Dedication

To my family for their constant support. To my friend L.P. for always inspiring me.
Acknowledgments

Many thanks to my mentors and peers for providing guidance and support throughout the year for the completion of this work.
Abstract of Thesis

Toward a New Home: Zip Regions of Hope in Saudi Arabia

Home is a place to seek love, support, and safety. Despite life’s ups and downs, home is where one turns for comfort. However, sometimes people have to evacuate their homes due to wars, revolutions, and political conflicts. During conflict, persecution can force groups to disperse, resulting in refugee camps on the borders of their countries. The consequences of these wars, revolutions, and political conflicts can be seen on three levels: societies are ravaged, families are torn apart, and individuals are uprooted from the familiarity of their homelands. Their lives are stuck in limbo; they cannot go back home or easily access another country for resettlement.

This thesis work provides one immediate solution to this issue and aims to explore alternative ways of designing an educational train program to assimilate refugees to their new environment. More specifically, interior design will be used to help refugees increase their likelihood of relocating successfully. Prior to boarding the train, refugee passengers will go through a processing center. Once complete, they will be ready to board the train that will take them to their host country, Saudi Arabia. The educational journey aims at preparing and enlightening them about the host country’s cultures, regulations, and other aspects related to migration in order to provide safety and comfort as they restart their lives in a new, unfamiliar place. The creation of this train takes into account the host country’s cultural background to ensure the easiest transition.

The starting point for this project is located in the Western region along the Red Sea of Saudi Arabia. The railway will pass in a loop path through the most important cities of each region—Haql, Duba, Al Wajh, Umluj, Yanbu, Thuwal, Jeddah, Makkah,
Al Lith, Al qunfudhah, Al Qahma, Jazan, Fayfa, Dhahran Al Janub, Najran, Khamis Mushait, Abha, An Namas, Bishah, Al Bahah, Taif, Medina, Khaybar, Al Ula, Tayma, Tabuk—and will end in the first city, Haql. In order for the refugees to fully understand each region’s theme and culture; then decide upon where to live, the train’s interior will introduce specific cultural aspects of a Saudi home, considering the usage of the space, colors, materials, and design elements as strong tools with
# Table of Contents

Dedication..............................................................................................................iii  
Acknowledgments.................................................................................................iv  
Abstract of Thesis..................................................................................................v  
List of Figures...........................................................................................................ix  
List of Symbols / Nomenclature...............................................................................x  

**Chapter One: Research**

Thesis Statement....................................................................................................1  
Introduction..............................................................................................................2  
Overview on conflicts in the Middle East and Emergency Concept......................4  
The Refugee.............................................................................................................11  
A Narrative of a Case Study to Understand a Refugee Situation..........................13  
Analysis of a Case Study on Syrian Refugees to Determine Their Needs.............20  
Concept...................................................................................................................28  
Site: location of the project.....................................................................................29  
Case Studies............................................................................................................48  
  i.  Gyanodaya Express, the educational train.....................................................48  
  ii. The Ride NYC, technology............................................................................49  
  iii. The Venice Simplon-Orient-Express train, multifunctional use......................49  

**Chapter Two: Design Conditions**

Voyage Timeline.....................................................................................................00  
The Three Themes..................................................................................................00  
  i.  Tabuk Region..................................................................................................38
ii. Hejaz Region

iii. Janoub Region

Program

Bibliography

Appendices
List of Figures

Figure 1: The rites of spring .................................................................6
Figure 2: Maslow's Hierarchy of Needs......................................................9
Figure 3: Dreams, Interrupted.................................................................15
Figure 4: Sleep accommodations (family and roommate) example in the superliner Amtrak.................................................................19
Figure 5: A scene of “Snowpiercer” film showing the garden car...............23
Figure 6: The entrance opens into the courtyard, Al-Suhaymi house, Cairo, 1648......24
Figure 7: A courtyard in the heart of house...............................................25
Figure 8: The malqaf, Bastikia district, Dubai.............................................26
Figure 9: The qa‘ah with a high ceiling covered by the shukhshakhah..............26
Figure 10: Saudi Arabia worldwide map..................................................30
Figure 11: Administrative Divisions of Saudi Arabia...................................32
Figure 12: Existing railways of Saudi Arabia..............................................33
Figure 13: Proposed Railroad of the Project...............................................34
Figure 14: Saudi men’s traditional/formal clothes......................................37
Figure 15: In the first row: wickerwork, weaving and Sadu. In the second row: dilal and tent making.................................................................39
Figure 16: A row of men in a traditional dance.........................................40
Figure 17: Saudi Arabian tent in a winter night........................................41
Figure 18: Student’s drawing.................................................................47
Figure 19: Student’s drawing.................................................................47
Figure 20: Programing.................................................................51

Figure 21: Programing.................................................................5
List of Symbols / Nomenclature

*Majaz*: entrance.

*Qa’ah*: Guest reception room.

*Durqa’ah*: A central part of the qa’ah with a high ceiling covered by the *shukhshakhah*.

*Shukhshakhah*: wooden lantern on the top of *durqa’ah*.

*Malqaf*: Wind catch.

*Mashrabiyyah*: Wooden windows with multifunctional use.

*Al-Mizan*: scale.
Thesis Statement

Arab springs, civil wars, and land occupations have affected many countries and territories in the Middle East, including Egypt, Syria, Lebanon, and Palestine. These revolutions have created chaos in the affected areas and prompted many people to seek immigration to Saudi Arabia.

Providing a three-day journey by train is one method to help refugees from these countries get a better understanding about their host country, Saudi Arabia. This program is designed to educate refugees while on this railroad trip and expose them to the many cultures within Saudi Arabia, giving them hope for relocating and building their future. I am proposing this solution as a solution to assist the resettlement of refugees into Saudi Arabia.
Introduction

Displacement has become one of the serious global problems in the twenty first century. It is the result of chaos created by conflicts. Many cultures and religions idealize a past that is free from the complications of large scale wars and political conflicts starting. In this idealized version of history, the main goal of being on earth was to work and produce tirelessly to construct the universe.\(^1\) Yet technological advancements make it easier to rally large numbers, and make warfare more prone to mass casualties through the use of more effective weapons. It is stated in Quran: “He has produced you from the earth and settled you in it,”\(^2\) that Allah [God] has created the sons of Adam by beginning the origination of Adam from the soil, and he has deposited the universe with all possible natural sources, wealth, and riches to work with for its prosperity.\(^3\) In order to fulfill this command, there should be materials, tools, and methods for the purpose of reconstruction the globe. The two important things are: a) the natural sources, wealth, and riches given by God; b) and our minds, mental abilities that make us think to get the maximum advantages of all potential resources.\(^4\) We are encouraged to be creative through working for ourselves and the public interests.\(^5\) Given the current state of the world, a solution which helps address ever- growing numbers of refugees is a worthy use of natural resources and our intellect.

