originally, the owner recalled that her father, the creator of the compact, started off as a lingerie manufacturer; it was a family-run company that underwent a major pivot in careers when the founder developed an interest in bee hives, especially as Marks & Spencer had been pushing this family out of the market at the time. Her father quickly became fascinated with bees and soon operated over 400 hives. He remarkably discovered that the lingerie materials made ideal fabric for bee suits as the texture and breathability didn't irritate the bees, making stings less likely. Furthermore, the founder was also an advocate for women's rights; he personally chose to make a, for the time, "radical" decision in the 1960s to give equal pay to his female employees, and told his daughter ", If you want a job done, ask a woman." I also discovered that prior to his death in 2022, he collaborated with Falmouth students to publish an autobiography discussing his company's unique past, which was titled "The Bras and the Bees". His creativity still lives on today through his daughter, the current owner, who is actively working on suit designs and sharing their story.

During the visit, she kindly explained the interior structure of a hive, the roles of the queen, worker bees, and drones, as well as the increasing threat of Asian hornets coming from France through Kent. Asian hornets have a brutal 7mm sting, in comparison to a bee's 3mm sting, and they practise a predatory strategy called "hawking", in which they wait outside hives to pick off bees in flight. Also, unlike bees, which have a single queen per colony, Asian hornets can have up to eight; this is a factor contributing to their rapid spread and horrid impact on native bees. Inspired by this information I began to innovatively design biomimic structures that helped protect bees. At the heart of my idea is a design for bee hives featuring flexible poly-glass viewing panels, allowing local beekeepers to monitor hive health without disturbing the colonies. This small innovation aligns with the brief's require ment for sustainability and responsible innovation, ensuring the protection of the bees. They will be carefully placed within the ruins and surrounding fields; the hives will enhance pollination for the neighbouring farms and contribute to a resilient local ecosystem





DESIGN:

A lightweight pavilion extension is a key feature of the project, serving multiple environmental functions while respecting the historic importance of Carclew. It will collect rainwater into an integrated tank. The pavilion offers a flood-prevention strategy for the site. The structure also functions as a greenhouse, creating a warm, sheltered microclimate that supports the bees during the colder months. Surrounding this is a wildflower garden planted with native species, forming a foraging environment and transforming the site into a quiet ecological refuge. Importantly, the proposal is designed for locals and beekeepers rather than visitors, ensuring that Carclew remains protected from the pressures of tourism. I have prioritised local engagement and subtle architectural intervention; the design idea honours the site's history while ensuring a sustainable future.

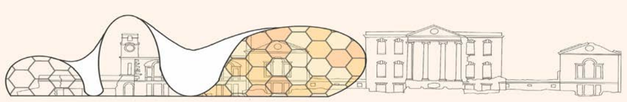
An innovative feature throughout the design is the use of flexible poly-glass tubes, which create pathways for bees to move freely through the building and connect various hive locations within different rooms. This encourages natural bee behaviour while incorporating the hive system into the architectural layout, resulting in a functional sanctuary. These elements create a design that prioritises the care of bees, sustainability, and user experience, all while respecting the historic fabric of the existing building. In the other section of the building, the design takes a lighter approach due to the structural instability of the site. Only a few beehives have been added here, allowing the area to contribute to the sanctuary without significant damage to the historic site. This strategy respects the fragility of the ruins while still supporting the project's overall ecological goals.By limiting interventions in this section, the design preserves the original structure's atmosphere. The placement of the hives creates minimal disturbance, allowing the space to retain its character as a historical ruin, ensuring that any additions are reversible and non-intrusive.

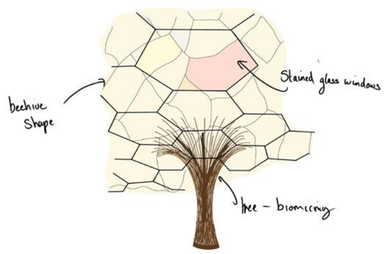
PROBLEMS:

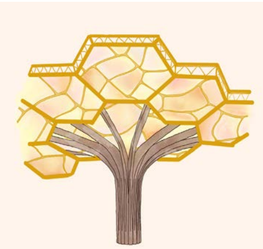
- Site is a Grade II* ruin, with historical importance
- Burned down due to a fire
- Has been stfripped of many materials after the accident
- The ground level is rising
- Nature has reclaimed the building, ivy is everywhere
- Needs tons of repairs
- The structure is unstable
- No work can be done on the west side due to its importance and damage
- The only access route, the road, is not owned and neighbours do not want large numbers of pedestrians

SOLUTIONS:

