



Final Year Project Showcase for Batch-2015

Department of Architecture & Planning Architecture Programme		
1	Project Idea	<p>TITLE: <i>“Embracing Flexibility in Architecture-as a response to fluctuating needs of humans”</i></p> <ul style="list-style-type: none">a. Prototype of Hawker’s Cart cum Shelter [design of 1st and 2nd space (i.e) work + shelter= Home]b. Design of 3rd space an informal bazaar (Sunday bazaar) of our city.
2	Process	<ul style="list-style-type: none">a. Embracing (holding) flexibility in hawker’s cart to get transformed into a shelter at night for the homeless hawkers especially coming from village for earning.b. Embracing passive flexibility in Informal Bazaar in a setup of transient space-a system of temporal occupation, 3rd space organized by community which host multifunctional entities as social and communal space more holistically under one roof.
3	Outcome	<ul style="list-style-type: none">a. Homeless hawkers require place to sleep and they are forced to sleep on street without privacy and security. Architect tends to innovate to provide solutions for problems, so I have design a cart which also serves the function of a shelter and because of this flexibility the structure would not be remain static but will be in motion throughout the day with the owner an efficient solution to lower our ecological footprint.b. Through adaptability making use of the space otherwise left un-programmed to encourage social interaction between the people of that community.
4	Evidences (Theoretical Basis)	<p>Flexibility in architecture is the result of our obscurity about the future. This architecture lean down to change rather than resisting it, because of its attributes and essence, this design form is cross-disciplinary and multifunctional. By fabricating the architecture on the principles of flexibility, the architects and engineers are paying respect to nature by providing efficient solutions to minimize the ecological footprint of the built environment. Benefits of flexibility in architecture are considerable, it increases the functional life of a building, fits its purpose better, accommodate users. People require architecture, but architecture also requires people, since a building has no purpose unless people use it. The things</p>



		<p>which do not fits the human need, we humans throw them away. We Architects should understand that everything in this material world is fatal. How should one design a building to avoid demolition problems? The amount of waste generated directly impact our environment. The more flexible the spaces are the more operational the form becomes.</p> <p><i>“A sustainable building is not one that must last forever, but one that can easily adapt to change”.</i> [Graham, P. (2005), P. 7]</p> <p><i>"You don't tend to innovate when things are going great – you innovate to create solutions for problems."</i> [Wade, R. (2017)].</p> <p><i>“If a building doesn't support change and reuse, you have only an illusion of sustainability....”</i> [Croxtton, (2003), P. 147]</p> <p><i>“Flexible architecture adapts to new uses; responds to change rather than rejects it.”</i> [Kronenburg, (2007)].</p>
5	Competitive Advantage or Unique Selling Proposition (Cost Reduction, Process improvement, Attainment of any SDG (Sustainable Development Goal), increase of market share or capturing new market or having superior performance over competitor. In summary, any striking aspect of the project which compels industry to invest in FYP or purchase it. Some detail description is required in terms of how, why when what. You can select one or more from following dropdown and delete rest of them)	
a	Cost reduction of existing Product	<p>a. Hawkers pay a rent of PKR 100/- per night for a charpai on a plot near cantt station. Per year it makes PKR 36,500/-and a cart costs PKR 10,000-15,000/-. A prototype which I have designed costs PKR 18,000-22,000/-</p> <p>b. In Johar the market organized 4 days a week which generates PKR 140,000/- per week. Designing a canopy of PKR 25,000/- to accommodate 100 stalls (8’x8’, 8’x12’, 8’x16’ etc), will provide a node for socializing as market had an important economic presence in that area, not just a market but living tradition related with historical spaces with an affordable cost.</p>
b	Process Improvement which leads to superior product	<p>a. Currently there is no shelter design for the homeless hawker in our city. They create shelter by their own which results in illegal encroachments of empty plots and urban voids.</p>