Instead, people are consumed with possessing properties and positions. Greediness, antagonism, and wickedness are facts to start a conflict. The misunderstanding, lack of communications, and illiteracy contributed to make conflicts, which find fertile soil to expand on lands and ruin nature and people’s lives. Therefore, violation of divine instinct by giving attention to negatives (wars) rather that positives
(constructions) have created wars and conflicts. The result that our world is facing is that people have become displaced from their homes as refugees. The current system of refugee camps is not a solution despite the surrounding wars or negative events. The current way of handling the refugee problem signals to refugees that they are worthless, it is irresponsible toward oneself, and will create other unexpected problems, which will worsen to a point that cannot be controlled.

Taking into account the care about the planet and the collaboration to boost the good energies to cut out the infected part by reducing risk or helping injured people, the present thesis is putting together efforts and research to help war victims, refugees, specifically Arabs, as they recently fought for their rights and identities in The Arab Spring, civil wars, and land occupations have affected countries of the Middle East such as Egypt, Syria, Lebanon, and Palestine.
Research

*Overview on Conflicts in Middle East and Emergency Concept*

Before discussing the proposed solution to the refugee problem facing the Middle East, it is important to understand the scope of the problem that exists in the proposed countries to focus this project on.

In the definition of contemporary wars or conflicts, most of armed violence is consisted of strong hostility among identity groups based on ethnicity, language, culture, race, religion, regional roots, and other mainly differentiating factors based on values, roles, goals, and styles, which can be tagged *identity conflict.*\(^6\) That means conflicts can be occurred for mostly two reasons, a) decision makers decide on war/conflict if they will get their wealth or resources outweigh the cost spent on war itself; b) there has to be a failure in committing an agreement between parties achieving what each should perform and receive in a transaction.\(^7\) Conflicts are extremely violent and happened upon a planned process to destabilize a state entity and attack its lands. In all cases of conflicts, there will be always casualties and suffering innocents.

Whether the conflict is between two different virtual parties (states) or between groups within a state itself, it still costs overwhelming negative energy and conclude with destruction. This ruin might appear on people physically or psychologically. It may risk people their lives, homes, jobs and leave them helpless. However, lucky people only have strong faith in recovering and restarting their lives elsewhere. Although the impact of post-conflict is become inevitable reality. This chapter will highlight in details the recent
conflicts in the Middle East and the affects have been on people including their sacrifices of becoming refugees and causing of homelessness due to displacement.

The Arab Spring was the most recent conflict in some countries of the Middle East. The demonstrators aimed to bring about change. The purpose for these revolutions was to eliminate corruption in governmental regimes. In some countries, the revolutions failed, and others they succeeded. Those who were successful are now living peacefully, while the others are still suffering and there are continuing cases of displacements and deaths.

Briefly, the first revolution happened in the Middle East took a place in Tunisia; protests began on December 18, 2010, resulting in their President fleeing within a month. In Egypt, demonstrators occupied the Cairo’s Tahrir Square on January 25, 2010, and this caused the President to resign and the army to take control. Moreover, Bahrain witnessed a democracy protest that started in February 2011 and ended in March 2011. Another demonstration exploded in Libya in the same year, which lead to bombardments and ended in the death of their President in October. Following that coup, a demonstration arose in Sana’a, Yemen, causing the deaths of over forty-five killed protesters, and their president left in January 2012. Moving north to Syria, seventy-two objectors were killed during their clash with their security; the protesters persisted and faced shelling over their homes by the tyrant regime. Thousands of people fled and the conflicts continued on lands, provoking people’s hearts to either persist or leave their homes to protect their lives. These activities of unrest resulted in massive casualties afflicted by the armed violence under the label of today’s identity conflicts.
In all conflicts where the danger is surrounding territories, people start losing their assets and feeling fear. They need quick assistance for their emergency, which is an unexpected case under dangerous circumstances that requires an immediate action or relief.  

A case study on a Syrian refugee story narrated on TED website by Melissa Fleming, the head of communications for the UN's High Commissioner for Refugees (UNHCR), about Hany, a young boy who is "the conflict in Syria has left him with nothing." The article entitled “Dreams Interrupted,” where as normal life, Hany lived
peacefully in his town, attending a university, and practicing his favorite hobbies, writing poems and rapping. Hany was determined among his people, he knows that education is essential to open locked doors, he “saw many opportunities everywhere,” but after the sudden conflict has threaten his hometown, Hany fled with his family to protect themselves. During their escape, Hany left everything behind but his high school diploma and transcripts. “These are my life, my future. I left everything behind in Syria, but not these.” Eventually, Hany’s family settled down in Lebanon’s Bekaa Valley camps. He described his situation “I am wasting time here.”

With the camp’s limitation in resources. Hany lives in a humble home consists of “wooden frame and plastic sheets. Thick carpets line the floor and long cushions serve as sofas. A wood stove offers warmth. A TV connected to satellite brings news from Syria.” These elements was not enough to provide protection from external weather, specially, during severe weather of cold, snow, rain and high temperatures conditions.

As a result, the need for aid to relieve the tension is urgently needed to avoid malnutrition and death, which is a picture of ‘complex emergency’. The complex emergency is another ambiguous term that includes both social and political revolt, which results in large amounts of suffering. No one can know for certain how and why it works. Meaning that when a war hit a country, it takes a while, sometimes up to years, to get help because of the political interference.

Today, the big picture of ‘complex emergencies’ is shifting. These emergencies are not to help unexpected cases, but to offer assistance to areas that have been designed as ‘an emergency-like state’ for a long period. Assistance agencies cooperate with cases
where an emergency was announced years ago and yet the ‘urgent care’ either waited to be recognized or the emergency situation has lasted interminably for decades.\textsuperscript{11}

On community level, complex emergency has complicated arrangements and intersections, which effects the injured society because it weakens domestic economic production by impeding investment, discouraging trade, and disturbing commercial transactions. On individual level, however, this definition can ruin people’s lives as it prevents the flow of economic solvency and undermines the country capability to support itself. In addition, complex emergency, on the global level, represents a perspective of unstable countries by migrating large numbers of refugees to adjoining countries for escaping violence, but the serious consequences can be seen at increasing the regional arm trade to support the conflict.

Other affects found in refugees camps are:

- The increase of drug trafficking.
- The rise of anti-social networking to gain a living.
- The export of violence to neighboring lands\textsuperscript{12}.

As one can see, all effects by complex emergency nowadays can depict a clear view on how people in conflict communities are suffering, and if they do not get appropriate care, the doors will be opened wide for practicing prohibited and dangerous activities, until they get urgent assistance and move to a new place for a new life and continuance of building a future.

