First Floor Educational Zone

1 : 200

N

Key Spaces

Repair Hub



Community Swap Space



Cafe



06 Learning from Waste:
A Waste-to-Energy Plant in Malta as a Tool for Raising Environmental Awareness

Drawing title: First Floor Educational Zone	**Scale:** 1 : 200
Author:	Julia Beata Hetmaniuk
Supervisor:	Francesca Zanotto
Academic year:	2025/2026

Technological Process

① **Unloading Hall**

Waste delivered by trucks is weighed and unloaded directly into the waste bunker through six unloading bays.

② **Waste Bunker**

Non-recyclable municipal solid waste is stored, mixed, and distributed by a bridge crane to ensure a continuous and stable feed to the combustion process.

③ **Furnace & Boiler**

Waste is incinerated in two processing lines, generating hot gases that heat water within the boiler system to produce high-pressure steam.

④ **Turbine Hall & Electrical Unit**

Steam drives the turbine and generator, converting thermal energy into electricity, which is subsequently transformed and distributed within the system.

⑤ **Spay Dryer**

Acidic pollutants generated during combustion are neutralised as part of the flue gas treatment process.

⑥ **Baghouse Filters**

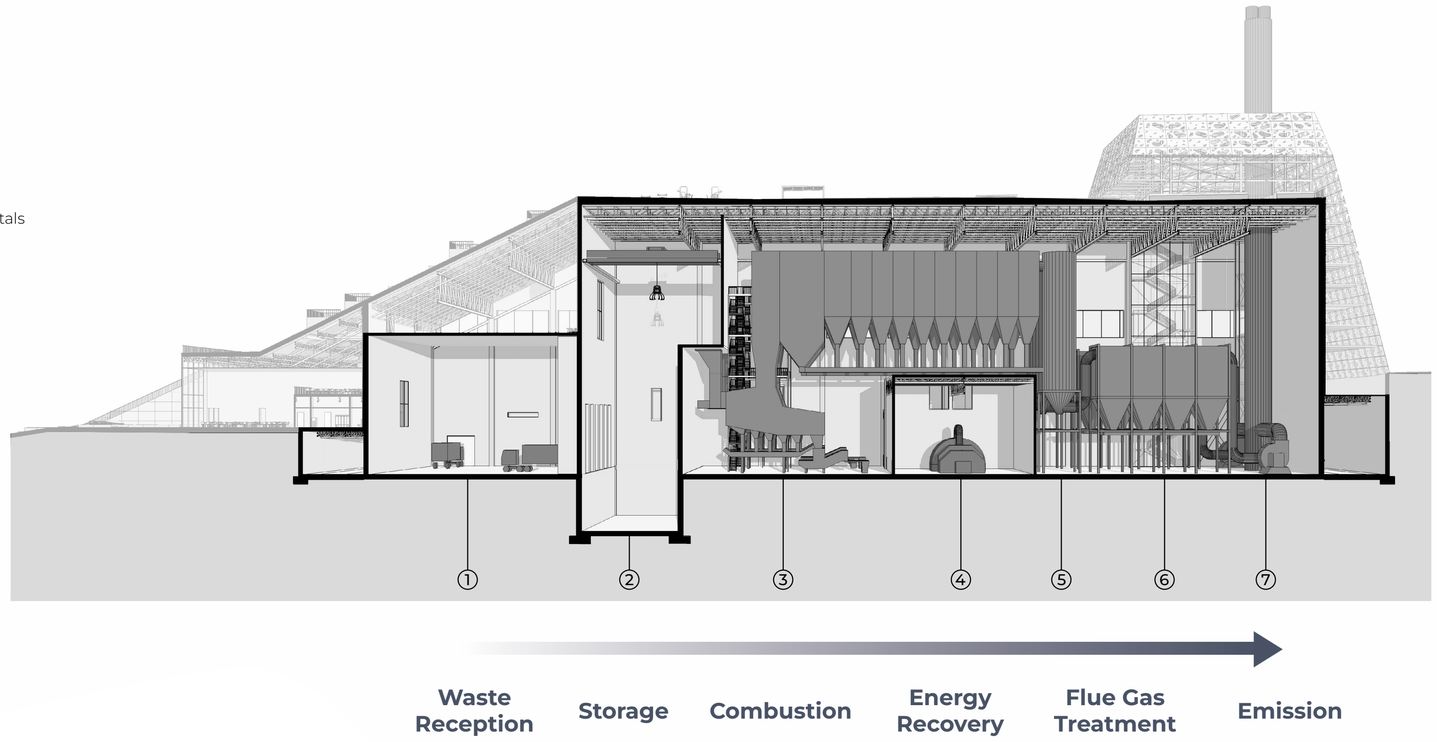
Fine particulate matter is captured before emissions are released, ensuring compliance with strict environmental standards.

