

**A work carried out during 28<sup>th</sup> to 30<sup>th</sup> November, 2014 at GTU Innovation Council  
during a 3-Day Faculty Development Workshop  
Case Study on Theme: **Heritage Properties****

**Team members**

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**Venur: S4 Co-creation centre, GTU Innovation Council, room no-126,2nd floor ACPC  
Building, Ahmedabad**

**Date: 28/10/2014**



The journey begin with brainstorming on finalizing a topic on which empathizing and further design thinking process can be done on Day 1. With discussions among team members, broadly, an area was selected as “**Heritage Properties**” and taken up for thinking.

Design For HERITAGE PROPERTIES

Date : 28/10/2014

USER	HERITAGE PROPERTY VALUE IN CONCERN
VILLAGERS CITIZENS	TOURISTS

## Stage – 1: Empathizing

### Deciding Users

Basically, for a heritage property, user ideally, can be either an owner (may be villager or urban citizen) or a Tourist. However, the idea regarding property's heritage value and a specific property was to be kept in mind while thinking.

### Deciding Stakeholders

1. For a heritage property, the first and foremost stakeholder is the **Archaeological Survey Department of India** (ASI) as they manage the historical properties across the country.
2. A **civil engineer**, required for repairing and maintenance, inspection, checking of the property
3. **Historians** keep track of the history of precinct, building, monuments and incidents. They also act as bridging agent between past and present.
4. **TCGL** – the state government department is responsible for developing and maintaining properties of historic value and tourism activities around such properties.
5. **Structural engineer** is essential for checking the structural stability of the property and replacement of any component of the structure, that may be deteriorated / deteriorating and having effect of ageing/ weathering
6. **Shopkeepers** are vendors who establishes shops in surround to historic places and sell products such as monument books, maps, mementos, souvenir articles and so on
7. **Movie producer**, being interested in casting of a film (documentary/ commercial) concerning to the heritage property or using the property as a prop to some scene
8. **Neighbours** of the property (historic house building) have specific liking or disliking towards the property with heritage value – needing it to be preserved or to be destroyed depending on the case as it may be
9. **Electricians** are required to maintaining lighting and other electrical facilities within the premises
10. **Police staff** is necessary towards keeping the law and order for the victors as well as helping indirectly the building retained through cultural preservation
11. **Fine art students** – as they often choose such properties to make drawing, case study stories, paintings and bring such properties to notice
12. **Artists** – generally use such properties to produce paintings and other art works to be used commercially
13. **Contractors** – play important role in activities related to re-construction/ repairing works
14. **Municipality** fixes norms and standards to protect and preserve as well as taxation structure of such properties.
15. **Social workers** and **NGOs** are specific group of people who may generate awareness to conserve/ preserve such properties/ localities
16. **Landscape designers** are generally up keeping with landscape related designs around such buildings/ monuments, may suggest changes in hard-or-soft landscape with seasonal changes

17. **Local area guide persons** know the mythological/ historical/ cultural values of the property (may be literate or illiterate) and leaves impact on minds of visitors by telling / presenting stories about the historical incidents around the building/ precincts
18. **IT Solution companies** are required to produce mapping/ programs to automatize certain facilities/ functions to be carried over in such a property – like sensor based lighting/ story telling in certain rooms as visitors enter or something that sort, we are not very much clear about this, but feel that they shall be among stakeholders



### Activities

Here, we were to identify the activities that the user (owner-citizen/ villager or the tourist) was to be involved into. Accordingly, the activities where solely the user is to get engaged are identified as below:

19. **Utilities** in terms of bath/ WC, cloth changing are performed by the tourists
20. **Corridors** and **passages** are being used / passed by users while moving around the property
21. **Water huts** are used for the water drinking purpose which may need cooler/ heater/ RO system with water dispensing unit
22. **Food stalls** are identified with eating activity (for almost all picnic spots need this) which shall be restricted to certain specific area only to maintain cleanliness
23. **Parking** of vehicles is an essential functional requirement to avoid chaotic situation around the premises as well as location shall be nearby so as the user need not to walk along a long way to reach to property in concern
24. **Accessibility/ mobility** is the requirement with a point to bring-in the visitors from distant places by providing means of regular transportation facility
25. As the property has historic value, the ageing effect is obvious and for the purpose, **structural inspections** are to be carried out periodically and regularly.
26. **Gardens** are used for playing, seating, leisure gathering, social gathering activities
27. **Maintaining** the premise with cleanliness is very essential hence, shall include activities such as sweeping, moping, washing and so on
28. **Construction** and **modification** are necessary to maintain the size and shape of the property however, it will generate construction debris that shall be taken care of.
29. Providing protective actions to safeguard the structure/ area from specific **hazard** that can harm the building/ property – like fencing, placing of sensors and so on