	<p>or cost reduction, efficiency improvement of whole process (e.g. What is issue is current process and what improvement you suggests)</p>	<p>The prototype of Cart cum Shelter hosts dual functions. Instead of creating another structure for shelter Carts could be designed to fulfill both the functions efficiently. This approach of active flexibility deals with reduce, reuse and recycle or resources in Architecture.</p> <p>b. The hawkers in the area of Gulistan e Johar occupies the street and are the main triggers of environmental pollution and traffic issues.</p> <p>I have designed an adaptable space on an empty plot acting as a black hole with in a city. Interactive design approach is a solution to breathe life into dead spaces. The 3rd space (informal bazaar) would hosts market stalls, food hawkers, vehicular hawkers, pottery maker and parking holistically under one roof. This passive flexibility also serves as a tool for solving and promoting social capacity of a society and sustainability of a physical environment, increases lifespan of location, spaces.</p>
<p>c</p>	<p>Attainment of any SDG (e.g. How it is achieved and why it is necessary for the region)</p>	<p>What we perceive is that every function requires a particular separate piece of architecture. By temporary we means disposable but this idea of temporary architecture is not true. Cart cum Shelter proves that every function do not require a separate architecture but by embracing flexibility we are able to reduce ecological footprint- an ecological approach designed to be recycled, affordable as adaptable to change, is aesthetically defined and sensitive to social conditions.</p>
<p>d</p>	<p>Expanding of Market share (e.g. how it expand and what is problem with current market)</p>	<p>Currently the market is not working on the innovative ideas and barely thinking for lower and middle income group which is the major part of our society as the % of informal economy is greater than the % of formal economy in our country.</p>
<p>e</p>	<p>Capture new market (e.g. Niche market or unaddressed segment)</p>	<p>The more practical, functional and aesthetically pleasing the design of the product is the more successful and demanding the product will be in the market. It will create a room for innovation and more experimental aspects of the product will asks for improvement in the future design of this prototype.</p>
<p>f</p>	<p>Any Environmental Aspect (e.g. carbon reduction, energy efficient etc.)</p>	<p>The materials selected are recycled, locally available, low cost and weather proof material with a life span of 25 years. Energy efficient design as the transformation of cart into shelter will not require energy and will be done manually.</p>
<p>g</p>	<p>Any Other Aspect</p>	<p>Assembling and disassembling of the structure is easy due to dry construction techniques and the materials after disassembling will be utilized for the another purpose and is recyclable.</p>

6	Team Members (Names & Roll No.)	Hafiza Maheen Fatima Patel AR-017 Batch: 2015-16
7	Supervisor Name	Dr. Suneela Ahmed (suneela_mail@yahoo.com) Ar. Rahat Arsalan (rahatarsalan@gmail.com)
8	Pictures	

NEEDS AND REQUIREMENTS

Uninterrupted visual connection with people
Space on wheels for the goods to be displayed
Protection from sun
Space to display on right hand side of the cart
Shutter to cover it
Ventilator
E.g. Food, Veg. dry fruits etc.

MODULE 01
HORIZONTAL DISPLAY OF GOODS

SECTION AA
CART WIDTH: 4'-0" (121.92 CM)

SECTION BB
CART DEPTH: 3'-0" (91.44 CM)

INTERLOCKING STEEL SLIDING MOVEMENT (WHEEL AND AXLE)

STEP 01 Wheel and Axle

STEP 02 Storage Bed

STEP 03 Cart display

STEP 04 Zip roof

STEP 05 Sliding Shelf

STEP 06 Shutter Detail

HAWKER'S CART PLAN
CART TRANSFORMATION INTO SHELTER PLAN
SCALE: 1/4"=1'-0"

HAWKER'S CART
CART TRANSFORM INTO SHELTER

NEEDS AND REQUIREMENTS

Uninterrupted visual connection with people
Space on wheels for the goods to be displayed
Protection from sun
Space to display on right hand side of the cart
Shutter to cover it
Ventilator
E.g. Food, Veg. dry fruits etc.

MODULE 02
HORIZONTAL DISPLAY OF GOODS

SECTION AA
CART WIDTH: 4'-6" (139.70 CM)

SECTION BB
CART DEPTH: 3'-0" (91.44 CM)

INTERLOCKING STEEL SLIDING MOVEMENT (WHEEL AND AXLE)

STEP 01 Wheel and Axle

STEP 02 Storage Bed

STEP 03 Cart display

STEP 04 Zip roof

STEP 05 Sliding Shelf

STEP 06 Shutter Detail

HAWKER'S CART PLAN
CART TRANSFORMATION INTO SHELTER PLAN
SCALE: 1/4"=1'-0"

