SWIFT

# RETRO fit

**Bringing Modularity to Balconies.**

https://**competitions**.uni.xyz



Img 1: An image indicative of the urban density in housing in metropolitan cities. Source

# Premise

A rapidly densifying urban sprawl and the need to house an ever-increasing population has led to an explosion of mass housing schemata. Owing to a severe shortage of land resources to accommodate said housing, the housing tower sought vertical growth. As a result, the modern housing tower has become a collection of several replicated dwelling units, stacked vertically over one another.

Such replication: the one plan principle in housing has often resulted in the element of individuality being taken away from the resident of the house. The process of owning a house has thus transformed into a series of compromises for many dwelling in urban settlements rather than of aspirations being met. Primary among those, is the compromise of ***space.***



Img 2: An image of the example of 'layers' on a building in an apartment building in Shanghai. Source

# Urban Retrofit

## Layers in the City

The city that we see around us is no longer comprised of a single stock of the built and unbuilt. It exists in layers and strata. These layers added by the users to the bare built form owing to improperly planned (or unplanned) provisions and lack of space inside the dwelling unit are called Urban Retrofits. These broadly include AC units and webs of pipes and ducts we often see outside buildings. Along with the built form, they are reflective of the city's character just as much, if not more.

Precast construction technology has now slowly become more commonplace, helping to achieve economy of construction, time and cost. As a response to the growing problems of modern day housing specified before, several building elements can now thus be "retro"-fit over existing homes. Apart from enabling the resident to acquire such provisions economically, this also enables the user to exercise a degree of **additional control** over his home, apart from the basic unit sold to him. The balcony, is now one such element.



Img 3: An illustrative graphic of a balcony on a highrise in a megacity.

# Balcony

## What does it do?

As a space, a balcony is used for leisure, for services, as an elaborate vegetal container, a thermal break between the interior and exterior, and as a potent element impacting the elevation design of the building. Depending upon their size, they can be used to host several people for small gatherings or to serve as a perfectly intimate space for residents to engage with their immediate surroundings, or work. More so, vegetated balconies are even capable of forming their own microclimates.

Yet still, the notions with respect to what a balcony represents in a home, how it is constructed and how it is installed have remained more or less the same since the industrial age.



Img 4: A dense housing cluster in Hong Kong with closely packed units. Source

# Issues

- A good number of housing buildings curl unto themselves and have uneasy corners, rendering them unfit for the provision of conventionally planned balconies. Furthermore, a balcony is a rather necessary space attached to a room, an essential link between a room and its immediate exterior. For most residents, that can't be foregone, can't be substituted by mere view windows. However, it has now been commoditized as a luxury that homeowners have to pay extra for.
- Another issue is that with the modest housing unit shrinking, people often encroach balconies to enlarge the space available to them within the home.
- A contiguous RCC balcony is also one of the major sources of gain of warmth and coolth into the primary slab of the building, thus altering interior regulated temperatures if unshaded.
- As a building element, it is also consequential in enabling the resident to personalise his own extended space and exercise a degree of control. In many ways, the balcony inspires intervention. Housing constraints today, however, seem to have taken that away from the user.
- The primary issue however remains a lack of space in the balcony to carry out all the functions that it's essentially designed for. It thereby becomes essential to re-imagine fundamentals when it comes to the design of the conventional balcony.

**The question deemed to be asked here is: Can a Balcony in a house be more, mean more, and be less work for the homeowner himself?**



Img 5: An image illustrative of the volumes of intervention in a building with stacked balconies.

# Brief

**The challenge is to design and detail a retrofit balcony module that can be readily attached to both new and old structures.**

**Participants must also choose an existing built residential site where they wish to apply this retro-fit intervention.**

The design of the prototype balcony must reflect how it attempts to solve some or all of the issues stated previously, and more. It should push the boundaries of the utilities that we can derive from such a small ancillary space in a home, while at the same time tending to the elevational aspects of the site of intervention chosen.