30. **Photography** is carried out occasionally/ regularly by visitors – can generate revenues by charging for cameras – may need specific arrangement for lights and shades etc.
31. Commercial **visit/ touring activities** can be included with the building in concern here (for example, making the monument a part of a circuit adjoining other similar building/ points of attractions to obtain common touristic base)
32. **Maintenance activities** for surface, texture, structural stability, damages, vegetation and so on
33. **Sound** and **light shows** may be worked out and organized including non-live performances
34. **Cultural programming** activities like singing, dancing, skits, play, folk/ solo
35. **Horticultural** activities like breeding of specific type of flowers in surrounding gardens will attract/ increase tourist attraction value
36. **Mapping on a mobile** (for larger area precinct) is essential for a person who is new in the area (uses GPS function) so as not to get lost while roaming around
37. Property with historic value may be used fully/ partially for short-term or long-term **rental use** – may be residential/ commercial or something that sort (not much clarity)
38. **Attraction** value addition include performing certain activities that create value of the property and result in attracting visitors
39. Carrying out activities concerning **security** of visitors (can act as a magnet for international tourists)
40. **Advertising** activity highlighting various aspects, events, stories, incidents will help fetching more visitors to the place
41. Allowing partial **residential use** of the facility include night stay and other such activities in the premises (can fetch higher revenues in some cases)
42. **Movie making** can be done on frequent bases using the parts of the precincts to be utilized as props in a serial/ documentary/ movies
43. **Documentation** activity of the area/ building regarding its past and present shall help highlighting features and values adhered to the precinct
44. Activities that provide **Guidance** to the visitors is very essential – by human or may be by still photographs or by hoardings or boards
45. **Human trafficking** is the activity which shall be restricted in the area in any/ all the cases. May add adverse / anti-social effects in a country like India
46. **Livelihood** based on breeding of specific breed of fishes/ animals/ birds may generate revenues / help economic activities
47. Facilities for **staying overnight** at the premises be allowed in surrounding or nearby areas – that give rise to development/ establishment of hotels/ motels in the area where visitors can stay overnight
48. In any case, by any of the activities, the nature shall not be disturbed and for the purpose, activities are to be performed for **balancing nature** whatever is necessary.
49. **Education** about the importance of the property is necessarily to be imparted among the visitors so as to avoid unknowingly made damages (name writing, picture making on walls, trees and so on)
50. Activities pertaining to **develop surrounding area** shall be carried out – economic, social and physical development



## Problem/ Ideas (seeking non-obvious solutions)

### **Problem statement 1:**

#### **Lacking of information dissipation/ guidance to tourist visiting a heritage premise**

Thought: Whenever a tourist is visiting a premise (Tajmahal, Somnath temple, historical palace/ fort, precincts like in Mumbai/ Goa and so on), often observed problem is to avail local information/ map that can be easily understood. Many a times, local guide is not available/ many tourist don't opt to hire service of a local guide towards personal values. For a person, new to the premises, it is difficult to locate utilities as well reaching to such places. (Observation: Locations like Old Ahmedabad Pol is being visited by guided visitors during a limited time, however, at any other time of the day if a visitor visits, proper guidance is probably not available and importance of features may not be disclosed effectively which in turn may result in reduction in visitor base.)

### **Problem Statement 2:**

#### **Co-gen mechanism towards saving electricity consumption (Generation of electricity using local resources to run facilities in the premises)**

Thought: Locations where number of tourist exceed certain number (say, 5000) like in case of holistic places, archaeologically important monument, or architectural marvel (Bahai Temple) the electricity may be generated out of steps taken by tourist/ walking impact on the ground. Also, use of renewable energy be included like if plain grounds are available in vicinity, terrace areas can be equipped with solar and small size windmills. Generation of manure/ electricity out of burning of waste.

### **Problem Statement 3:**

#### **Emergency and safety planning of the premise**

Thought: Looking forward to have deteriorating structure in almost all the cases, at time of occurrence of hazard, the safety of users within the premises is endangered. An emergency/ evacuation plan along with safety precautions can be thought up on and carved out in a way along with disseminating it to users in best of their interest.

### **Problem Statement 4:**

#### **Preparation of development plan/ master plan for the premise**

Thought: Almost all the buildings and premises (except a few) are suffering the lacking of proper planning activity towards keeping the premises to conserve its value for longer duration and at times we have observed that many such properties seek attention and keep on deteriorating with effect to time. Master planning/ development plan may be developed for such locations to freeze the state that is observed today, for future generations to observe the same way we can.

