

TINKER PROJECT

Designing a waste-recycle facility

<https://competitions.uni.xyz>



Img 1: Cairo city stuck in the amount of waste it produces

Premise

It is difficult to find a more fundamental issue than solid waste management. It is a critical matter of public health, environmental quality and economic development.

As the world urbanizes, the challenge becomes more acute, as **more people means more garbage**. Cities all over generate roughly 1.3 billion tons of solid waste per year which is expected to [increase by 70% in 2025](#).

While large metropolitan cities are trying to figure out strategies to manage their garbage production, people of **Manshiyat Naser**, have been mastering the '**resist throwaway culture**' for decades. **Zabaleen** -a derogatory term for garbage pickers, collect waste from the Egyptian capital, Cairo and carry it back to the neighborhood. Contrary to the usual stigma, their belief is that they are serving a higher purpose by helping others and making the world a better place for all.



Img 2: Almost every roof and street of Manshiyat Naser filled with refuse of Cairo

Garbage city

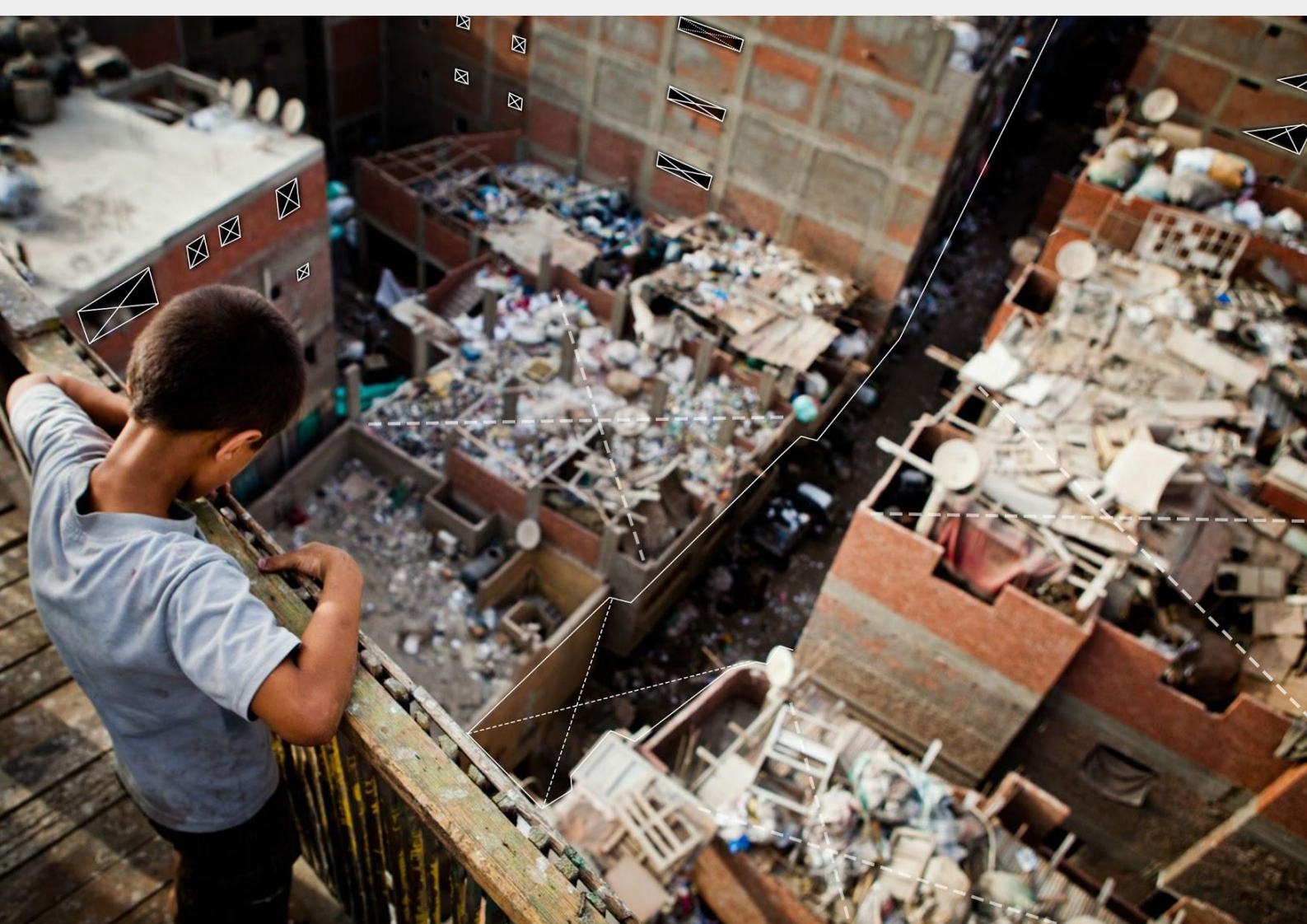
Manshiyat Naser or famously known as '[garbage city](#)', is notable for having nearly every space **covered in garbage including streets and rooftops of the settlement**. Zabaleen have been bridging the gap for the lack of efficient waste collection system in Cairo for almost 70 years.