⑦ **Induced Draft Fan System & Chimney**

Cleaned flue gases, consisting primarily of carbon dioxide, water vapour, and nitrogen, are released into the atmosphere through the chimney stack.

By-products:

- CO_2
- Bottom Ash
- Fly Ash
- Recovered Metals

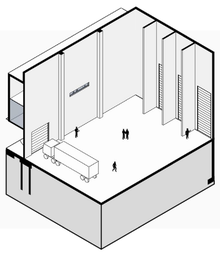


Educational Path

While waste is transformed into energy, visitors undergo a parallel journey - from observation and confrontation to understanding and reflection. Each stop reveals a different stage of the system and encourages a deeper understanding of the consequences of everyday consumption.

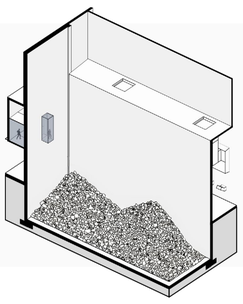
① **Constant Flow** | Unloading Hall

The journey begins with a view of the unloading hall, where visitors observe the continuous arrival of waste. Real-time data on incoming trucks emphasises that waste generation is not an exceptional event, but a constant part of everyday life.



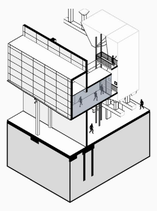
② **Confrontation** | Waste Bunker

Visitors are confronted with the physical reality of waste through a cantilevered balcony suspended above the waste bunker. Scale, proximity, sound, and movement transform passive observation into direct experience, while views into employee workspaces expose the human labour behind the system.



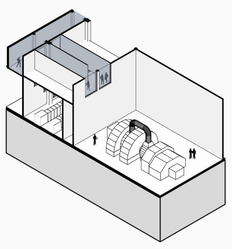
③ **Point of No Return** | Furnace & Boiler