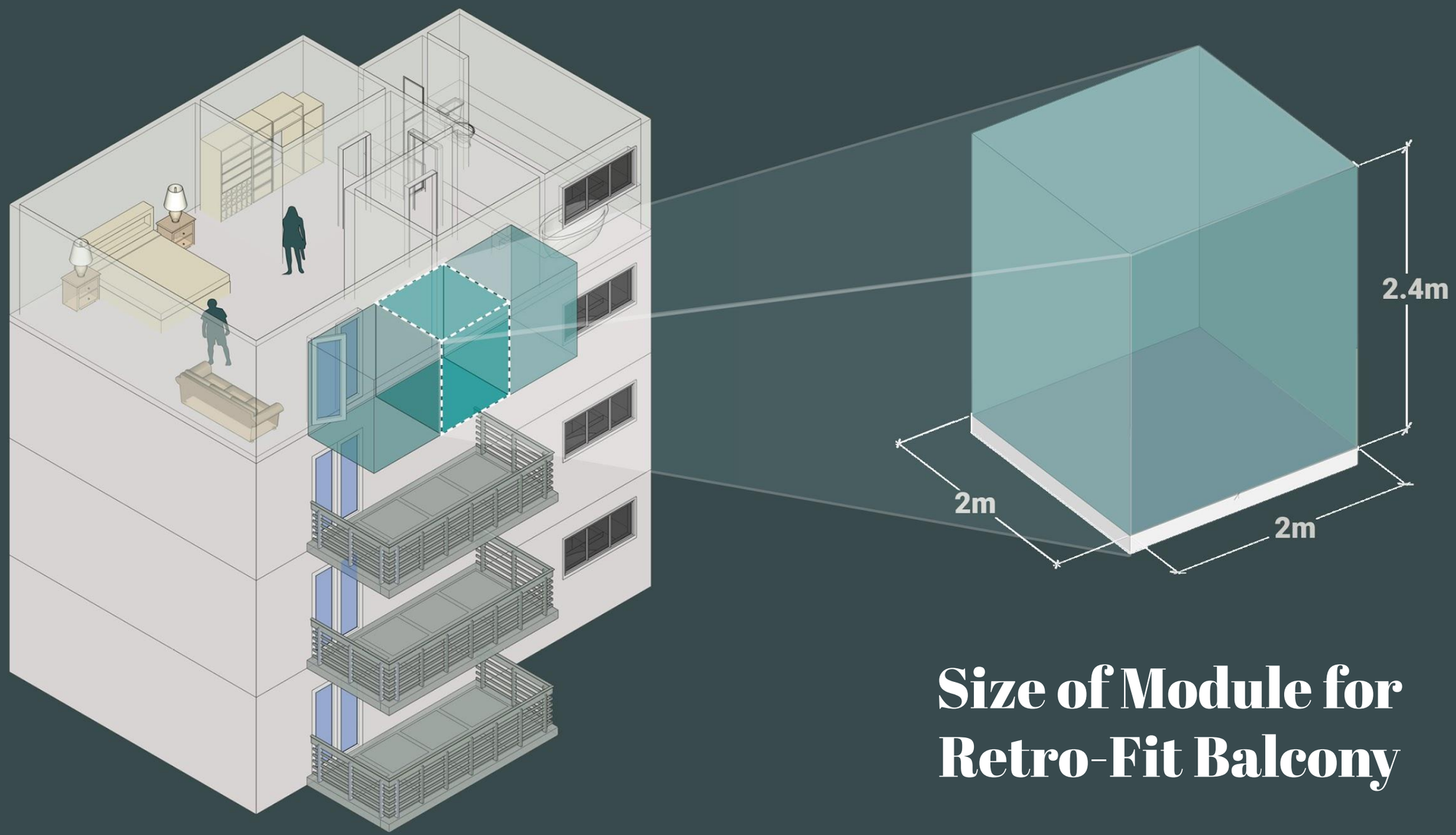
While rethinking the essential purpose of balconies and deriving more out of them to be made increasingly accessible and affordable, the design must be proposed as a kit of parts rather than a monolithic intervention. The design must incorporate a DIY aspect in terms of upgrades/add-ons allowing residents to **partly** engage in its application.




