

Understanding User Experience and Architecture

- **User Experience Design**

In our day to day life we come across and make use of various products, spaces, etc. which have been designed for human use. Each and everything around us has been made in a way that can make those things easier to use and help complete its intended purpose.

Whenever a person uses anything, they tend to have an experience related to it. User experience is how a person feels when interfacing with a system, a product, a space, etc. User experience design is the process through which an effort is made to understand the pros and cons of the design which could possibly make that design better and hence make the user experience a good and comfortable one.

User experience design is a process for which helps to design the things in a much better way, with lots of empathy and with empathy towards the end users.

- **User Personas**

A product or a space, or whenever something is designed, the person or the people for whom its being designed should always be considered. Understanding the end users for the space or the object being designed provides the designers with a greater insight into aspects such as anatomy of the users, their mindsets, their habits, their activities, their tasks, their thinking, etc. Hence it's extremely important to understand the end users when designing any product.

User Personas are the real time users or imaginary characters, created by the designers in order to represent their end users and understand various things such as user needs, experiences, goals, behaviour, etc.

- **Methodology of User Experience Design**

In order to design a space or product through the process of User Experience Design, specific steps have to be taken in order to reach a proper conclusion. The following steps have to be considered:

1. Understanding the space, object, product, being designed.
2. Identifying and analysing the end users for whom the design is being done.
3. Creating User Persona specific to each user of the design.
4. Recording and analysing the various task needs, information needs, etc. of the users through the personas
5. Finding the major activities, tasks or requirements and analysing each task in terms of thoughts during the activity, feeling, what drives or blocks the user from doing that task, sensorial perception and space requirements

6. Depending on the analysis done categorize the tasks in terms of their importance and frequency in the form of affinity Diagram (Affinity Study). Affinity diagram changes from one design project to another depending on the factors important to that particular project
7. Considering all of the factors analyzed propose a design solution feasible for the activity or task.

- **Task analysis and Observations**

1.

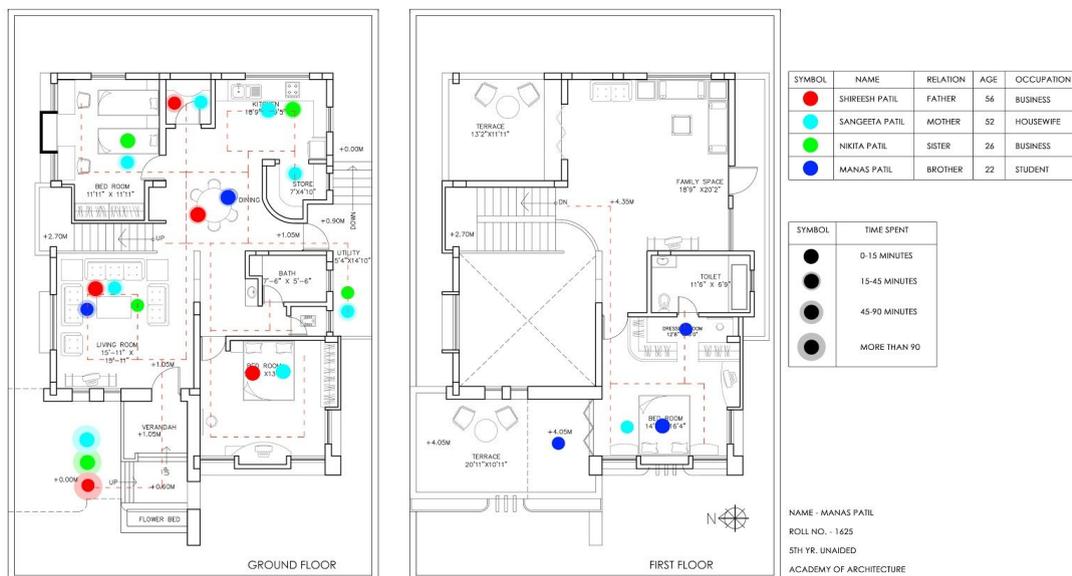
Area of Study: Residence

User: Mother, Father, Brother, Sister

Mode of Study: Activity Mapping

Observations:

- There are 4 users in the residence
- The common areas such as halls, dining areas have been utilized the most by the family members
- During the morning period, the service areas such as toilers, utility area, etc. were used the most
- During the daytime the areas such as kitchen, bedrooms and halls were used upto some extent.
- The common areas such as halls were used the most for leisure activities during evening times
- There was a shift of utilisation of personal spaces such as bedrooms to common spaces to personal spaces from morning to night.
- The flow of the people through the house was evenly distributed throughout the ground floor, with upper level being underutilised.
- For Eg.