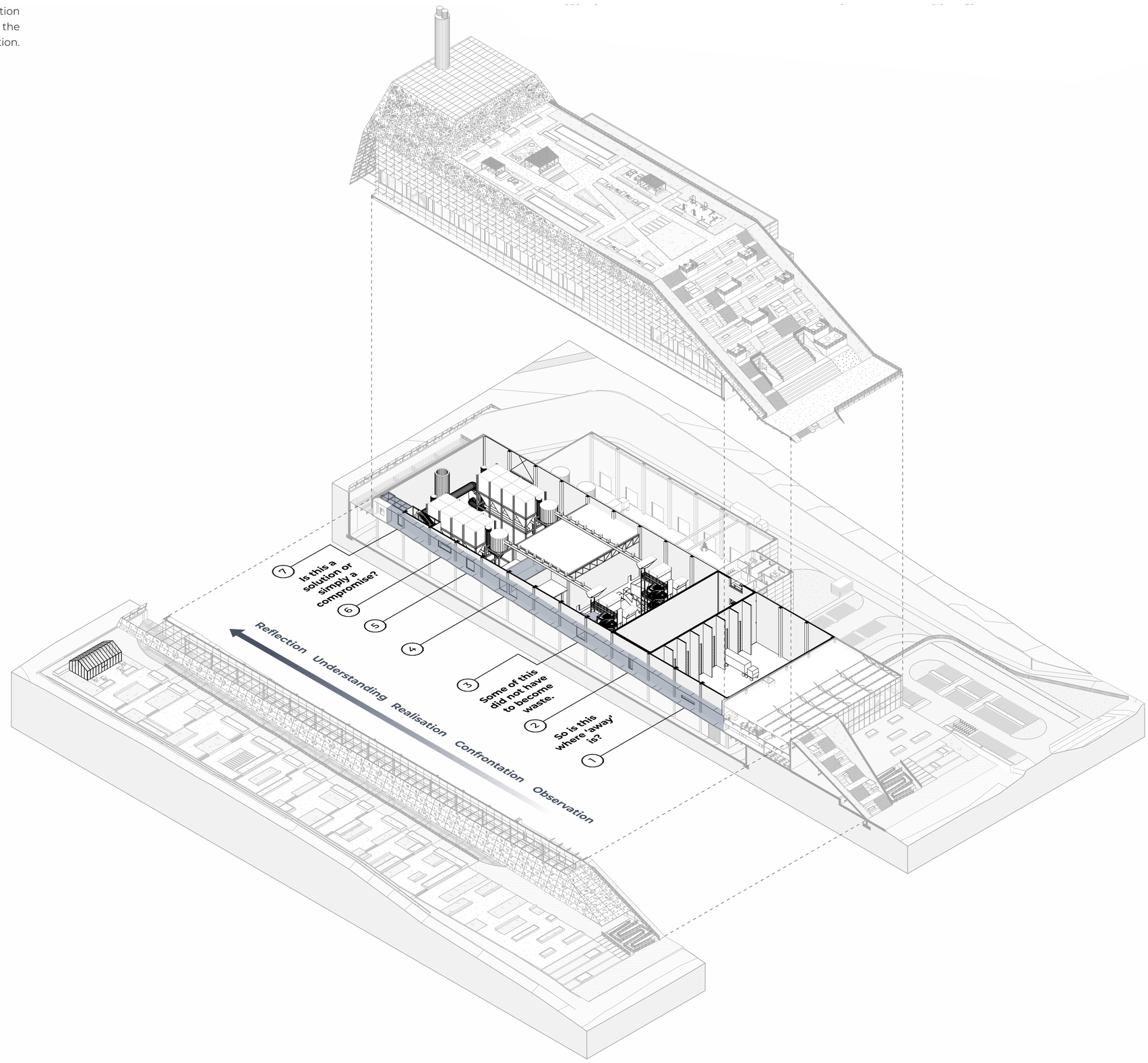
The furnace marks the irreversible end of a material's lifecycle. Through direct observation of the combustion process and the statement "Some of this did not have to become waste," visitors are encouraged to reflect on the consumption choices that led materials to this final stage, as well as the lost opportunities for reuse, repair, and prolonged circulation.



④ **Transportation & Distribution** | Turbine Hall & Electrical Unit

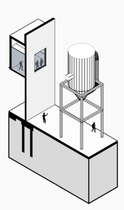
Visitors witness the transformation of waste into usable energy through views of the turbine hall and electrical unit. The scale and sound of the machinery make the process tangible, while the spatial sequence reveals two distinct stages of the Waste-to-Energy process: energy transformation and its subsequent distribution.





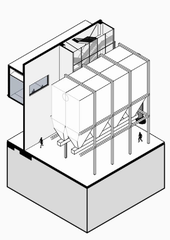
⑤ **Purification** | Spray Dryer

The spray dryer introduces the systems responsible for reducing harmful emissions. This stage shifts the focus from energy production to environmental protection and technological responsibility.



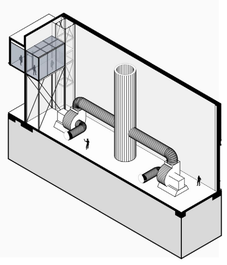
⑥ **Filtration** | Baghouse Filters

Visitors observe the filtration system responsible for removing pollutants from flue gases before their release into the atmosphere. Beyond the technical process, they are introduced to the principles of circularity through the reuse of industrial by-products. This idea culminates in the adjacent greenhouse, where captured CO_2 supports the cultivation of local fruits and herbs, transforming resource recovery into a tangible experience that visitors can directly engage with.



⑦ **Final Reflection** | Chimney

Visitors arrive at the final viewpoint overlooking the chimney. Accompanied by the question "Is this a solution, or simply a compromise that allows us to avoid changing our choices?", the space shifts the focus from technology to personal responsibility. The journey concludes not with an answer, but with an invitation to continue reflecting beyond the boundaries of the facility.