In other words, as the war, disaster, or conflict takes place in a homeland, resulting in the disruption of peoples’ daily routines [to be expanded + adding refugees
Referring to Maslow's hierarchy of needs, one of the most important aspects at the psychological level is homeostasis. In such armed violence cases, homeostasis gets imbalanced due to the instability of maintaining normal conditions or functions. Then, at the safety level, comes security of body, employment, resources, morality, the family, health, and property, where all of these values would be at any moment under serious threat. Therefore, since the base is injured, the hierarchy collapses resulting in the breaking down of self-actualization level including: morality, creativity, spontaneity, problem solving, lacking of prejudice, and acceptance of facts. Followed by esteem level, which includes: self-esteem, confidence, achievements, respect of others, and respect by others, and ultimately, the breakdown of love/belonging including: friendship, family, sexual intimacy. When people do not get their basic needs, the load work is as intense as trying to maintain a basic life style on a daily biases and work out the difficulties of the conflicts.

Figure 2: Maslow's Hierarchy of Needs (Photo: commons.wikimedia.org)
The destabilizing has been influenced by the population movements of refugees through multiple ways such as generating tough resistance to those seeking asylum. This pertinacious attitude results in extending residences in exile, and increasing violence and discomfort, which cause huge governmental issues for regional and home country\textsuperscript{13}.

The identity conflict resulted in extreme prejudices, which accompanies refugees and results in further hostility within their camps on borders. Their camps should be used as temporary shelters, but some refugees have made them as home bases for performing personal revenge that create unsafe environment for other peaceful people. This is just another aspect of the conflict. In all cases of conflicts, people experience harsh, unfamiliar, and in many cases dangerous life in temporary border camps that harms refugees’ physical, emotional, and cultural well-being.
“In much grief is much wisdom: he that masters his sorrow, masters his life and serves mankind best.” In this quotation, Circuta depicts the difficulties of refugees’ struggles in their situation by preaching that their tough experiences would flip into great wisdom if have the wiling to pursue new life. This situation may not be available for everybody. However, for many refugees the violent and harsh circumstances from which they seek to escape strengthen refugees’ skills to face obstacles despite the delays of getting urgent care or transferring to a new home.

The refugee is not simply those who relocate from place to place, but also includes all people who forced to live away from their homeland due to their nationality, race, or religion. Therefore, a conflict refugee, according to Oxford dictionary is a person who flees for refuge or safety, especially to a foreign country, as in time of political upheaval, war, or any other kind of risk endangers people’s lives. These people are still victims suffering the tragedy of their situation.

The refugee often struggles with understanding the cause of his difficult circumstance of becoming homeless, jobless, and travelling long distances without a settled home because one never expected it, or more accurately he never thinks that this difficult situation could happen to him. People born in a place and they think they will live there permanently, until unexpected harmful event happened, which coerce creatures to evacuate their homes and clime their safety. The refugee simply could not envision himself in this situation where he dislocate permanently elsewhere away from his homeland. However, in the proposed solution, the idea of creating the train is the fastest way to provide help for refugees. Under the concept of maintaining and constructing the
universe, we as human, need to collaborate with skillful, experienced, and distinguished
people to promote the wheel of development in all fields of life. The refugees has the
skills, and they only need to embrace in a stable country.

The refugees should be accepted and psychologically treated prior riding the train.
Though, in the train the main issues of the loss and confusion that many refugees face
will be taken in consideration. Mainly, to make their voyage safe, equip spaces with
comfort and privacy in order to feel home, and to prepare them mentally and physically
with meditation, relaxation, and education activities to start their lives over.

I chose to show pictures of sculptured refugees in an open air-exhibition in Gaza,
Palestine rather than real photos because as a designer it is easier to translate the
emotions into rhythm during the design process. The pictures show the refugees fleeing
their homes doomed, sad, and wounded. The idea is get the abstracted feelings and to
witness the conflict effects on people.
A Narrative Case Study to Understand a Refugee Situation

“The first few weeks were like nightmare,” Refugees’ reactions are almost the same everywhere, no experience is free of sorrow and sadness. Melissa Fleming is the Chief Communications & Spokesperson at the Office of the United Nations High Commissioner for Refugees (UNHCR) narrated a story to the world from TED Talks stage about the experience and feelings of refugees’ daily lives in camps. She highlighted some questions about the family loss, for instance, when she meet a refugee family she ask them about the bombing of their home? Who killed their son? Did the rest of the family member make it out alive? How life look like in exile and the refugee cope with it? More importantly, she keeps asking refugees she met an important question, which is: What did you take? What was the most important thing that you had to take with you when the bombs were exploding in your town, and the armed gangs were approaching your house?17

This introduction of the talk made an impression of showing what exactly the refugees have been through during their escape from the danger. Fleming's questions express the reality as she wanted to involve the audience imaginations to see the picture of the fearful people leaving their homes. Probably in such a situation, people would take portable objects, which are smaller and lighter, yet meaningful to them. These things could be referred to identification documents, certifications, or other valuable belongings that remind them of home or give them access to start a new life.

During the talk, Melissa mentioned a story of a Syrian refugee boy she knows, the boy, his name is Hany, 20 year-old, did not hesitate to take his high school diploma and transcripts. Hany stated that: “I took my high school diploma because my life depended
on it,” and he would risk his life to get the diploma. “These are my life, my future. I left everything behind in Syria, but not these.” Through the difficult times in his town, Hany explained the surrounding circumstances as unstable and scary days. He was going to school every day and he would dodge snipers, his classrooms shook with sound of bombs and shelling. His mother was afraid, every morning when her son was preparing to go school, the mother told Melissa she could not hide her fears and she kept telling her son: “Honey, please do not go to school,” and when he insisted, she said: “I would hug him as if it were for the last time.” But he said to his mother, “We are all afraid, but our determination to graduate is stronger than our fear.” Hany believes in education. That is, the education is the base of everything and with educated mind, a person can manage his life anywhere. “If I am not a student, I am nothing.” He aimed to graduate, despite the war bombing and shelling over their neighborhood, and the shooting sound make study and concentration hard in exams. Even in this dangerous and stressful environment, Hany excelled.

After receiving the horrible news of the deaths of his relatives, his aunt, uncle, and cousin were murdered in their house for refusing to leave their home, Hany fled with his family. Hany and his family quickly wrapped their luggage and escaped through a checkpoint guarded by someone they knew to a neighbor country, Lebanon. They thought their struggles would end by fleeing to Lebanon in searching for peace. However, their wishes faded as life start to look monotonous, with solely limited activates. To Hany, as an ambitious person, this routine did not work for him, he felt wasting time, missing dreams, and losing the sense of future. He described his life on borders like it is worse than knowing their home is looted or burned.
Hany speaks fluent English, mastered from music videos and Dan Brown novels. He likes poems, and during living in camps he writes and develops this skill to kill monotony. “I do it to complete my emotions.”