The origin of Zabaleen can be traced back to 1940, in which farmers from north Egypt migrated due to poverty and crop failures. They later turned into waste collector and recyclers of Cairo, which turned out to be more profitable.

Zabaleen go door to door for a small fees to collect waste from the city which is transported via trucks or donkey carts. The collected refuse is sort manually by the entire family into recyclables/ non recyclables.

Although the process is antiquated on its face, the efficiency of the Zabaleen is remarkable: Almost 90% of the garbage is recycled which is four times of most western recycling companies.

The Zabaleen might be fuelled by necessity, but they possess valuable lessons to teach those of privilege.



Imq 3: Garbage covered city leaving no space for light to penetrate or provision of fresh air

Issue

Manshiyat Naser is the sight of the city that nobody wants to acknowledge. The slum has been lost in the turmoil of refuse of the entire city.

The living condition of the Zabaleen is far from ideal: Poor air quality, trash scattered throughout the city, on the streets, in city's corner, and even on roofs and high-rise buildings. The pyramids built with the refuse of the city, blocks the natural light and ventilation.

Moreover, the zabaleen are often treated with disgust and discrimination because of the poor kept condition of their ward.

Why is that the people who are responsible for keeping our cities clean are themselves living in the worst possible conditions?



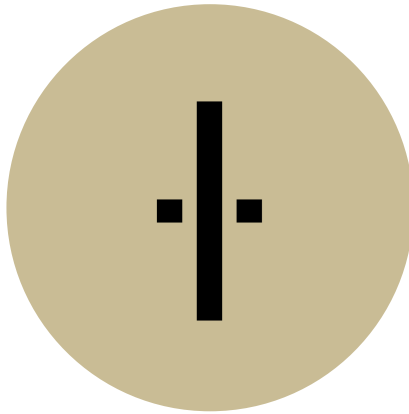
Img 4: organic waste wrapped together to be disposed to landfill or for compost

Brief

The slum dwellers of Manshiyat Naser have been neglected and disappointed by the policy makers and are in desperate need for agencies to make a notable change.

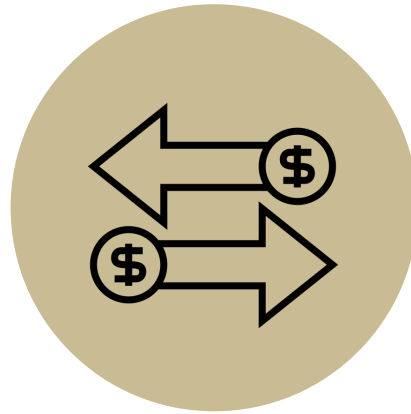
Challenge: Design a waste management- recycle- facility, which provides the provision of reselling and bartering the recycled and reinvented products.