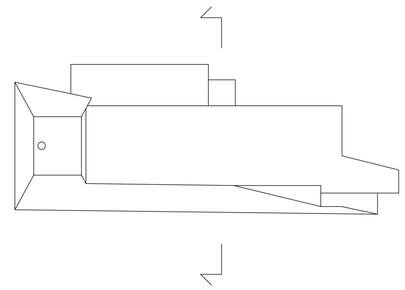


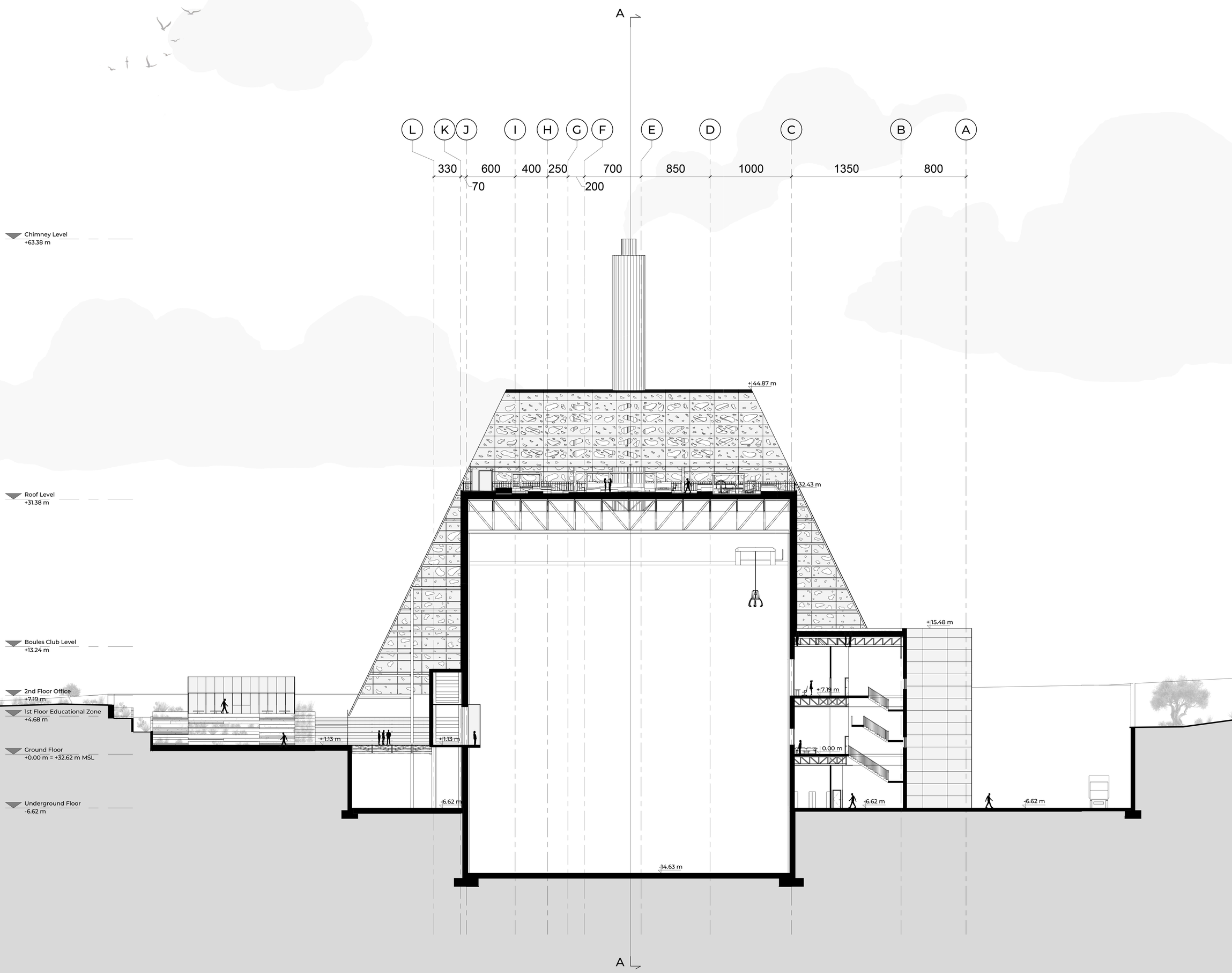
07 Learning from Waste:
A Waste-to-Energy Plant in Malta as a Tool for Raising Environmental Awareness

Drawing title: Technological Process and Educational Path	**Scale:** -
Author:	Julia Beata Hetmaniuk
Supervisor:	Francesca Zanotto
Academic year:	2025/2026