The reason that Syrian Refugees families are eager about their children’s education is because it is their future. It gives them hope and will for a bright future, rather than hatred.
Depend on the war situation and time, sometimes people can live in their homes pretending to live a normal life despite the obstacles they are facing during this sensitive time, and sometimes it gets so difficult and violent that civilians decide to escape because their lives have been threatened. In these cases people are forced to run from shelling, fighting causes, military offensive, and escalating violence. In both situations, either if they stay at home or escape, their lives are in serious danger. On the way to seek refuge, most who leave are women and children. They struggle to reach assistance and a safe place, perhaps they walk or travel by road, they are exposed to hazard conditions relate to health, environment, risks such as diseases, infections if they are injured, hunger, severe weather, as well as the danger of encountering wild, and sometimes deadly, animals.

Once the refugees reach a safe place, they need an urgent help with their health, their mental health, as well as an appropriate place to live. Basically, they flee danger to find peace, a secure and quite place to resettle, a new life to restart. They came in peace and they do not want to cause troubles, never want to kill, humiliate others, or face the humiliation and danger of becoming a refugee. Their big concern was security, safety, medical and mental care, migration, and resettlement.

The voyage of resettlement starts with finding the right camp, even if they have the hope to go back to their homelands, they will not be able because the minimum period to be displaced is about 17 years\(^\text{19}\). Therefore, they approach a certain camp in a country borders, where they try going through migration process to get access to the new country. In the meanwhile, through looking to their daily life in camps, where they receive only requisite supplies to get survived. According to data collected from the present cases of Syrian refugees from several sources, online articles, videos, and a
lecture at TED talks done by Melissa Fleming, the leader of UNHCR’s communications work and the chief spokesperson for the high Commissioner.

The daily routine in Syrian refugees’ camps would be divided into three categories:

Activities: start with limited activities in a way that have bored people easily and wasted their time. They woke up to queue in line to get some essential supplies for living. Most of refugees’ statues are unemployed due to limited careers, difficulty to get a job, always low wages that embarrassed breadwinners, and the issues come from traders who take advantages of refugees. Besides, they carry fears of the unknown because they feel they lost their dreams, they have equivocal future.

Environment: the camps built on a large scale of an empty space on borders of a country. It is built for a temporary stay with very basic accommodations, some camps set up tents that fabricated out of textures, while others structured small rooms made of wood panels and plastic shields for the roof. The outdoor environment is exposed to climatic fluctuations, for instance, severe weather in winter can occur, as well as extreme flooding that refugees camps are ill-prepared for. In any case of weather, under the rain, the sun, in the middle of wind people should queue to get essential supplies of food or medicines. However, there is no system for organizing living in camps.

The indoors include minimum supplies from the emergency agencies such as blankets, mattresses, kitchen sets, food, a bit of medicine. One major humiliation is the lack of privacy when everyone share the baths and kitchens. Sometimes there is no electricity and water. Additionally, many of the camps are constructed only of partitions and therefore may offer some privacy, but ultimately are not build for protection from the
outer elements. As was noted previously, many refugees will face displacement for over a
decade, therefore the current methods for handling the growing numbers of refugees is
grossly inadequate to help refugees regain self-respect and normalcy.

**Social life:** the limitation of activates and human recourses impacted on refugee
social life. As they recovering from their trauma with the help of some volunteering
psychologists, Syrian refugee try to concentrate on education for their children because
good opportunities for children to socialize outside the family shelters/camps. Although,
the struggle appears that 1 in 3 refugee children are going to school. Moreover,
networking is one aspect of the refugee social life, in camps there are number of TVs
connect to satellite bring news from their stricken hometowns.

As a result, refugees needs can be solved by delivering the urgent assistance by
transferring them in a train from the camps to their new permanent dwellings in a safe
host country, Saudi Arabia. The aim is not only to create a transportation project (regular
train), but also to educate into nearly every aspect of the train’s construction. The train
will be treated with an architectural vision through program and design process. For
instance, the train will solve the lacking of privacy in camps by providing specifications
for each case to satisfy the whole taste. There will be a coach for family, single males,
and single females. They will have a well-designed sleep accommodations for each
family and small group of 2-4 people per space.
Figure 4: Sleep accommodations (family and roommate) example in the superliner Amtrak (Photo: http://www.amtrak.com).
Analysis of a traditional Islamic-Arab home

While the refugees that the train would serve would come from a large variety of cultures, the goal of the train would be to ease some of the culture shock of being in a foreign land with different customs. To do this, the 48 hours that the refugees would spend on the train would be designed to provide as much information to the passengers as possible about the customs and traditions of their host country. To begin, one might consider looking at a traditional home.

To study a home, that means one should be conversant with all aspect related to the space. In order to get familiar with understanding the home, intensive work should be done through comprehending the anthropology of the place. The anthropology is the science in which it expresses more knowledge and details about the humankind who live, work, and use the space. By gathering more accurate information about human activities, atmosphere, cultural development, interior and exterior characteristics, and surrounded environment, they can be helpful bunch to understand how the past predecessors lived and deal within their environment. Therefore, the main key to analyze the traditional Islamic Arab homes is by knowing that these houses represent a mixture of history, culture, and experience in a framework that clarify human existence. These anthropological experiences had woven a rich fabric full of vintage stories. In the past, people addressed their architectural problems in “series of sustainable-oriented principles” and that resulted in building lasting structures, which deal harmoniously with their environment. In addition, it is important to point out the categories that work as foundations when design old homes, these two categories based on dealing with climate...
and following religion guidance. As the Arab peninsula was the source of Islam, Islamic traditions take a roll in designing.

Besides, the land is known by its hot arid climate where the old homebuilders, therefore, built homes according to find best treatments for the harsh desert climate. Despite the simplicity of building some of the traditional homes, the homes perfectly adapted with the environment due to the materials coming from the same land, which made users satisfied to live in such convenient houses. In other words, the concept was developed by tracing over current traditional Arab architecture, where shapes of the space were established on habits and traditions. One can measure the success of his design by understanding people’s needs through creating integrated space (house) that covers the daily needs of its residents such as providing security, privacy, family gathering spaces, and other activities for a convenient home.

Traditional Arab homes take a share of the aesthetic side as well. Its beauty results from its simplicity, it can be imagined by generating the two-dimensional plan to create a three-dimensional form and volume that make suitable enclosure, taken into account measuring the space according to the human body scale, to ensure the maximum comfort.

