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THE ARCHITECTURE OF COLLAPSE

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SYRACUSE UNIVERSITY SCHOOL OF ARCHITECTURE
THE WORLD IS CHANGING AROUND US. THERE IS NO MORE DENYING IT. WE ARE RUNNING OUT OF RESOURCES. WE ARE POLLUTING OUR AIR AND WATER. SEA LEVELS ARE RISING, AND WITH IT, NATURAL DISASTERS: HURRICANES, EARTHQUAKES, TSUNAMIS, WILDFIRES, DROUGHT. WE ARE KILLING EACH OTHER. ECONOMIES ARE COLLAPSING AND COUNTRIES ARE DISSOLVING. THE WORLD IS CHANGING. STORIES OF AN APOCALYPSE HAVE BEEN PREVALENT IN OUR SOCIETY FOR DECADES, BUT THEY MAY NOT BE A THING OF SCIENCE FICTION ANYMORE. WHEN THE WORLD DOES CHANGE, WHAT ARE ARCHITECTS GOING TO DO ABOUT IT?

HYPOTHESIS

An architecture must be designed to enable the survival of people when existing infrastructure fails.
METHOD

STEP 1: CHOOSE A SCENARIO
STEP 2: WRITE A NARRATIVE OF GIVEN SCENARIO
STEP 3: DRAW "SNAPSHOTS" OF MOMENTS FROM NARRATIVE
STEP 4: ANALYZE THE PHYSICAL AND ARCHITECTURAL IMPLICATIONS OF THE DRAWING
STEP 5: EDIT THE NARRATIVE/SNAPSHOTS ACCORDING TO ANALYSIS
STEP 6: RE-ANALYZE THE NARRATIVE AND SNAPSHOTS
STEP 7: DESIGN AN ARCHITECTURE BASED ON ANALYSIS
Research for this project began with a look into the type of scenario that would be created. Science fiction, although often thought of as entirely impossible, has strands of truth woven in. Many of the worlds, machines, vehicles, buildings, and so on, presented in science fiction have their roots in fact.
The world of science fiction offers a wealth of examples of possible scenarios for a world that has experienced some sort of change. From a post-nuclear war zone, to the zombie apocalypse, to severe climate change, these artifacts deal with the reality of an extreme divergence from our current world.
THE DAY AFTER TOMORROW FOLLOWS A FAMILY AS THEY ATTEMPT TO SURVIVE A SUDDEN, EXTREME BLIZZARD\(^2\). IN THE FILM, THE SON BECOMES STRANDED IN MANHATTAN AS A SUPER-STORM, CAUSED BY “ABRUPT CLIMATE CHANGE”, TAKES THE NORTH EAST PART OF THE UNITED STATES. THE BOY MUST FIND A WAY TO SURVIVE THE STORM WITHOUT MODERN AMENITIES BY ADAPTING THE EXISTING OBJECTS AROUND HIM TO SUIT HIS NEW NEEDS.

WHILE A SUDDEN ICE AGE CONSUMING OUR PLANET IN A MATTER OF DAYS IS NEARLY IMPOSSIBLE, ABRUPT CLIMATE CHANGE IS A CLIMATE THEORY MODEL BASED ENTIRELY IN SCIENCE.

\(^2\) The Day After Tomorrow, dir. Roland Emmerich, perf. Jake Gyllenhaal, Emmy Rossum, and Dennis Quaid (United States: 20th Century Fox, 2004), DVD.
ABRUPT CLIMATE CHANGE

THE THEORY OF ABRUPT CLIMATE CHANGE IS AN EXTENSION OF GLOBAL WARMING. THIS MODEL EXPLAINS THAT DUE TO GLOBAL WARMING, THE POLAR ICE CAPS, AS WELL AS GLACIERS, ARE MELTING AT AN ALARMING RATE. THIS IS CAUSING AN IMMENSE AMOUNT OF FRESH WATER TO ENTER THE UPPER ATLANTIC OCEAN. THE OCEAN SYSTEM ON OUR PLANET IS VERY SENSITIVE, AND IS RESPONSIBLE FOR A SIGNIFICANT PART OF OUR ENVIRONMENT. WHEN THE SYSTEM BECOMES UNBALANCED, CATASTROPHIC REPERCUSSIONS CAN BE SEEN AROUND THE WORLD.¹


² See diagram for visual representation.