Img 6: Infographic for statutory restrictions on balcony depths in major cities across the world.

# Arriving at the Module for Intervention

The balcony as a building element has a number of regulations that it must adhere to with respect to its design in order to ensure structural and occupant safety. While all of these cities have close to no restrictions on the length of the balcony allowed outside homes, for both public and private projects, the depth of the cantilever is limited to the above numbers to avoid encroachment and tension in the structure. This data regarding legal regulations in some major cities across the world forms the basis for the selection of the size of module fit for intervention.




# Size of Module for Retro-Fit Balcony

Img 7: The size of the module for designing the retro-fit balcony. The housing building shown on the left is purely significatory in nature, showing the modular application of the retro-fit unit.

# Module

**Participants are required to design the retro fit balcony intervention in an adaptive volume/module of 2m x 2m x 2.4m.**

Further temporary horizontal extension of 300 mm is allowed for other purposes including shader, planters, drying rods etc. The design must also incorporate an aspect of safety, in the form of railings, parapets etc to ensure occupant safety. The design of the railing is left entirely to the participants, and as a response to the context of the site of intervention chosen.

## *Identifying* Opportunities *for* Intervention




### Under Construction



*// where the balcony design may be readily applicable by pre-cast technology //*

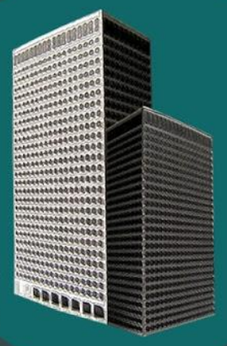
### Dilapidated Structures



*// where the user may be in dire need of renovation of the balcony/ building as a whole //*



### Blank Facades



*// where there is space for a balcony and the face of the building could be revitalised through the intervention //*

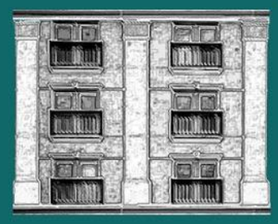
### Ghost Towers



*// housing towers rapidly replicated and lying vacant or unsold due to some or all of the issues stated before //*



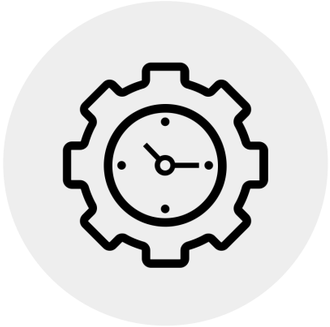
### Faux Balconets



*//where the intervention sought to provide residents with a greater amount of space outside their homes //*

// Participants must identify a suitable built residential site for intervention (where the designed modular balcony unit can be installed in large numbers) from among the many opportunities presented in the graphic above. The scale of the intervention zone chosen can vary between a single tower/building to an entire complex depending upon the need. They are also free to explore any other suitable category/building/site where a need for the modular balcony is felt. //

# Objectives



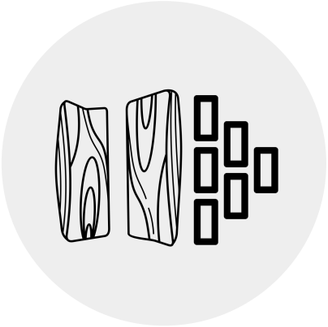
### Efficiency

The effort should be concentrated towards deriving the maximum utility out of a limited volume of space.



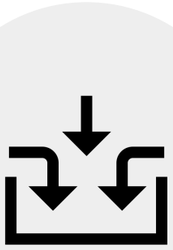
### Feasibility

The design should be constructionally and structurally sound and feasible.