USER ACTIVITIES
6 A.M. TO 9 A.M.

2.

Area of Study: Kitchen

User: Mother and Sister

Mode of Study: Video Documentation

Observations:

- The activities performed were divided into 3 major areas; Stove area, Storage and sink
- All the three areas are in good proximity of each other and hence easy to access and convenient
- The kitchen is spacious overall and hence can accommodate 2 people without it being congested.
- Kitchen area is well lit by natural lighting and hence a pleasant space to work in
- The kitchen counter height should have been a couple of inches more to make it suitable for the primary users of it.
- The Sink could have been placed a little farther from the stove area as the sink is a little too close to the stove
More space should be made available to keep the food prepared in case of huge meals.
- The heights of various objects should be in accordance with the primary user as cooking is an everyday activity and hence a lot of time is spent in this area

3.

Area of Study: User Personas of Residence

User: Mother, Father, Brother, Sister

Mode of Study: Analysis of Task needs and Task Information

Observations:

- The primary user of the residence according to the number of tasks performed and the information needs is Mother.
- The most amount of time is spent in the Kitchen and utility areas by Mother.
- The secondary user would be sister who performs many tasks along with mother
- The time spent by the secondary user is divided equally between bedrooms, kitchen, etc
- The task needs and task information of mother and sister consist of activities which are not just personal but directly affect and are influenced by the remaining two users i.e. brother and father.
- The brother was mainly confined to the areas such as his bedroom, hall, etc. and had task needs and task information which were mainly dominant by personal activities and needs.
- The task needs and the task information by the father were fairly less in comparison to the primary and secondary users yet more than that of brother.
- For Eg.

FATHER	TASK NEEDS	INFORMATION NEEDS
	<ul style="list-style-type: none">- Going to office from home- Repairing various broken objects- To take family members to market, cinema, malls, etc.- Getting ready for office- Have food- Take the dog for a walk- Interacting with neighbours- Talking on the phone- Attending business meetings online- Watching television- Doing exercise- Instructing the watchman of the daily chores- Reading books- Checking Emails- Reading newspaper- Checking if the entire house is locked at night	<ul style="list-style-type: none">- Where are the people in the house?- Is there an important client meeting today?- What time are the neighbours free?- Where is the mall located?- Has the dog been taken for walk or not?- Which room in the house is empty when he wants to receive a call?- Is the bathroom empty or not?- Has the driver come today?- Is something kept with the watchman?- Is something going to be delivered today?- Is the wifi in the house working?- Has the car been washed properly?- Are the bills paid?- When was the dog taken to the vet?- Is anyone in the house going anywhere?

4.

Area of Study: User Personas of Boarding school

User: Student, Teaching Staff, Non-Teaching Staff, Security, Administrators

Mode of Study: Analysis of Task needs and Task Information

Observations:

- The students are the Primary user groups of the Boarding school and they occupy the school as well as the hostel facility.
- Analysis of the 5 user groups indicate that the boarding school should be designed to cater more prominently to the students and the teaching staff.
- The non teaching staff, security and administrators mainly perform activities which help to keep the boarding school up and running.
- The user groups of teachers and students have many task needs and information needs similar. Also they share similar spaces most of the time of the day.
- The task needs and task information needs for other 3 user groups are fairly independent of each other.
- All the five user groups and their task needs and task information should be considered properly.
- Individual tasks of the user groups of students and teachers could be studied in order to cater to the specific and important needs of these user groups.
- Similar can be done in case of other three user groups too.
- For Eg.