The design of traditional Islamic Arab house can be divided into three main sections, which are solving design problems in providing solutions for arid climate; traditions, privacy, and identity in regional colors and materiality. All of these sections work together for building a distinguishable architectural style. Repeatedly, it found in a traditional quote “my father’s palace where every footstep had a meaning,” that the design concept of traditional homes was clearly represented and thoughtfully designed
that each space of the palace formed according to the habits and traditions happening in that space. The Arab house, for example, has a segregation between men and women, as stated by the Islamic guide. This role explains the physical dimensions between men and women. Public spaces in Arab house, like guest salon (a reception room) was under the male’s range, while private spaces of the home, such as bedrooms and family living rooms were in the female’s control. This rule is to obtain more privacy and left the space more convenient²⁶.

This privacy considered as an essential element that influenced the space and the plan design for all traditional Muslim houses²⁷. By looking to a plan of these traditional homes, the spaces can be easily defined into public, semi-public, and private spaces. The private spaces here meant to protect the family privacy from strangers to look inside by creating “an inward looking plan with plain external walls”²⁸. Climate also reflected the design through privacy, the houses of the hot infertile countries such as Egypt, Iraq, Saudi Arabia, and India are “introverted,” meaning these homes were built facing interior focal point rather than having façades facing the street; family-life looked into the home courtyard.²⁹ Teaching this traditional layout of a home in Saudi Arabia might be crucial to helping refugees to feel less disoriented upon arrival in their host country. The aim beside the educational purpose is to provide refugees with the maximum level of comfort. In the train, being in a space arranged with natural plants and water features could relax the body that will send signals to the mind to enhance mood and helps eliminate mental tension.
The architectural elements, vocabulary, and characteristics that built a traditional Islamic-Arab houses were: the majaz (entrance), the court yard, the combination of the qa’ah and the malqaf, the takhtabush, and the mashrabiyyah. The majaz (entrance) is the start spot to enter a home; there were two entrances in Arab-houses, majaz, is the main entrance that opens into the house courtyard and doorway that also considered as external entrance opens at the ground level. After entering the home through the majaz, a blank wall will be facing the entrance, as stated before, to protect the house’s privacy from outside views. On the other hand, the doorway is simple and functional to use and not build for a vulgar display to attract attention because it is discouraged according to the modesty of the Islamic traditions. An example of showing the relationship between the home’s majaz and courtyard is displayed in Al-Suhaymi house, Cairo, 1648.
The courtyard is the second architectural elements to see by walking through the entrance. Because the courtyard was considered the heart of the house, Arabs paid intensive attention to design it for the family gathering, welcoming guests, and to pleasure eyes with finest details, which was the essential concept that adopted by Muslims from the Graeco-Roman tradition (c. 1900 BC.) in Arabia, it satisfied them and worked well with their religious and social needs. In addition, the garden arrangements of the courtyard solved many environmental issues; and the size and quantities of the courtyards vary from home to home depend on available area and resources\textsuperscript{32}. 

Figure 6: The entrance opens into the courtyard, Al-Suhaymi house, Cairo, 1648, (Photo: www.ijens.org).
The next architectural elements were the qa‘ah and the malqaf. While the courtyard was located in the middle of the Arabic house between entrance and guest room, qa‘ah was the biggest reception hall in the house to welcome and meet important male visitors. The Qa‘ah space included other spaces and elements such as the durqa‘ah, “a central part of the qa‘ah with a high ceiling covered by the shukshakhah (wooden lantern on the top) and two iwans (sitting areas) at a higher level on both the north and south sides”.

Figure 7: A courtyard in the heart of house, (Photo: www.ijens.org)
One of the most innovative environmental creations done in these Islamic-Arab houses is the *malqaf* (a wind catch), where it worked as a natural air-conditioner, a new ventilation system to adjust the air temperature to a natural blessed level into *qa‘ah*. There was no electricity involved as it completely depended on its structural strategy of renewing the air circulation into space. The *malqaf* is a shaft elevating from the ground on the top of a room, it designed in various shapes, which could be formed in a square, curved, or polygonal structure, with upper sides’ openings to allow hot air to escape from the space. The *malqaf*’s upper part mostly come in a flat shape “in order to help the upper layer of air to be heated up through exposure to the sun.” Therefore, its concept was to trap cool air “like sails capturing the wind” down the shaft to ventilate the interior of the building with refreshing breeze.

There are several facts making a culture such as environment, architecture, colors, folk arts, greetings, spoken dialect, culture vocabulary, weddings and holiday’s celebration, food, and costume. However, in this project, design process will relay on architecture as the main aspect to analyze the spaces and circulations into an Islamic Arab
House. Again, this is important for refugees who are relocating to their host country because these studies on Arab architecture is the essential key to program the interiors of the train, to use it as (1) a remedy for the refugees recovering due to lacking of privacy in their camps, and (2) educate the refugees about the host country architectural system. Besides, showing the art and techniques to deal with arid climate and sunlight.
Concept

The concept of this thesis was initially derived from the movie ‘Snowpiercer’ and the ‘Al-Mizan concept’ (scale concept) of the Islamic architecture.

Starting with the train movie, the idea behind it is that the train acted such as a lifeline, where the vehicle holds the last remaining human on earth after the warming global issue that creates a new ice age. On the movie’s description, it is written:

“It’s been 18 years since we froze the earth. The few remaining humans live on the Snowpiercer, a train on an infinite loop around the globe. For those at the front, it’s a lavish paradise of drugs and sushi in the lap of luxury; for those trapped in the tail section, life is short and cruel. But change is in the air. Curtis (Chris Evans), desperate to escape the tail of the train, plans an uprising, aided by his mentor Gilliam (John Hurt). What begins as an isolated riot explodes into a mass revolution, an all-or-nothing push to the front of the train, and a war for humanity’s future. Who will live and who will die? How far can they go? Is there hope beyond the frozen wastes?”36
Proposed solution: Train

The site of this project train. It was chosen to serve the main goal of helping refugees from suffering and expose them to the vast cultural and social aspects of selected regions in Saudi Arabia. The train works as a didactic tool that sets off to visually and mentally inform refugees with all needed materials of cities’ backgrounds including the crafts and job opportunities within Saudi Arabia to help them decide which city suits their needs to relocate.

Proposed Train

To determine the train best-suited for refugees coming to Saudi Arabia, it is important to choose the right one for the goals of this project. However, it is taken into considerations the passengers’ comfort, privacy, security, and technology as top critiques and then the aesthetic principles and educational program. Therefore, the ideal choice would be a bi-level train. This kind of train, according to the Oxford dictionary, is the space “functioning in two levels,” to accommodate more passengers on the ride more than the conventional cars. It is proven by VIA Rail Canada that this type of rail will result in decrease the cost, for instance, the dining car seats 72 compared with 23 in an ordinary car while the sleep car can accommodate 34 instead of 23 as well as decrease in maintenance operations and the staff numbers, which will drop the costs down.