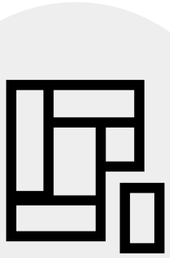
### Material Suitability

The prototype must be composed of ***appropriate*** materials, derived from context and based on structural needs.



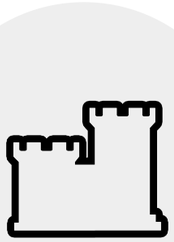
### Multiplicity of Uses

The design must look to redefine pre-ordained notions of what a balcony is used for.



### Modularity

The design must be scalable to multiple dimensions and constraints.



### Durability

In addition to being feasible, the intervention must be durable in the face of external conditions.

The following objectives can be a point of beginning to conceive this design. Participants can assume their own users before initiating their design process. However, the context must be derived from the site chosen for intervention.

# Submission

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

• Recommended number of boards/sheets - 6 boards/sheets. – **[ 2362px** x **3544px ]** or **[ 400mm x 600mm** in **150 dpi]** in portrait digital format (JPEG). Minimum 3 boards OR sheets & **no maximum boards OR sheet limit.**
• Each image should be less than **15MB**

**This additional resources folder contains**: FAQs.

Minimum requisites are sheets/boards + Cover image containing:

This is the link for new file sizes, here.

• Analysis/Documentation of Site chosen for intervention with appropriate reasoning. (Compulsory)
• Key conceptual sections x 1 (Minimum)
• 3D views x 4
• Cover image/Thumbnail of size 2000 x 1000 px or larger in aspect ratio 2:1.
• Plans, images, sketches (if any) can be added to support the entry in the form of additional images.
• Answer 6 FAQ questions in the discussion section as given on the 'additional resources folder'.

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+ The team limit for this competition is 4 members maximum.
+ Use exploded views to discuss multi levelled conceptual models better.
+ Ensure that the final sheets which are submitted do not include your name or any other mark of identification.
+ Mention sheet number on corner of every sheet.
+ This is a design ideas challenge only. There is no built commission/realization is associated with the problem
+ Plagiarism of any idea / form / design / image will be disqualified with a notice.

**Registration page here: http://competitions.uni.xyz/retro-fit**

**Discover the competition schedule and deadlines here: Schedule**

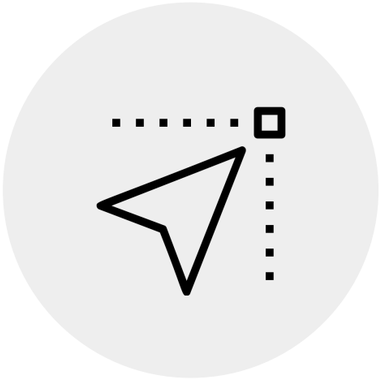
# Rewards



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.

# Judging Criteria

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.



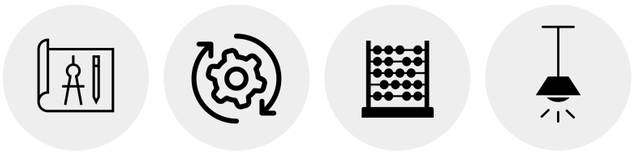
**Spaces/Programme**

How the spaces are calculated and ordered.



**Design Output**

The final architectural outcome of the solution.



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.

(Ad) Institutional access:

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Institutional Access™ is world's only cross institution competition programme. You can make this challenge more meaningful by bringing it to your classmates and professors working together. There are a lot of perks by entering this challenge with your institution. Follow the link to learn more.

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## About SWIFT

**Swift** serves as a unit block for **UNI** in the field of transient architecture realm. 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 **modular, transient and mobile architecture.** It is a research initiative dedicated to provide opportunities for designers from all domains to explore ideas that go beyond the boundaries of the discipline and enrich our built environment holistically; thereby opening up possibilities for promotion of temporal architecture thought at a global level.

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RETRO fit

# Can a **Balcony** be **more**?

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