NAME - Arjun Sharma

JOB - Student

AGE - 15 years

TASK NEEDS

- Going to school from hostel room
- Complete the homework
- Carry all the materials required to school from hostel
- Help other students wherever required
- To eat in the mess/canteen
- To play on the playground
- Doing classwork
- Doing group work
- Doing exercise
- Doing co-curricular activities
- Attending morning assembly
- Reading in library
- Ironing the clothes and making the bed everyday
- Going to bathroom and getting ready before school
- Getting ready for school
- Calling home
- Going to staff room when asked
- Going to laboratory, AV room etc
- Presenting work in front of class

INFORMATION NEEDS

- What homework will I be given today?
- When are the exams date?
- When will the lecture get over?
- When will I go back to my house? When will I meet my parents?
- How long for a break?
- What food will be prepared in mess today?
- Do I have books and materials required for class today?
- Where is my new room?
- How many students live in one room ?
- Where should I sit to do study in full concentration?
- When will my chance come to use the bathroom?
- How long for the PT period?
- Will I require extra money ?
- When and where will our tour is going to be?
- Which new game I am going to learn?
- What should I do if I get wound?
- Where is the medical room?
- What to do in case of power cut?
- Do I have candles? Where to get it from? Whom to ask? Where is the store room?
- If things get lost, what to do? Where should I go to ask?
- Where should I go and hide from seniors who might bully me?

5.

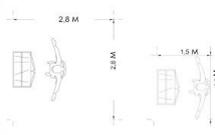
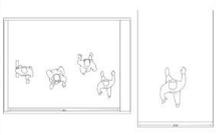
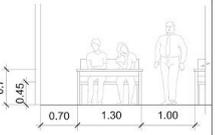
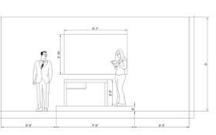
Area of Study: Tasks of the User (Student)

User: Student, Teaching Staff, Non-Teaching Staff, Security, Administrators

Mode of Study: Analysis of the individual task according to the factors such as Thoughts, Feelings, Drives, Blocks, Sensorial Perception and Space requirements

Observations:

- When studying the task needs of students considering a specific person would prove to be a bad approach as the analysis would be individualistic in nature.
- Amongst the task performed some of them could be common to all while others vary from person to person
- The factors such as thoughts, feelings, drives and blocks are strictly individual in nature and can vary largely from one person to another.
- The factors such as Sensorial perception and Space requirements would be almost similar for most of the user group i.e. students in this case as anatomy of humans of the same group tend to be fairly similar.
- For factors such as Thoughts, Feeling, drives and blocks, a large number of people of the same user group will have to be considered in order to arrive at a solution which be beneficial to all
- For factors such as sensorial perception and space requirements, analysis of few members of the user groups would be enough to arrive at proper solutions
- For Eg.

