The destructive impacts related to climate change are increasing. A link seems to exist between these impacts and the way in which we form our built environment. Yet, there seems to be an inadequacy to adapt accordingly, a collective repression of the ongoing shift. This layer of repression is occasionally punctured by flashes of startling awareness, when spatial disturbances are formed, stirring us momentarily. During these periods we feel the environmental transformation. That which was once homely and secure becomes hostile. The project aims to harness these uncanny glimpses of awareness as a tool. It seeks to explore a scenario in which architecture adapts to the impacts of climate change by exposing their existence, and addressing the existence of such layer of repression, possibly contributing to its undoing.

"Uncanny rises from the transformation of something that once seemed homely to something decidedly not so."
- Vidler on Freud's interpretation of Schelling, in The Architectural Uncanny

According to Vidler’s reading - there were three historical manifestations of the Uncanny.

1. **18th Century**
   - **The Contrast between a safe and homely place and the intrusion of an alien presence**

2. **19th Century**
   - **When the city became a metropolis**
   - The alienation felt by the individual towards the radically changing environments

3. **Peak during the late 1980's**
   - Architecture plays a critical role; stirring and exposing ‘hidden’, ‘authentic’ layers in space, one that are otherwise hidden

According to the project’s reading, we are currently experiencing the 4th.

**IV - The Uncanny of Climate Change**

"Uncanny rises from the transformation of something that once seemed homely to something decidedly not so."
- Vidler on Freud’s interpretation of Schelling, in The Architectural Uncanny

**Conceptual exploration**
- Environments carrying the imprints of the impacts of climate change. As an alternative to our symptomatic, standard reactions - What if our cities would have been adapted, shaped by a reaction to these impacts in a way which exposes their existence?

**Conceptual models, physical. Sponge and cardboard.**

**Accumulation of spatial disturbances.**

**Gradual spatial transformation.**
**Solar Radiation**

Reduced outgoing heat radiation

**Anthropogenic Heat**

Reflecting solar radiation

Weather patterns are shifting, the climate is changing and the environmental conditions are becoming harsher. The two most severe impacts in our local context are urban flooding and the increasing heat in urbanized areas, as determined by the Tel-Aviv-Yafo’s Climate Change Preparation Plan, 2020.

Most reactions are symptomatic, underground and thus under-consciousness.

The rain, a symbol of prosperity, a blessing in a desert land, becomes an unwanted and menacing presence.

Urban deserts of concrete are especially susceptible to urban flooding, as they lack permeable soil.

They also generate urban heat islands due to their physical characteristics.

**Gradual Environmental Transformation**

Al-Bassa and its surrounding area in Jaffa were once a seasonal pond, a swamp, and are now an urbanized area covered in concrete and asphalt, that absorbs and emits heat. It is an area to which runoff water from across the Jaffa Basin drains and accumulates.

**Jaffa’s Swamp**

Al-Bassa and its surrounding area in Jaffa were once a seasonal pond, a swamp, and are now an urbanized area covered in concrete and asphalt, that absorbs and emits heat. It is an area to which runoff water from across the Jaffa Basin drains and accumulates.

**Urban desert, large swathes of concrete, generating a urban heat island and preventing rainwater absorption.**

This area’s natural and man-made characteristics make it susceptible to two major climate-related impacts - the increased heat in urban areas and urban flooding. Those impacts are projected to escalate as the climate gets warmer, as our cities expand and as we cover the remaining permeable soil.

**Jaffa’s Basin, Urban Basin number 08**

Water drains to the lowest area, Al-Bassa.

The underground drainage system fails to drain the water in time - the result is urban floodings, projected to increase both in frequency and in magnitude.

Using the Rational Method for design flood events to calculate runoff water volumes in various scenarios.

**Most to east elevation profile of edges and depressions**

Jaffa as portrayed in one of David Roberts’ paintings, 1839. A hint for the dry alluvial plain to the left of both Tel Yafo, which lies on the kurkar ridge, and the continuation of the ridge in the foreground. Burke, p. 98

Dry Alluvial Plain

**Jaffa’s Ancient Inland Harbor:**

Historical, Cartographic, and Geomorphological Data, by Archeologist Aarom Burke and his team, 2017

**Jaffa’s Swamp**

**Drainage Network Analysis**

**Shade Index**


**General Data, Jaffa Basin (08)**

<table>
<thead>
<tr>
<th>Event</th>
<th>Runoff Volume [m^3*24hrs]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainfall Intensity, I = 150mm event</td>
<td>570,911</td>
</tr>
</tbody>
</table>

**Example:**

Rainfall Intensity, I = 150mm event

Peak discharge (runoff volume) [m^3*24hrs] = 570,911

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Using the Rational Method for design flood events to calculate runoff water volumes in various scenarios.
The area is redesigned as an 'urban sponge' that absorbs and mitigates the destructive impacts that the area currently generates and suffers from.

Strategy: Adapt and Expose

The proposition consists of several major actions. Firstly, the liberation of the ground. Peeling off and disposing of major hindrances such as parking lots, ramshackle commercial buildings, and asphalt roads.

Secondly, remodeling the surface area. A series of stereotomic actions conducted on the ground surface create paths to divert the water to the heart of the basin.

Thirdly, reimagining the future plans within the intervention area. They will be summed and replanned in an urban grid, in an attempt to mend and stitch together the unraveled urban fabric.

The water is used to support the green infrastructure introduced to the area. It cools and shades the urban fabric, thus mitigating the heavy heat generated in urbanized areas. The sponge is an urban area capable remaining unharmed even when flooded – it makes use of the stormwater runoff to indirectly mitigate the impacts of excessive sun radiation. The whole area is molded to lead and contain the water flowing in the basin during varying scenarios, such as everyday rain, normal cloudbursts, as well as extreme precipitation events.

Further from the waterpaths, on streets devoid of them, where trees aren’t planted, the built mass itself deforms in order to create shade.
The unhomely erupts within the homely, spatially reflecting our environment's status. Extreme Cloudburst (~150mm, 24 hrs) and Normal intensity rain event (~10mm, 24 hrs) can occur. Cloudburst (~65mm over 24 hrs) deforms and dissolves the built environment along and above the water paths, letting the water pass, and creating shaded outer spaces.

South North
Extra, artificial shading systems

Pedestrian trail
Irrigated, green spaces
Motorway, cycling and pedestrian combined, permeable paving

Typology
The planned elements in the vicinity, including the built mass, are designed to provide large patches of continuous shade over the public spaces, allowing it to maintain its function even during the warmer days of the coming future. The blocks' orientation aims to shade the public space, as well as provide the most optimal conditions for the indoor spaces, with stretched out Northern and Southern sides.
"The Uncanny is something which ought to have remained hidden but has come to light."

- Vidler's read of Freud on Schelling, The Architectural Uncanny

Disturbance's climax calls for the most prominent spatial reaction. The area is adapted to mitigate and co-exist with excessive heat and urban floodings.

Basin's Bottom, Revised

In this area, the buildings act as an integral part of the ecosystem, complimenting the shade produced by the trees, and creating "shade pools" over the water pools.

The result is an adaptive urban environment, capable of coexisting with the impacts of climate change while exposing their existence.

The project raises the possibility of using spatial tools to create architecture that adapts to the changing conditions presented to us by reality as well as shape consciousness, enhancing the connecting between humans and their surroundings.