### **Problem Statement 5:**

#### **Dynamic monitoring of the structural stability**

Thought: presently the health of a building is checked/ audited by structural engineering expert wherein he has to visit the site and carry out the inspection. Some of the hand-held instruments are used to measure the strength like rebound-hammer tests, ultrasonic test and so on. However,

this tests show strength for specific area/ part under inspection and show the results for the time being. However, a simulation can be worked out on possible maximum load carrying capacity which is more-or-less a theoretical approach and may miss certain dynamic aspects to be taken care of regarding structural safety and stability. Some building structure components are not proven to be reliable according to its probable future life/ capacity to take load of persons and avoiding/ not strengthening at such instances may result in collapse of the structure or damage to property along with loss of lives. Dynamic monitoring of structural components (using sensors and software in real-time) may be developed to check on the strengthening requirements.

### Problem Statement 6:

#### Measuring & Repairing crack widths using electronic device

No such devices are existing that can intelligently sense the crack widths, find volume and type required to be filled in (towards repairs) and perform the job. May be it will involve the nuclear processes (similar to analysing Gold mixed up with other metals – one can find such a device analysing percentile composition of substances. Nuclear operations need specialized skills and may be a little dangerous. Software interface may be developed and used for analysis and implementation. Need advanced level atomisation skills.

### Problem Statement 7:

#### Repairs and retrofitting of properties

Thought: structure life are deteriorated over a period of time and heritage properties mostly made up of stones and lime mortar, needs attention specifically from the weathering effects, chemical attacks, salinity attacks, vegetation, earthquake forces, sand dunes filling up carvings, erosion due to salty winds, entry of birds and animals and so on.

To safeguard, repair and other such requirements, we selected this problem to be given an attempt of ideation.

### Stage – 2: Ideation

#### People

Looking forward to two words → Property in concern and Heritage Value (retention), a set of different people involved was peeped into. We came out with following idea on involvement of people.



## Activities

With the thought on people involved in different activities, an attempt was made to think up on possibilities of various activities. Elaboration at maximization is essential here at the stage while identifying activities, this results in COMPREHENSIVENESS.



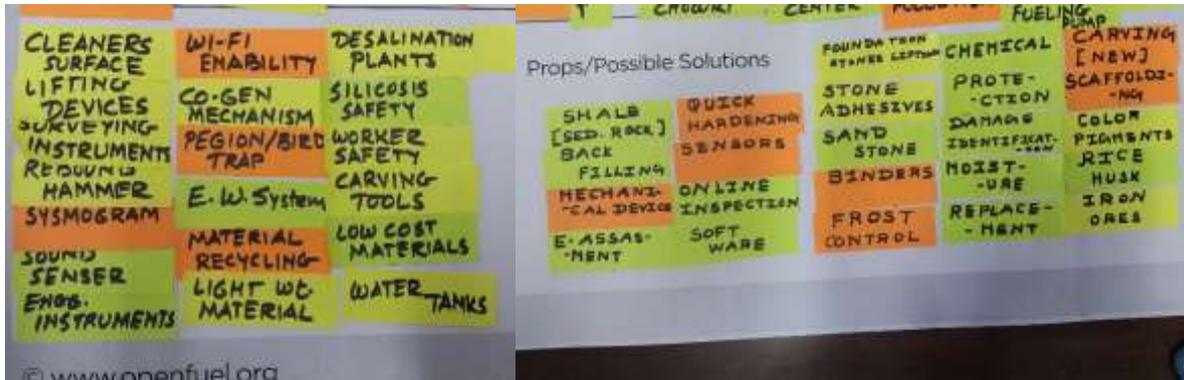
## Context/ Location/ Situation

With number of people identified doing many activities, we attempted to identify different locations that are involved in performing such activities, situations that are applied to perform certain activities and context of importance that was relevant to activities. We came up with the following.



## Props/ Possible Solutions

This section of the Ideation Canvas help in carving out different requirement in-line with attempting/ looking forward to have an idea about addressing a problem (in the case here, it was heritage value and property in concern).



The entire of Ideation Canvas was framed as showing below:



Ideation is done. By the time, minds are bogging with many simultaneously popping up thoughts and looking forward to address the problem, with what – not clear at the stage. Next job was to frame up with Product Development Canvas. Without any precise idea about perfect solution to be addressed, we are mechanically moving ahead to develop next canvas in line. Let's see, what comes up.