The choice of location for this railroad line was highly influence by the countries north of Saudi Arabia whose peoples are seeking asylum as a result of conflict. Saudi Arabia occupies most of the Arab peninsula, and throughout its history, its strategic
location has influenced trade throughout the region. Moreover, the western side of Saudi Arabia contains the Makkah and Medina regions, which were named after the two holy Muslim cities within them. These cities are prepared to host pilgrims and visitors as a result of the annual Islamic religious pilgrimage (Hajj and Umrah), which makes the location a better candidate for the project (being able to adapt to many nationalities at a time). The regions running alongside the Red Sea have a variety of landscapes, beginning with deserts, mountains, coastal plains, and agricultural lands. The selected location will enrich the experience of the refugee passengers to help them embrace their relocation.

**Location of the train**

**Saudi Arabia**

Figure 10: Saudi Arabia worldwide map

**Location:** The Kingdom of Saudi Arabia is located in the Middle East, bordered by Iraq and Jordan to the north; the Persian Gulf, Kuwait, Qatar, United Arab Emirates to the east; Yemen and Oman to the south; and the Red
Sea to the west. It has a total area of 830,000 sq miles (2.15 million kilometers\(^2\)) and a population of 28.83 million (2013).

**Landscape:** Saudi Arabia considered one of the largest countries in the world without a river, but it has two extensive coastlines, the Red Sea and the Persian Gulf, that help with shipping (especially crude oil) with support from the Suez Canal. The natural resources in Saudi Arabia include petroleum, natural gas, iron ore, gold, and copper.

The Kingdom’s massive area and varied landscape is reflected in its climate, which is characterized by its diversity throughout the year. Due to the location on the geographic coordinates 25 00 N, 45 00 E where the sunshine vertically oriented on the land and with lack of clouds, the climate is mainly arid and dry; winters are dry with little precipitation and with great temperature extremes.

The administrative divisions of Saudi Arabia separate the country into 13 provinces; Al Jawf, Al Hudud ash Shamaliyah (Northern Border), Tabuk, Ha'il, Al Qasim, Al Madinah (Medina), Makkah (Mecca), Ar Riyad (Riyadh), Ash Sharqiyah (Eastern), Al Bahah, 'Asir, Jazan, and Najran. Saudi Arabia’s government is a monarchy.
Figure 11: Administrative Divisions of Saudi Arabia

Major Urban Areas include: the capital Riyadh, Jeddah, Makkah, Medina, and Ad Dammam. The proposed railroad would pass three of these urban cities starting with Medina, Jeddah, and Makkah.

The existing railroad network in Saudi Arabia totals 856.24 miles (1,378 kilometer).44
The proposed railroad in this thesis would pass through the provinces that run alongside the Red Sea, which include Tabuk, Medina, Makkah, Al Baha, Asir, Jizan and Najran. During the journey, the refugees will be exposed to the three themes of all seven provinces; Tabuk Theme, Hijaz Theme, and Janoub Theme. Each theme will present a region or a group of regions that are similar to each other topographically or architecturally. The goal of creating this train is to help incorporate refugees into a new culture by providing a three-day cultural immersion experience on a train that
traverses Saudi Arabia. Each of these seven regions is unique in their traditional arrangements, architectural backgrounds, and topographical features, which will be described below, starting with the illustration of the railroad route and then providing each region’s description in addition to the train interior design.

![Figure 13: Proposed Railroad of the Project.](image)

The journey starts along the Red Sea coastline from Tabuk, Medina, Makkah, Al Baha, Asir, Jizan, Najran and goes up in a loop path to Asir, Makkah, and Medina and ends in the Tabuk region. The total journey takes...
three days (passengers will have to remain inside the train at all times) to present the three themes, which include:

Theme 1: Tabuk Theme (Northwestern area) includes only Tabuk region.

Theme 2: Hijaz Theme (Western area) includes Makkah and Medina regions.

Theme 3: Janoub Theme (Southern area) represents Al Bahah, Asir, Jizan, Najran.
Modern Saudi Arabia

First and foremost, it is important to note that the inspiration from the old Saudi lifestyle and heritage elements in designing the train interiors helps reflect the identity, culture, and design of distinct perspectives from Arabia. Today, the architecture of Saudi Arabia is modern and contemporary, but cultural architecture can be found in the simple mud dwellings and black tents in a city’s old districts or out-of-urban areas. The traditional architecture evolved to “the strong shapes of modern concrete apartment buildings, office buildings, government buildings—dramatic symbols of change in a land where a more traditional shelter was the famous ‘black tent’.” Nowadays, the architecture in all Saudi Arabian regions has become similar with concrete becoming the dominant building material. Therefore, emphasizing the Saudi legacy of timeworn dwellings, traditional arts, and handicrafts by using cultural materials and colors will enhance the experience of a traveler and provide more insight into the real Saudi Arabia.

The first thing to notice once arriving in Saudi Arabia is the traditional clothes. People, for the most part, adhere to this concept. It recognized as the formal apparel for both gentlemen and ladies both in and outside home. There are three essential pieces for men, which are thobe, shemagh/ghutrah, and bisht. The thobe is a loose garment with long sleeves. It is available in white, beige, brown, navy, gray, and black colors. Usually, white is the main color choice, due to its ability to reflect the sunshine and maintain person’s body temperature.

The shemagh or ghutrah is the second piece of clothing worn with the thobe. It is a head covering made of plain white cotton (ghutrah) or embroidered automatically with red thread (Shemagh), similar to a hounds-tooth pattern. Under the shemagh/ghutrah,
men wear *taqiyah* (skullcap) that is made out of cotton, but thicker and kept white in color. As an accessory, an *agal* acts as a binding to keep the *shemagh/ghurrah* on the head.

The third piece of clothing is the *bisht*, which is a cloak-like, loose flowing garment worn over a *thobe*. It is usually worn for prestige on special occasions and holidays, but is also primarily worn by the ruling class and sheikhs. It is made out of wool, but very soft. It comes in natural colors such as cream, beige, shades of browns and gray, and black. “The word *bisht* is derived from the Persian — to go on one’s back.”

![Figure 14: Saudi men’s traditional/formal clothes.](image-url)
Theme One: Tabuk Region

Location: The Tabuk region is the kingdom’s gateway located in the northwest area of Saudi Arabia. It is close to the Jordanian border, and Tabuk City is the capital. Furthermore, it is a military town.

Geography: The Tabuk region is spread over 56,399 square miles (146,072 square kilometers) with a population of 791,535. It is quite diverse in nature, containing some ancient historical locations such as palaces and castles, deserts and mountains, and a remarkable coastline and islands “bound by sea waves that embrace spectacular coral reefs”.

Climate: The beaches along the seashore of the Tabuk region often have beautiful weather. The temperature ranges between mild and hot 77° – 104° F (25°- 40° C) during summer, and during the winter, the region has cooler weather with a gentle breeze, usually ranging between 41° – 77° F (5°- 25° C). Snow is common with temperatures reaching lows of 21° F (−6° C). However, snow is uncommon as it only snows every 3 - 4 years.