Section B-B

1 : 200





08 Learning from Waste:
A Waste-to-Energy Plant in Malta as a Tool for Raising Environmental Awareness

Drawing title: Section B-B	**Scale:** 1 : 200
Author:	Julia Beata Hetmaniuk
Supervisor:	Francesca Zanotto
Academic year:	2025/2026

Second Floor Office

1 : 200

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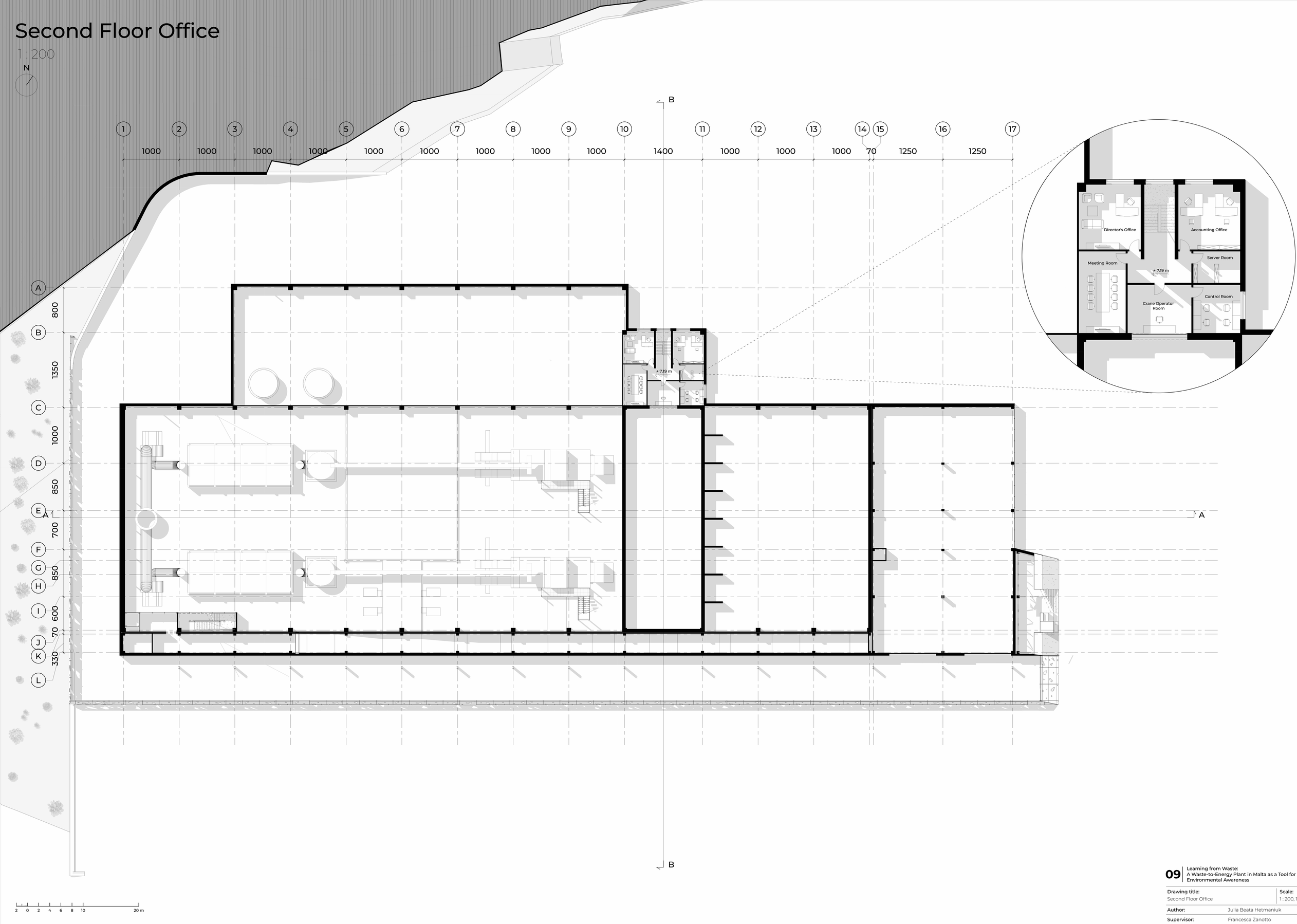

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09 Learning from Waste:
A Waste-to-Energy Plant in Malta as a Tool for Raising Environmental Awareness