The designed structure should act as a source of **interface between the scavengers living in Manshiyat Naser and city dwellers living in close proximity**. Establishing a positive reinforcement to sensitise people about the amount of waste generated in cities and how recycling is the solution.



Inclusive

Bridging the social barrier
between cities and slums



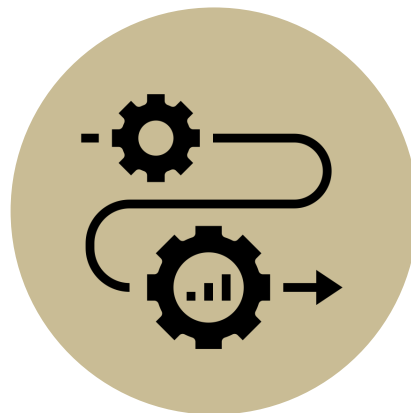
Commerce

Generates economy for
zabbaleen



Landmark

Iconic design that attracts different
user groups and spreads awareness
about excess waste production.



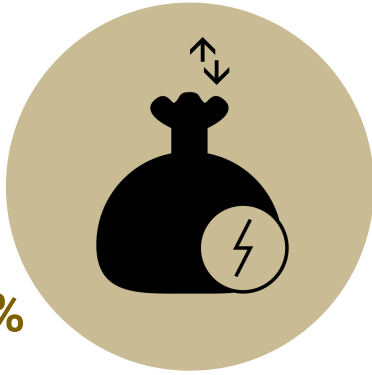
Cost effective

Should involve least economic
resources while having the
most impact

Objectives

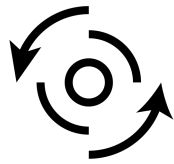
Building a structure that helps the people of Manshiyat Naser improve the standard of living and gain social equality. Since the entire slum works in garbage collection/sorting/recycle, the designed structure should have provision to house atleast 7000- 7500 vendors.

50%



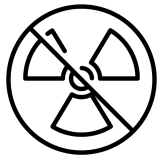
Waste sorting unit

Segregation of recyclable and non-recyclable



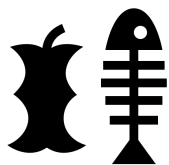
Reuse/ Recycle

- Waste used by the ward.
- Waste that can be compressed and cold.



Toxic waste

To be separated and sent for filtration



Organic waste

- Send to the compost and fed to pigs (common practice)
- Landfill or leachate treatment



Repurpose

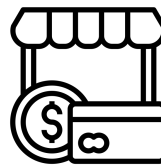
Workshop for repair, handicrafts, giving second chance to the discarded material

50%



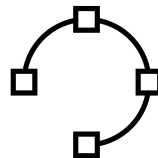
Re-selling unit

Informal/formal btw slum dwellers and city dwellers



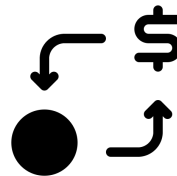
Shops

Space to sell the recycled as well repurposed things



Exhibition

Space for open flea and to bring awareness about the amount of waste produced



Barter stops

Space to exchange discarded products for money or repurposed things.



Drop off

Space to donate old or discarded items.

Programmatic Outline

Following departments can be considered as a base to develop the waste management facility. The programmatic features are in no way exhaustive; participants are encouraged to add as many functions as the design requires.



Manshiyat Naser, Egypt

Egypt is a place known for its rich history, colossal monuments, landscaped garden and for its extreme poverty stricken areas- like Manshiyat Naser.

It is a slum sandwiched between garden city and uptown Cairo, covering 5.54 square kilometre area with a population of 262,000 of Egypt's poorest inhabitants (mostly Coptic Christians)



Ima 1: World in conflict - 18th and 19th Century

Site Plan

The site is located between the city and slum area for easy accessibility of different user groups. The close proximity to primary as well as secondary and tertiary roads adds to the approachability. The site is located in a horizontally densified area leaving very little area for green spaces. To tackle this issue the the permissible ground cover has been kept low.