ADDITIONALLY, THE EL NiÑO SYSTEM IN THE PACIFIC WILL ALSO CHANGE. NOTORIOUS FOR ITS DEADLY STORMS AND TSUNAMIS, A DROP OF JUST 2˚F COULD INTENSIFY THE STORMS TWO-FOLD. A CHANGE OF 8˚F-12˚F WOULD BE DEVASTATING. THE WORST EL NiÑO STORM ON RECORD OCCURRED IN 1998, LEAVING 10,000 DEAD AND BILLIONS OF DOLLARS IN DAMAGE. IF THIS DROP IN TEMPERATURE WERE TO OCCUR, IT WOULD BE SAFE TO SAY THAT ALL EL NiÑO STORMS FROM THEN ON WOULD SURPASS THE STORM OF 1998.

WHILE THE STORM SYSTEMS WREAK HAVOC ON THE COASTS, SEVERE AND LENGTHY DROUGHTS WOULD HIT THE INLAND AREAS. 40% OF THE WORLD’S FOOD COMES FROM THESE BREAD BASKETS. IF THEY WERE TO ALL SIMULTANEOUSLY EXPERIENCE THESE DROUGHTS, THERE WOULD NOT BE ENOUGH FOOD TO MAINTAIN THE CURRENT POPULATION OF EARTH.

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BETWEEN THE BLIZZARDS AND ICE STORMS IN THE NORTH, THE DROUGHTS INLAND, THE TSUNAMIS, AND MUDSLIDES AND HURRICANES IN THE TROPICS, RESOURCES WILL BE SCARCE. IT WILL BECOME IMPOSSIBLE TO MAINTAIN THE CURRENT POPULATION. GOVERNMENTS WILL HAVE TO DECIDE WHO NEEDS OR DESERVES THE FEW RESOURCES THEY DO HAVE, AND MANY PEOPLE WILL BE LEFT TO SURVIVE ON THEIR OWN.

TODAY, THE CARRYING CAPACITY OF THE EARTH IS ABOUT 8 BILLION PEOPLE. IF ALL OF THESE EVENTS WERE TO OCCUR, THE CARRYING CAPACITY OF THE PLANET WOULD DROP TO CLOSE TO 2 BILLION PEOPLE. 6 BILLION PEOPLE WILL NOT SURVIVE.

Much of the issue of climate change has to do with resources. This, of course, has been a hot topic in politics for some time. As it is, there are not enough resources to support the population we have today. People are starving, sick, dying. What would happen when a world wide catastrophe did occur?

According to Abraham Maslow, a sociologist and psychologist, what people need to survive and exist can be ordered in a pyramid. The theory of the pyramid is that the next level cannot exist without the level below it. He believed that this can apply to human need as well.

On the bottom tier are the physiological needs. This includes anything and everything that has to do with how the body functions. Some of these needs include air, water, food, heat, and sex.

The second tier is safety. These needs have to do with security, stability, protection, order, and law.

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The third tier involves the feeling of love and belonging. The desire for friends, family, culture, children, physical contact, and community would fall into this category.

The fourth tier has to do with esteem, both self and reputation. The need for fame, status, attention, strength, achievement and confidence all relate to this tier.

The fifth tier is self-actualization. This tier talks of the desire to achieve all that is possible for oneself. The need to reach one's potential can be found here.

The sixth tier is the desire to know and understand. Learning, curiosity and experience are all driven by this category.

The seventh and final tier is aesthetic. This relates to the need for symmetry, order, completion and beauty.

Of course, for each individual these needs will be different. The overarching concept, however, is that until the bottom tier is fulfilled, a human will not desire the next level up. If one is starving, they will not be concerned about the laws.
AFTER COMPILING THE RESEARCH FROM THE MOVIES, ABRUPT CLIMATE CHANGE AND MASLOW’S BASIC NEEDS, I WAS ABLE TO IMAGINE A SCENARIO FOR THE PROJECT.
THE SCENARIO WOULD TAKE PLACE IN THE NEW ENGLAND REGION OF THE UNITED STATES AFTER A MAJOR BLIZZARD HAS HIT.

THREE INDIVIDUALS, EACH WITH THEIR OWN NARRATIVE, WOULD BE ATTEMPTING TO SURVIVE THE CATASTROPHE BY THREE DIFFERENT MEANS.

THE FIRST CHARACTER, THE NOMAD, WOULD BE FROM A SMALL TOWN IN RURAL MAINE.

THE SECOND CHARACTER, THE ADAPTER, WOULD BE FROM BOSTON.