Project: Boarding School	 Persona: Arjun Sharma 15 yr. Student		Personality: He is in 8th standard. The boarding school is in Parbhani. His Parents live in Mumbai and work in MNC. He is a brash kid and doesn't like to study much. He is more interested in Sports and Extra co. activities. He is extrovert in nature and likes making new friends.		
	Getting ready for school	Going to school from hostel room	Doing classwork	Presenting in front of the class	Calling home
Thinking	<ul style="list-style-type: none"> • What is the time right now? • Will I reach the school on time? • What lectures do we have today? • Have I completed the homework? • Where have I kept my books? • Do I have time to grab breakfast quickly? • Is the washroom occupied or not? • Will I have to run to school to reach on time? 	<ul style="list-style-type: none"> • What new would I learn today? • Will I reach class on time? • Should I start running to reach class on time? • Has the assembly begun? • Will I get a seat next to my friends? • Will there be any surprise test today? • Will the elevator be crowded? • Have I taken all by books and required materials? • Is there PE period today? 	<ul style="list-style-type: none"> • When will the lecture get over? • Will the teacher ask for homework? • Will I get homework today? • What will be there for lunch today? • What time is it right now? • When will the break start? 	<ul style="list-style-type: none"> • Do I sound confident? • Is the presentation done properly? • Will my presentation be good or bad? • Will the professor and students like my presentation? • Will I be shouted at for my work? • Am I audible to everyone? • When will this end? 	<ul style="list-style-type: none"> • When will I get the chance to call my parents? • Will they be available during the time I call? • What they must be doing? • What would be the first thing I would tell my room • If I asked them to come and meet me would they be able to come? • How much time will I get to talk with them?
Feeling	<ul style="list-style-type: none"> • Anxious about not reaching on time • Boredom • Worried about not completing the homework/ preparing for test • Excitement in case of some effort like Sports day 	<ul style="list-style-type: none"> • Enthusiastic in case of special event at school • Confused • Nervous in case of homework not done or test • Anxious for reaching on time 	<ul style="list-style-type: none"> • Hungry • Bored of doing the classwork • Tenses that the work might not finish in time • Confused because cannot understand whats being taught 	<ul style="list-style-type: none"> • Anxious • Confused • Nervous • Excited • Confident 	<ul style="list-style-type: none"> • Excited • Nervous • Content • Happy • Emotional
Drives	<ul style="list-style-type: none"> • To present myself properly • To adhere to uniform code • To not leave anything behind • To reach school on time • Pack up sports gear • To get time to have breakfast • School doesnt call his parents to complain 	<ul style="list-style-type: none"> • To attend lectures and learn • For regular attendance • To not being pushed for bunking lectures • To not being complained to parents • To attend sports period today 	<ul style="list-style-type: none"> • To complete the work on time • To not to be shouted by the teacher • To not have to do the work as homework • To pass 	<ul style="list-style-type: none"> • To showcase my knowledge • To improve my presenting skills • To get marks and pass • To not be shouted by the teacher 	<ul style="list-style-type: none"> • To spend my free time • To have a check on my family members • To update them about my life • Because I miss them • To tell them about my achievement • To complain them about hostel and school
Blocks	<ul style="list-style-type: none"> • Not finding my clothes • Clothes are not ironed • Too much of waiting for the washroom • Not feeling well or exhausted • Sports injury • Wakes up late • Laziness • Homework not done so dont want to go 	<ul style="list-style-type: none"> • Home work not done • Not prepared for test • Not able to understand a specific subject • Lazy to go • Unwell or injury • To rather indulge into sports activity or other co-curricular activity 	<ul style="list-style-type: none"> • Cannot see the black board properly • Not able to hear the professor • Dont have the required material to do the work • Not feeling well • Lazy to do the work • Waiting for someone else to complete and copy from them 	<ul style="list-style-type: none"> • There is a power cut • Getting blacked out • Presentation file not opening • Presentation work not done properly • Others might make fun of me while presenting 	<ul style="list-style-type: none"> • There is too much homework • Not enough range • Getting blacked out • All the hostel phone are occupied • Too much noise in the area, cant hear them properly • Lack of privacy while talking on phone • Ending up with an argument
Sensorial Perception	<ul style="list-style-type: none"> • The toilets should be clean and ventilated even when crowded • Sufficient natural lighting and ventilation in the room • Toilets and room should be spacious and have enough space for student to get ready on time 	<ul style="list-style-type: none"> • The distance from the hostel to the school must not be too long • Lift should have sufficient space to fit in • Corridors should be wide enough to fit in large number of students in the morning • Multiple staircases 	<ul style="list-style-type: none"> • The class has to be well lit • The desks have to be smooth • The class room should be spacious • Desks should be comfortable • Not feeling well • Lazy to do the work • Colours used in the class should be thoughtful • Good amount of natural light and ventilation • Classroom should be acoustically treated 	<ul style="list-style-type: none"> • The classroom should be acoustically sound • Classroom should be well lit • The size of the class should not be too big making the student less confident and scared 	<ul style="list-style-type: none"> • There must be enough time to talk • Space must have a sense of privacy • Not much noise near the calling area
Space Requirements					

6.

Area of Study: Affinity Study (For tasks of Teachers)

User: Teachers

Mode of Study: Analysis of the individual task and categorizing them according to their importance and frequency

Observations:

- The tasks with High Importance and High Frequency should be giving utmost priority while arriving at a design solution
- After this tasks with Low Importance and High Frequency Should be giving importance
- Categorizing the tasks helps to create a clear distinction between the things that should be considered with utmost care from the things which do not require similar amounts of thought.
- Such a distinction provides a clear vision when finalizing the design decisions to obtain a feasible solution.
- The designer can prioritize one decision over another with the help of the categorization of the tasks
- For Eg.