FAR 4.8 | Site Area: 11,220 sqm | Ground cover 30%

Coordinates: [30°01'51.3"N 31°16'05.5"E](#)

Guidelines

You have to deliver an architectural outcome on the following site, based on the given outlines.

- Recommended number of sheets/presentation images/boards:

5 (Five) of size [**2362px x 3544px**] or [**400mm x 600mm in 150 dpi**] in portrait digital format (**JPEG only**).

Minimum 3 (Three) & No maximum sheet limit. Each image should be less than **15MB**. (Do not submit PNG format)

Minimum requisite submission are sheets/boards + Cover image containing:

- Site plan (Compulsory)
- Key conceptual sections x 1 (Minimum)
- 3D views x 4
- Cover image / Thumbnail of size 2000px x 1000px or larger in aspect ratio 2:1.
- Answering 6 FAQ's #
- This is the link for new file sizes, [here](#).

#The FAQ's have to be answered as instructed in the FAQ document in the 'additional resources folder'.

Deadlines

Discover the competition schedule and deadlines on the competitions page or on this link - [Schedule](#).

Resources

This competition contains additional resources that contains a set of files useful to complete the competition submission. This folder is made available on your profile dashboard automatically as soon as you register.

This additional resources folder of this competition contains: Submission Format files in PSD | AI | InDD, FAQ Questions, High Res maps, Sketchup Model of the site and CAD file of the site plan.

Rules

- + The competitions is open for **students and professionals** from all the disciplines of design.
- + The team limit for this competition is **4 members maximum per team**.
- + You can register more than one team but they have to be registered separately.
- + Ensure that the final sheets submitted **do not include your name or any other mark of identification**. Your submission is linked to your user account which stands as your identification.
- + This is a design **ideas challenge only**. There is no built commission/realization associated with the problem.
- + In case of publication in yearbook we will reach out separately for selected entries.

Pro-Tips

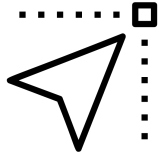
- + Use exploded views to discuss multi levelled conceptual models better.
- + Mention sheet number on corner of every sheet.
- + Plagiarism of any idea / form / design / image will be disqualified with a notice.
- + All the sheets or images will be viewed on a digital device. **e.g.** Laptop screen or projector. Uploaded sheets or images will not be physically printed for evaluation. The submission hence should be prepared for digital viewing only.
- + Submit JPEG images only. (PNG will not function)



Awards

Grants of up to a total of **20,000\$** can be won on this challenge. Learn more about the full conditions on the competition page [here](https://competitions.uni.xyz).

The entries will be judged by an international jury of the competition on the following criterions:



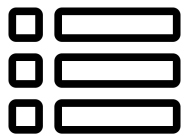
Presentation

The fundamental to a good entry is a good presentation.



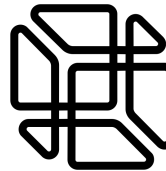
Concept/Idea

Quality of thought and intent in pre-design phase.



Spaces/Programme

How the spaces are calculated and ordered.



Design Outcome

The final architectural outcome of the solution.

Judging Criteria

The judging panel can also add other criterions based on their internal discussions - which will be in line with the problem statement. Participants are advised to fulfil above given criterions first in their design.

About

unfuse

Unfuse serves as a unit block for **Uni** in the field of Architecture. It intends to break the fusion of traditional design barriers and methodologies by making it a platform for experimentation and conceptual exchange of ideas in architecture, urbanism, society, culture and ecology. It is a research initiative dedicated to providing opportunities for designers from all domains to explore ideas that go beyond the boundaries of architectural discipline and enrich our built environment; thereby opening up possibilities for promotion of architectural thought at a global level.

Queries: support@uni.xyz

Discover other competitions: <https://competitions.uni.xyz>

Facebook: <https://www.facebook.com/unidesigntogether/>

Instagram: <https://www.instagram.com/uni.xyz/>

Discover FAQ's about this competition on our help forum here: <https://help.uni.xyz/>

Resisting the throwaway culture

Available on:
Institutional  AccessTM

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