HAWKER'S CART
CART TRANSFORM INTO SHELTER

STEP 01 Wheel and Axle

STEP 02 Storage Bed

STEP 03 Cart display

STEP 04 Zip roof

STEP 05 Sliding Shelf

STEP 06 Shutter Detail

STEP 07 Retractable Roof

STEP 08 Retractable Shutter

STEP 09 Retractable Shutter

STEP 10 Retractable Shutter

STEP 11 Retractable Shutter

STEP 12 Retractable Shutter

STEP 13 Retractable Shutter

STEP 14 Retractable Shutter

STEP 15 Retractable Shutter

STEP 16 Retractable Shutter

STEP 17 Retractable Shutter

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STEP 95 Retractable Shutter

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STEP 97 Retractable Shutter

STEP 98 Retractable Shutter


STEP 99 Retractable Shutter

STEP 100 Retractable Shutter

MODULE 1 AND 2: HAWKER'S CART FOR HORIZONTAL DISPLAY OF GOODS

NEEDS AND USER REQUIREMENTS

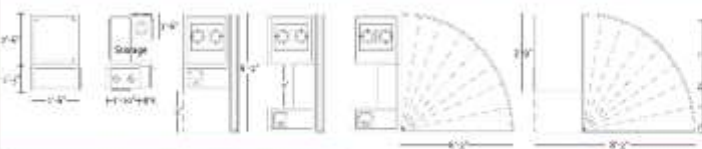
- Space for cooking
- Covering for hygienic purpose
- Storage for gas cylinder, electrical hook base
- Fire shade protection
- Uninterrupted visual connection
- Storage space
- Shelter space at night
- Ventilation



MODULE 03

COOKED FOOD HAWKER

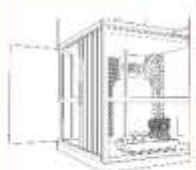
TRANSFORMATION IN PLAN SCALE: 1"=3/8"



COST ESTIMATE: 12,000-18,000 PKR


DETAIL 01

All installation for gas cylinder




DETAIL 02

Portable wash basin



DETAIL 03

Wall mounting for stove detail



304 STAINLESS STEEL FOR FOOD PREPARING SLAB (Shelf)

- 1.5" x 24" x 120"
- PRICE: 2000 PKR

PARTIAL WOOD




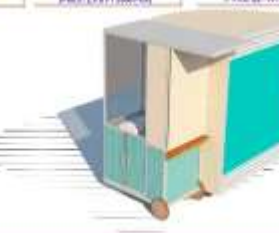
- 1.5" x 24" x 120"
- PRICE: 1500 PKR

ORIENTED STRAND BOARD 1.5"

- 1.5" x 24" x 120"
- PRICE: 1000 PKR

EMULSIVE PAINT FOR SHUTTER


- 1.5" x 24" x 120"
- PRICE: 500 PKR

MODULE 3: HAWKER'S CART FOR COOKED FOOD

NEEDS AND REQUIREMENTS

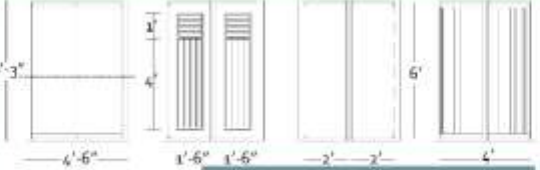
- Uninterrupted visual connection with people
- Space on which the good is displayed (large)
- Storage
- Protection from sun
- Space to sleep at night (transformed into a shelter)
- Shelter to cover it
- Ventilation



MODULE 04

VERTICAL DISPLAY OF GOODS

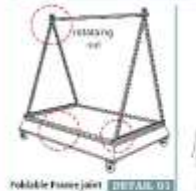
TRANSFORMATION IN PLAN SCALE: 1"=1/4"



COST ESTIMATE: 12,000-16,000 PKR


DETAIL 01

Portable frame joint



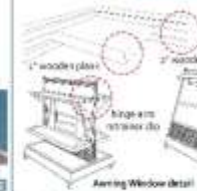
DETAIL 02

Corner hinge folding door



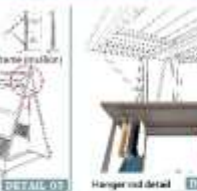
DETAIL 03

Aerating Window detail



DETAIL 04

Hanger rod detail



304 STAINLESS STEEL FOR HANGERS

- 1.5" x 24" x 120"
- PRICE: 2000 PKR

PARTIAL WOOD

- 1.5" x 24" x 120"
- PRICE: 1500 PKR


ORIENTED STRAND BOARD 1.5" SIDE COVERING + FRAMES

- 1.5" x 24" x 120"
- PRICE: 1000 PKR

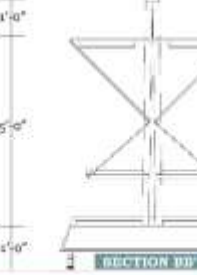
TARPAULIN FABRIC FOR DOWN SHUTTER AND VENTILATOR


- 1.5" x 24" x 120"
- PRICE: 500 PKR

SECTION AA'



SECTION BB'





MODULE 4: HAWKER'S CART FOR VERTICAL DISPLAY OF GOODS