## Stage – 2: Product Development Canvas

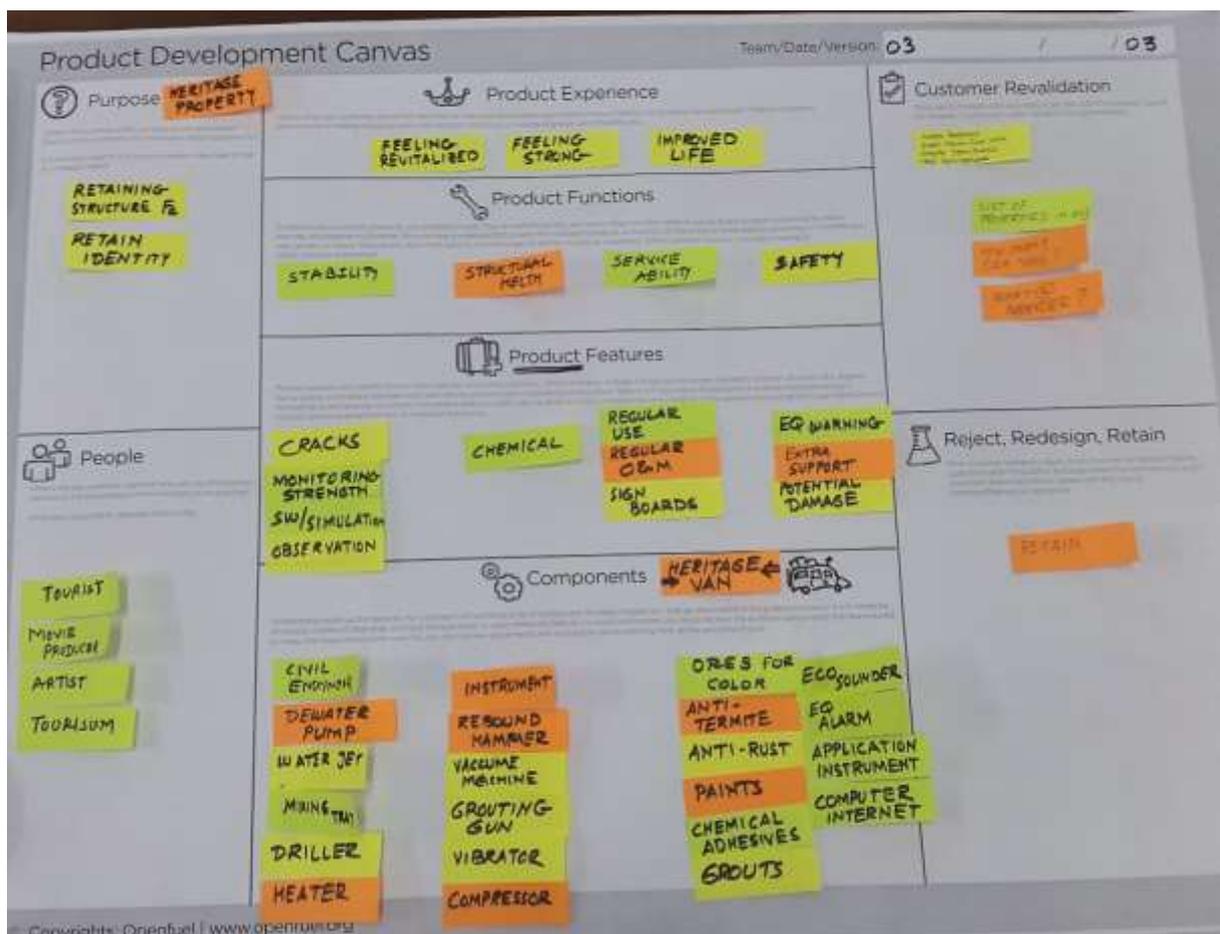
The canvas begun with mention of purpose and people. By this, it has brought down to a very limited set of people that are thought to be directly involved in major of the activities.

Next, the PRODUCT EXPERIENCE was to be mentioned as if the product is giving experience to the user as well as heritage property in concern.

Further, the product must be performing certain functions and have set of features that can be alternatively accommodated / check possibilities for accommodating features.

And, all of a sudden, what product it could be, I came up with a thought – it's a **VAN**. Yes, a VAN – Vehicle, which encompass various instruments – to check health of the structure, basic materials to perform restoration works, and ability to intimate for major repair works. **WOW...!**

Just to check, we asked many of the faculty participating, weather they have known any of such a Van/ Vehicle? The answer was NO...! Absolute productive Idea, it was. That too, all the operations can be performed by a Civil Engineer present in the van along with a assisting labour cum driver.



Now what?

WE had to workout different components, that may be made available in the “HERITAGE VAN”. We asked for validating the components and ideas to other faculties and suggestively, What about list of heritage propertuies in Gujarat State, showing applicability – usability of the product – this gave rise to viability, cost parts of the said product.

In addition, we came up with another BIG IDEA – the van can also serve ALL BUILDINGS, ANYWHERE...!

Hecne, we are retaining the product here after applying certain modifications.  
No need for redesign process or reject.

Further course may be:

Work ahead to improve the basic version of thought, apply Engineering principles – different streams and specializations, anticipate the estimated cost (on paper of course), develop a paper based prototype, show it to stakeholder agencies, procure fund, make up a working model, check functioning, check on feasibility of production, bring out the product...!

Case Study Report Compiled by:

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