History: Tabuk region is quite unique in many ways; there are many festivals held annually in Tabuk City, during which people show and share their joy about their heritage, and different types of arts are showcased:

- Handicrafts: The traditional crafts that appear in the desert environment are distinct from those that are conceived and used in the coastal or agricultural environments. Due to the unique topography in the Tabuk region, the desert environment and the coast have a distinct influence on the crafts. Some traditional
crafts include: woodwork and traditional carpentry, tent making, weaving and Sadu, stone inscriptions, wickerwork, weaving strings and ropes, *dilal* making (Arabic coffee pots), shipbuilding with wood *alqadah*, and crafting fishing tools.

Figure 15: In the first row: wickerwork, weaving and *Sadu*. In the second row: *dilal* and tent making.

- **Traditional Cuisine**: In general, there are variety of traditional dishes in Tabuk depending on the different cultural environments. Both the coastal areas and desert areas have different types of typical foods served. *Al-Sayyadiah* is one of the famous dishes in the coastal area, which is rice, cooked with fish broth, served with either fried or grilled fish and Tehina (sesame paste). On the other hand, the desert region often serves *Al-Sileeq* and *Al-Mandi* which are both dishes served with lamb and rice; *Al-Marqouq* and *Matazeez* is made by boiling flattened discs of brown dough in vegetable and meat broth.
- **Folklore:** *Ardah, Al-Samiri,* and *Al-Dahha* are names of famous traditional dances that are performed in joyful celebrations in the Tabuk region. *Al-Dahha,* for instance, is a beautiful dance performed in the form of two rows of men standing opposite one another, who move their feet and hands together in a consistent rhythm. This region is also known for playing an instrument called “rababa.” *Al-Hujaini, Al-Zawba’I,* and *Al-Mashoub* are all performed using this instrument, and each one of these tunes has its own lyrics. Flirting poems are mostly used, and everyone performs with coordinated movements.

![Figure 16: A row of men in a traditional dance.](image16)

**Architectural themes:** Since 1932, when the Saudi royal family began to rule the country, the people of the Tabuk region have been living in either tents or mud dwellings. This closely follows the lifestyle of the Bedouins with simple designs for their architecture and interior living, which is often filled with bold textile colors; they use natural textures such as fur, wool, and cattle tanned skins for their furniture/interiors and other simple environmental materials.
Summary:

Tabuk Region and the general modern lifestyle of Saudi Arabia will influence the entry car’s design. Hospitality is the focus of the design (with a foot bath upon arrival and the serving of Arabic coffee and dates). Traditional national clothing and patterns will be used throughout as applicable. For instance, the *agal* will be overlapping in circles, which will used to create partitions with other contemporary materials.

Figure 17: In the clockwise direction: Saudi Arabian tent in a winter night; the famous interior red-striped traditional textile; black tents of Arabia woven manually by women.
Theme Two: Makkah and Medina Regions

Makkah Region:

Location: Makkah region is located on the western coast of Saudi Arabia. It contains the Muslims’ most sacred city on earth (Makkah Al Mukarramah); Jeddah is the gateway for pilgrims to Makkah and an important port and the commercial capital of the Kingdom; Taif city including Hada and Shaffa, the gorgeous high mountains that are the focal points of the region, are the major locations of Makkah province.  

Geography: The area of Makkah is spread over 59,131 square miles (153,148 square kilometers) with a population of 6,915,006. Due to the high numbers of visitors to Makkah city, it has a variety of people from different cultures all coming to perform their rituals of worship/pilgrimage.

Climate: The region enjoys a various climate, cool breezes from the mountains in Makkah Al Mukarramah city to warm weather on the seashore in Jeddah. However, Taif city, which is located in the highlands, has the best weather in summer.

The weather in the most important cities in the Makkah region:

- Jeddah has a hot desert climate. Because it is a coastal city, the humidity is high during summer, but drops slightly during the winter. It rains very little during the winter and spring, but most rainfall is described as showers accompanied by thunder. The temperature varies from 65 - 102°F (73° - 38°C) and rarely drops below 59°F (15°C) or goes above 106°F (41°C).

- Makkah’s climate is influenced by its location as it sits 300 meters above sea level and is surrounded by the mountains that trap the warmth during the year. It rains
very little during the winter. The temperatures range from 66° - 110°F (18° - 43°C) and is rarely below 61°F (16°C) or above 115°F (46°C).\(^{55}\)

- Taif’s climate influenced by its location on highlands. It sits 5577 - 8202 feet (1700 – 2500 meters) above sea level and has moderate weather in the summer and cold weather in the winter.\(^{56}\) The temperatures range from 48 - 95°F (8 - 35°C) and is rarely below 42°F (5°C) or above 99°F (37°C).\(^{57}\)

**History:** For thousands of years, Makkah city has been the Jewel of the Arab and Islamic communities, and it is honored for its religious landmarks, extremely high mountains, traditional shops and tourist based activities. It has a rich, energetic culture that is formed by the various global cultures that arrive to its land through commerce and the journeying of pilgrims.

- **Traditional Cuisines:**

In Makkah, there are three main type of cuisines, which can be divided into costal, mountain, and desert dishes. The variety of foods in Hijaz region is due to the trade and pilgrim activities, where international travelers to the kingdom influence the taste of traditional cuisines. Mainly, the famous traditional food in Makkah are: Al-Ma’soub (mashed banana pie), Al-Muta’bbaq (a folded pastry case with a either a sweet filling ‘banana’ or salty filling ‘cheese/egg and onion), Al-Saleeq (rice cooked in chicken forth and milk), Al-Harisah (grain cooked in chicken/lamb forth), Al-Sayyadiyah (rice cooked in fish forth and serves with fish), Al-Munto (steamed pastry that fills with ground veal and onion) , Al-Kabab (grilled ground meet), and Al-Farikah (groats cooked as rice).\(^{58}\)
Medina Region:

Location: It is located in the northwestern side of Saudi Arabia along with Red Sea coastline. Medina (Al Medina Al Munawarah) is the capital of the region and is the second holiest city for Muslims and the city of the Prophet Muhammad (peace be upon him). Medina (known as “The Radiant City”) is characterized by its peaceful and tranquil atmosphere known for its historical locations, battles sites during the spread of Islam, mosques, museums, traditional old markets, new malls, and boundless date palm groves.59

Geography: The Medina region is spread over 227.4 square miles (589 square kilometers) with a population of 1,512,724. The region’s topography contains mountains, stony areas, valleys, and underground water. Due to the volcanic nature of the region, it has many different kinds of rocks, such as granite, basalt, and metamorphic rocks with beautiful colors. Generally, the land of Medina described as a “fertile volcanic hill.”60