	High Importance	Low Importance
High Frequency	<ol style="list-style-type: none"> 1. Going to the Staffroom 2. Teaching the children 3. Writing on the board 4. Stamping on the attendance machine 5. Talking with other teachers 6. Check the homework of the students 7. Taking attendance in the class 	<ol style="list-style-type: none"> 1. Arrange his desk in the staffroom 2. Storing the lap equipments properly 3. Using Computers/Laptops
Low Frequency	<ol style="list-style-type: none"> 1. Setting up experiments in the lab 2. Going to the washroom 3. Eating food 4. Reading books 5. Writing research papers 6. Provide First-Aid to the students 7. Meeting the parents of the students 8. Going to the principals office 9. Setting up exam papers 10. Going home 11. Resting in the staffroom 12. Exercising 13. Put up a exhibition 	<ol style="list-style-type: none"> 1. Conducting a specific experiment 2. Lead the students to the assembly halls

- **Implementation of UX in Architectural Design Process**

The architectural design brief proposed for a Recreation Centre at the given site. The surrounding area was highly populated with Residential category of the buildings thus creating a varied type of user group consisting of Children, Teens, Adults and Senior citizens. The principles in UX Design were considered at various design stages. Few of them have been mentioned below.

1. For architectural design, the principles in UX Design were implemented to arrive at a proper user group for proper utilisation of the site area and the program throughout the day.

In order to arrive at the proper conclusion in the above case following steps were followed:

- Firstly the users were analysed and their tasks were identified
- Then these tasks were weighed according to the importance and the time of the day at which they would be performed by each user group.
- The times of the day and the user group utilizing the site at that time were categorized into an affinity diagram which consisted of an activity performed at a particular time of the day, the importance and frequency of that activity and the user group performing that activity.
- This helped to achieve the objective mentioned above

Primary Programs	Major User Group	Time
Auditorium	All	Morning, Afternoon & Evening
Cafe	Teenagers & Adults	Afternoon, Evening & Night
Library	Teenagers & Adults	Morning, Afternoon & Evening
Childrens Library	Children	Morning & Afternoon
Supper	All	Throughout the Day
Health Clinic	All	Throughout the Day
Day Care For Small Children	Children	Morning & Afternoon
Games Room	Teenagers, Adults & Senior Citizens	Throughout the Day
Gym	Teenagers	Throughout the Day
Gallery	All	Morning, Afternoon & Evening

Secondary Programs	Major User Group	Time
Public Space Seating/Cafe	All	Afternoon, Evening & Night
Library Service	Teenagers, Adults & Senior Citizens	Morning, Afternoon & Evening
Lobby	All	Throughout the Day
Stage	All	Morning, Afternoon & Evening
Office	Teenagers, Adults & Senior Citizens	Morning, Afternoon & Evening
Information Area	All	Throughout the Day
Meeting Rooms	All	Throughout the Day
Kitchen	Adults	Throughout the Day

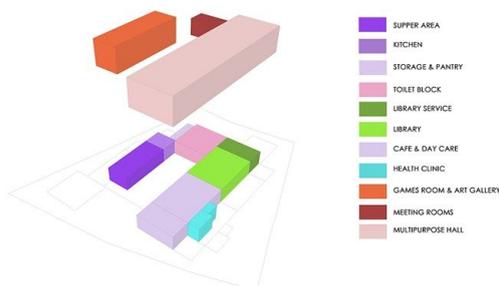
Tertiary Programs	Major User Group
Foyer	All
Circulation	All
Toilets	All
Male WC	All
Female Wc	All
Washrooms	All
Service Area	Adults
Storage	Adults
Small Storage	Adults
Electrical Area	Adults

User Group	Age
Children	8-14
Teenagers	14-25
Adults	25-60
Senior Citizens	More than 60

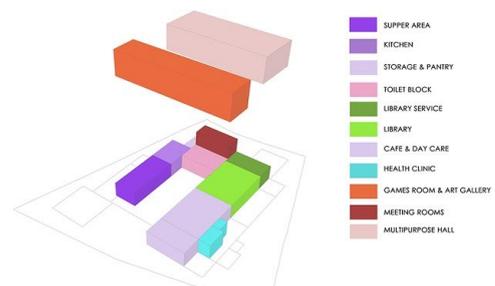
2. The placement of the program chosen on the site would be dedicated by the principles in UX Design.