Drawing title: Second Floor Office	**Scale:** 1 : 200, 1:100
Author:	Julia Beata Hetmaniuk
Supervisor:	Francesca Zanotto
Academic year:	2025/2026

Boules Club Level

1 : 200

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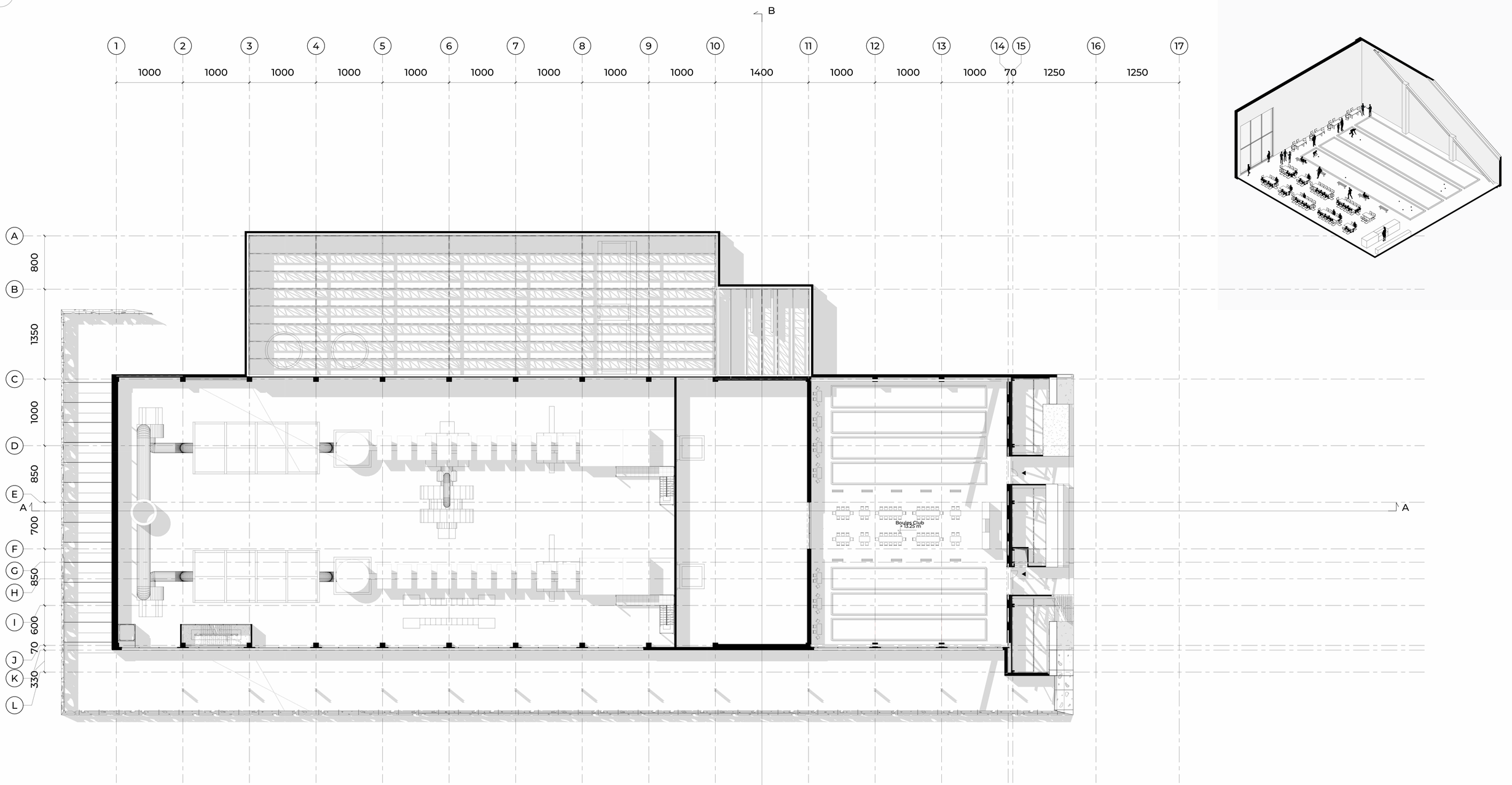