Climate: The area has a hot and dry climate. The climate is affected by the Mediterranean Sea to the north and by the seasonal climate to the south. The temperatures range between 96° – 113°F (36° - 45°C) during the summer and between 95° – 68°F (15° - 20°C) during the winter. It rains very little in Medina, but most often the rain comes in November and January. There is low humidity during of the year.61

History: The impressive history of Medina Region is quite extensive. Therefore, the most important facts to focus on include the heritage, architecture, and lifestyle of the region. Medina is surrounded by a number of historical sites with its ancient tombs such as Al-Hijr Archaeological (Madinah Sulayh), which is registered on the UNESCO’s World
Heritage list.\textsuperscript{62} Medina was the location of the arrival train station of the Hejaz Railway that was transformed into museum and opened in 2006. Furthermore, the architecture in Makkah and Medina regions are similar.
There Three: Al Baha, Asir, Jizan, and Najran Regions

Al Baha Region:

**Location:** The Al Bahah Province is located in southwest Saudi Arabia, between the Makkah and Asir regions. It is the smallest of the 13 provinces of Saudi Arabia. The capital of the province is Al Bahah city. The province is famous for its production of honey in addition to its agricultural production of vegetables, grain, fruit, and dates.\(^6\)

**Geography:** The Al Bahah region is spread over an area of 3,831 square miles (9,921 square kilometers) with a population of 411,888.\(^4\) The region has an unspoiled nature, a collection of green mountains and valleys due to constant rainfall, wild forests that capture the attention of tourists, waterfalls, and extensive stony highlands.\(^5\)

**Climate:** Al Baha region has a stable gentle breeze blowing throughout the region. It has a moderate climate with temperatures ranging between 53° - 73°F (12° - 23°C). Al Baha’s climate is mild in summer and cold, foggy weather in the winter due to being 8202 miles (2500 meters) above sea level.\(^6\)

**History:**

- **Traditional Cuisines:** There are several famous traditional dishes in this region. They are prepared and cooked using local ingredients, since the Al Baha region is an agricultural area. These dishes are still served on special occasions and weddings and exist in restaurants in most regions in Saudi Arabia. Mostly, the area’s cuisine is centered on beef served with rice, broth, and bread.\(^7\)
Case Studies

The three case studies are:

Case study #1: Gyanodaya Express, Educational train:

The Vice Chancellor of The University of Delhi, Professor Dinesh Singh, was behind the creative idea of the "Gyanodaya Express". Both the University of Delhi and Indian Railways worked together to create an educational journey that was in motion within a couple of months. The idea behind this train is to travel for 12 days through western and central India, and comprehend the mixture of cultures and history in the country. This journey included 940 NCC and NSS students came from 32 different colleges and 60 teachers. Areas that were visited includes Sabarmati, Madgaon, Wardha, Mumbai, Naval Base and ISRO. The cause behind this journey in Gandhian spirit is "To impart experiential education and bring awareness of nation building, the itinerary was designed to promote confidence, knowledge and empathy in the students".  

Students were given variety of subjects including geography, language, food habits, literature and more. They also had access to a library, laptops and internet. Generally, the big picture behind this journey is to apply "Gandhi's ideal of integrating the mind, heart and hands". All put together in this educational train.

The idea behind this case study is creating a learning experience in motion. The idea of an educational train allows not just learning from books but to experience on hand what has been learned. This helps absorb any educational subject in many different ways,
making this experience educational yet entertaining and interesting.

**Case study #2, Technology:**

What is better than sightseeing NYC with "The Tour"! A vehicle technology that combines audio and visual sightseeing experience. It is the new way to tour NYC staring with its rich history to getting in touch with the visual moments. This vehicle is considered the largest to be in NYC streets, it is 45ft long, 14ft tall and 8ft wide, it can take up to 49 passengers. "Inside the coach, you'll find 40 in-vehicle plasma monitors, surround sound, 3000 LED lights and five exterior LED arrays that keep guests immersed in the history of New York City".  

The reason behind this case study is to understand the use of technology while traveling or touring in this case. The idea of combining viewing and area while using technology make the experience intriguing and very interesting. This idea may increase the interest in learning what is giving while enjoying the ride.

**Case study #3: the Venice Simplon-Orient-Express train, Multifunctional use:**

One of the most luxuries and romantic trains in the world is the Venice Simplon-Orient-Express train. Travels through fascinating cities of Europe, allowing passengers to enjoy breathtaking scenery throughout the journey. This train is considered to be a work of art, considering the vintage cabins, the great entertainment and artistic, verity cuisine. This allows travelers to experience the finest and luxuries traveling experience.
"Savour the beautiful surroundings. Marvel at the opulent interiors, sparkling crystals, plush fabrics and polished wood. Relax in your own cabins as you look out over stunning landscape". This experience also allows travels to socialize and meet other people, who enjoy traveling and adventure.

The reason behind this case study is to understand the idea of multifunctional use of a space. Allowing one area to be used for setting, socializing, dinning and sleeping throughout a journey.
Program

Analysis of a typical Saudi home

Design programing diagrams

- Graphic documentation of spatial and conceptual relationships
- Adjacencies and organization of space.

Programing:

The desired on the programming is to design the train cars according to Saudi culture, considering the identity of the land and its people to ensure smoothing the difficulties on the refugees’ passengers.

- What’s possible? (Concept Development!)
- The key design ideas discovered through programming:
Figure 20: Programming
To design the train reliefs for refugee passengers, important considerations should take a place. As of researching the refugees background, it was found that they concerned lack of security, lack of communication, and lack of technology. The design quality should cover comfort, security, privacy, and passenger accessibility to achieve the main goal of the project. Additionally, the design aims at educating the refugees about the host land and their culture in order to ensure the smooth transition. However, there will be concentration on enlightening people about each region job offers, especially about the traditional hand crafts.

**Figure 21: Programming.**
End Notes:

1 Al Saffar, Hassan. "Human and Reconstruction of the Earth (Al Insan Mukallaf Be Emaar Al Ardh)." Hassan Al-Saffar.
5 Al Saffar, Hassan. "Human and Reconstruction of the Earth (Al Insan Mukallaf Be Emaar Al Ardh)." Hassan Al-Saffar.
10 Ibid.
16 Ibid, 23.

18 Ibid

21 Ibid
22 Ibid
23 Ibid
25 Ibid
26 Ibid
27 Ibid
28 Ibid
29 Ibid
30 Ibid
32 Ibid
54 Ibid
56 Ibid
57 Joon-Ho, Bong. Snowpiercer (2014). South Korea
60 Ibid
64 Ibid
89 "Handbook on Gyanodaya Educational Trip." http://www.du.ac.in/.
90 "Handbook on Gyanodaya Educational Trip." http://www.du.ac.in/.
Bibliography