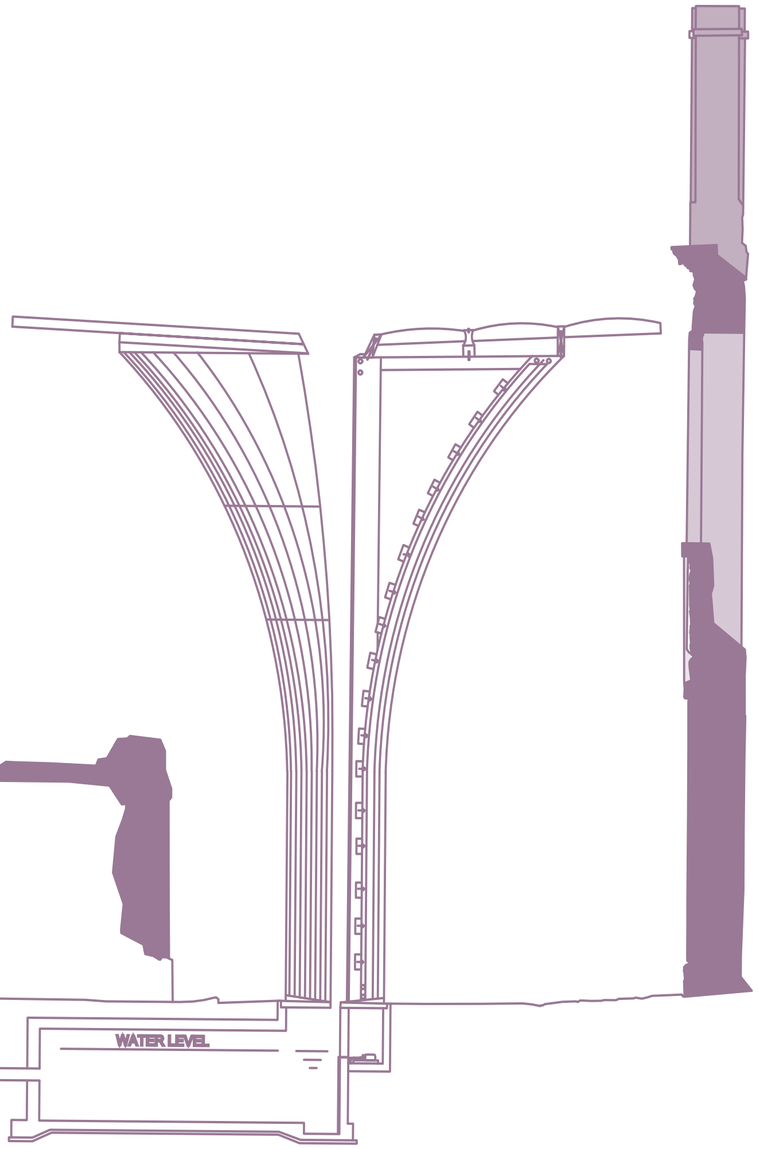
- I will be cautious and respectful of the listing
- Avoid areas that were heavily affected
- Use sustainable materials
- Work only on ground floor and not lower floor
- Incorporate the nature and history in design
- Repair areas I can
- Ensure that I design in a section that can be stabilised.
- Avoid the west side
- Create a neighbour friendly design with only one or two external visitors







MATERIALITY & DETAILS



SCALE: A3 1:100

TECHNICAL DETAIL:

One of the strongest design features is the tree-inspired pavilions, each constructed with timber and glulam. Their vertical supports mimic the form of tree trunks, allowing the structures to blend into the landscape. Using timber keeps the design organic, helping the pavilions feel like quiet extensions of the environment rather than intrusive additions to the ruin.The roof system of the pavilions is based on hexagons, directly inspired by the geometry of a beehive. This is a strong and efficient structural pattern. The hexagonal panels are crafted from stained ETFE, and as light filters through them, it creates a greenhouse-like atmosphere that helps maintain warmth for the bees while giving the pavilions character.More grass, wildflowers, bushes, and new trees have been added to support biodiversity. This wildflower garden also enhances the experience for locals and beekeepers who visit the site, creating a landscape that feels alive and connected to the sanctuary's purpose.Together, these design elements, the timber pavilions, hexagonal stained ETFE roofs, and wildflower garden create an environment that supports both the bees and the local community. They bring structure and life to the site while remaining respectful of the historic ruin and its natural surroundings. It will collect rainwater into an integrated tank. The pavilion offers a flood-prevention strategy for the site.

MATERIALITY:

One of my key inspirations for the project comes from the use of plants to recreate a natural, calming environment around the ruin. I approached this with the idea of working with nature rather than forcing a new identity onto Carclew by filling the site with a range of vegetation. The design encourages wildlife and helps the landscape feel alive again.Wildflowers and vegetation play a crucial role, as they provide a foraging ground for the bees in the sanctuary. Their colours, scents, and seasonal changes bring variety to the site while supporting healthy pollination for nearby farms and fields, whilst blending into the existing landscape. Timber is another major material in the project, and the pavilion's structure utilises timber supports that mimic trees, helping it blend with the landscape. With timber cladding added to parts of the structure,To create a greenhouse-like atmosphere in the pavilion, ETFE is used a colourful yet functional material. It adds colour and character to the light inside the structure while helping retain warmth during winter, keeping the bee colonies protected. Lastly, the project includes standard bathroom materials to accommodate beekeepers and local visitors. These materials are kept simple, ensuring they blend into the overall design without becoming a dominant feature.

OUTCOMES:

To conclude this document, I have included some images of my experiemntal model making and final renders. These were made using Sketchup. TwinMotion, Lumion, Photoshop and Procreate. Overall I am extremely happy with this project, the whole process I have loved from learning about “The Bras and the Bees” from BJ Sheriff’s to designing these organic structures that help the local environment. Bees really are a huge part of our world and sadly they are under threat of extinction, with 40% of bee species being endangered, and since the 1990’s 25% are yet to be seen, this is a global emergency, especially as none of these are the honeybee, which actually are well cared for, most of conservation efforts over-look solitary and bumble bees even though they are not docile and aggressive, they are highly unlikely to sting, with only female capable, they also do not live in large colonies or swarm like honey bees.
Despite their crucial role in our wildlife, bumblebees are often horrifically mistreated within agriculture. “In many commercial operations, colonies are used to pollinate crops, then sealed in their boxes and left to die, sometimes by starvation, sometimes in refrigeration, before being thrown away as “agricultural waste”. This treatment poses a threat to the health of wild bees due to the spread of diseases, and it also raises serious ethical concerns. Bees may be tiny creatures, but their impact is undeniable. Protecting them is necessary to protecting our ecosystems, food, and our future on this planet.