Key Space

Boules Club

10 Learning from Waste:
A Waste-to-Energy Plant in Malta as a Tool for Raising Environmental Awareness

Drawing title: Boules Club Level	**Scale:** 1 : 200
Author:	Julia Beata Hetmaniuk
Supervisor:	Francesca Zanotto
Academic year:	2025/2026

Roof Level

1 : 200

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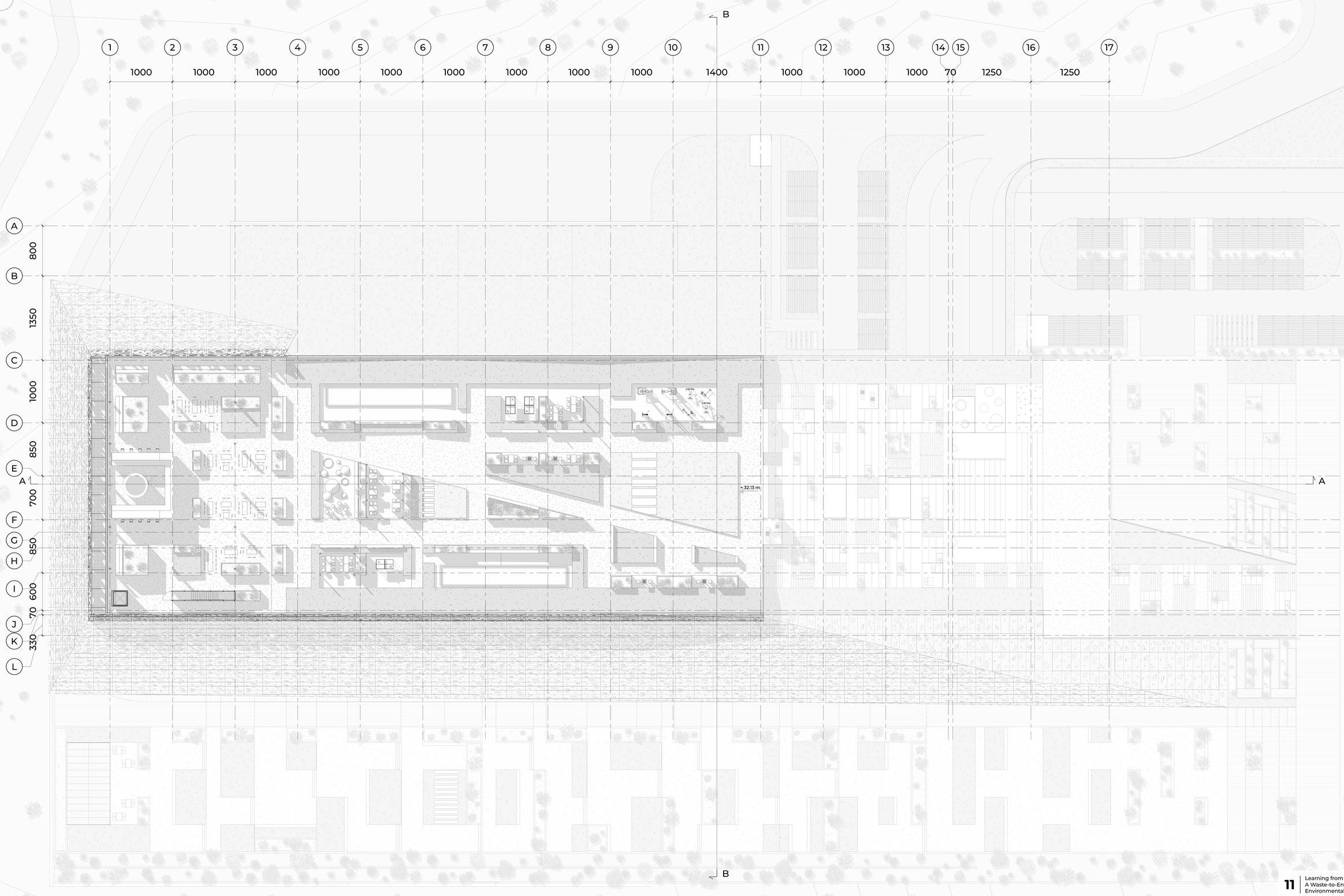

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11 Learning from Waste:
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Drawing title: Roof Level	**Scale:** 1 : 200
Author:	Julia Beata Hetmaniuk
Supervisor:	Francesca Zanotto
Academic year:	2025/2026