In order to arrive at the proper conclusion in the above case following steps were followed:

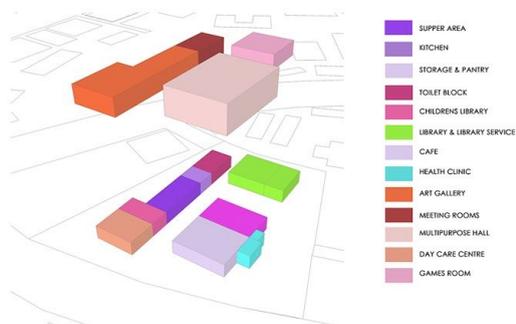
- First the programs and the user group to which the said program would cater were Finalized
- After the programs and their user groups were recognized, the tasks performed by them were analysed by various factors such as proximity of the program from the main road, the distance a person would have to travel to reach there, the time spent at that particular program, age group of the user group, etc.
- An affinity diagram was made in order to categorize the task and eventually the programs into their importance and frequency
- For eg. For a program such as a gym, it would be a high importance task, for Teens and Adult age groups, and done on a regular basis. A person would visit the gym even though he has to walk a little more and hence the positioning of this program a bit further into the site would be acceptable.
- For eg. In the case of a health clinic, the program has to be easily accessible and is of high importance. Hence placement of this program would be suitable near the entry of the site.



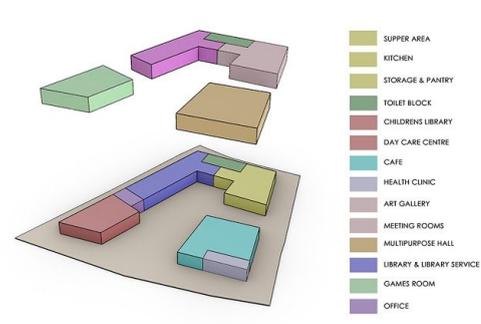
ZONING PROPOSAL OPTION 1



ZONING PROPOSAL OPTION 2



ZONING PROPOSAL OPTION 3



FINAL 3D MASSING OF THE DESIGN PROPOSAL

- **Designing with Empathy**

Empathy is the ability to see and experience things from another person's perspective. In terms of architectural design, empathy could be interpreted as a deep understanding of the problems and realities of the people you are designing for. Often, many times it happens that the architectural design becomes more of implementation of the designers dreams than fulfilling the requirements of the end users. UX Design helps to close the gap between these 2 things and makes the architectural design process more user centric. The process of the UX design paves the way to understand the actual requirements of the end user by identifying all the users for whom the design is being made, paying attention to the tasks performed by them, analysing those tasks in terms of the thoughts of the user, what drives them or blocks them to perform those tasks, their feeling, etc. By doing this the designer becomes aware of all the difficulties faced by the end user and is better equipped to make proper design decisions which would enrich the experience of the people for whom the design is being done.

One of the most important things gained by adopting the UX Design process in architecture is the ability to identify the problems faced by each user group on a daily basis thus leading to better design solutions and judgements in the design process. It also helps to provide clear guidelines on what to prioritize when a complicated design decision is being made concerning a large number of varied users.

Apart from identifying the problems, implementing the UX design process helps to recognise the desires and expectations of the users which they themselves did not know existed. These desires and expectations come to light while studying aspects of the tasks performed by the users such as tasks needs, tasks information, the motivation to do that task, the feeling they have when the task is performed, etc.

UX Design process helps the designers to identify and overcome the problems faced by the end users and at the same time provides with designers with the ability to realise the unsaid expectations or desires of the end users, leading to a design catering to the end users and thus to a structure designed with empathy