THE THIRD CHARACTER, THE RENOVATOR, WOULD BE FROM A SMALL CITY IN NORTHERN CONNECTICUT.
THE THREE TYPES OF CHARACTERS CHOSEN REPRESENT "KEY STAKEHOLDERS" IN THE NEW WORLD. THEIR NEEDS WOULD HAVE TO BE ADDRESSED BY ANY NEW TYPE OF ARCHITECTURAL DESIGN. FIRST I HAD TO IDENTIFY THE CHARACTERISTICS OF EACH STAKEHOLDER.
THE NOMAD

ON THE MOVE

SELF SUSTAINABLE/RELIANT

TRAVELS WITH ALL TOOLS AND EQUIPMENT

LIVES OFF OF THE LAND
THE ADAPTER

- SEMI-TRANSIENT
- SELF SUSTAINABLE/RELIANT
- USES FOUND ARCHITECTURE AND INFRASTRUCTURE
PERMANENT
CHANGES THE ENVIRONMENT AROUND THEM
SENSE OF COMMUNITY AND SECURITY
LIVES OFF OF THE LAND
After identifying who the key stakeholders were, I had to find precedents for them. Through the science fiction films and television shows, I was able to determine which of the three stakeholders major characters fell under.

Using these characters as precedents, I was able to determine what types of materials, tools and architecture they utilized in their apocalyptic scenario.
THESE GRAPHS IDENTIFIED WHAT THE DIFFERENT CHARACTERS WOULD USE GIVEN AND EXTREME SITUATION.

THIS PROJECT, HOWEVER, WILL NOT ATTEMPT TO DESIGN ALL OF THE TOOLS AND MATERIALS NECESSARY FOR SURVIVAL.

ON THE CONTRARY, THIS PROJECT WOULD LIKE TO IDENTIFY THOSE ITEMS THAT SHOULD BE DESIGNED FOR THE GAP BETWEEN THE MATERIAL AND THE ARCHITECTURE WHICH MUST BE BRIDGED WHEN ARCHITECTURE FAILS UNDER EXTREME CONDITIONS.

TO UNDERSTAND THAT RELATIONSHIP, I HAD TO IMAGINE HOW THE OBJECTS WOULD BE USED UNDER CURRENT DAY CONDITIONS.
WHAT CAN BE SEEN QUITE CLEARLY IS THE GAP THAT EXISTS BETWEEN MATERIAL AND ARCHITECTURE. MOST DESIGN FALLS IN EITHER THE MATERIAL/TOOL SIDE OR THE ARCHITECTURAL. LITTLE IS GIVEN TO “THE GAP”.

IN SCIENCE FICTION, MANY OF THE TOOLS AND MATERIALS USED TO SURVIVE BRIDGE THAT GAP, ALLOWING FOR HUMANS TO CONTINUE TO LIVE IN SPACES WHERE DESIGN HAS FAILED. THESE “BRIDGE THE GAP” OBJECTS ARE WHAT THIS PROJECT SEEKS TO DESIGN, SO THAT GIVEN AN EXTREME CIRCUMSTANCE, WE WILL BE READY.
[THE NOMAD]

SLED
SNOW SUIT
GO-KART
TARP
JACKET
FACTORY
SHACK
WAREHOUSE
MOTORCYCLES
TENT
CARS
ROADS
LOG
TREE
CAVE
CORNUCOPIA
[THE ADAPTER]

RAFT          TUNNEL
TRUCK         RESTAURANT
PARKING GARAGE POWER PENDANT
HELE-BIKE     WAGON
CAR
ROADS
PLANE
HOUSE
GIVEN AN UNDERSTANDING OF THE CHOSEN SCENARIO AS WELL AS THE CHARACTERS THAT WILL BE PLAYING A PART, THE NEXT STEP IS TO WRITE THE NARRATIVE. THE NARRATIVE IS MEANT TO PROVIDE AN EXAMPLE OF WHAT THE EXPERIENCE OF THESE CHARACTERS MAY BE, SO THAT I CAN BETTER UNDERSTAND WHAT THEY MAY NEED TO SURVIVE, AND IN TURN, WHAT WILL NEED TO BE DESIGNED.
"I said I'm coming," she said. She opened a door and shoved a box onto the table. "There's a lot in this place. I expect it to be more than I thought."}

"Yes, sir."}

"I'm going to need you to be interested. I expect you to stay on this, no matter what."

"Yes, sir."}

"And I expect you to make sure the man in the yellow suit is aware of what's happening."

"I will, sir."}

"And I expect you to keep me informed of any developments."}

"I will, sir."
ANALYSIS

ONCE THE NARRATIVE IS COMPLETE, THE "SNAPSHOTS" ARE CREATED. THESE ARE INDIVIDUAL MOMENTS DERIVED FROM THE STORY THAT ARE DRAWN FROM A CERTAIN PERSPECTIVE.

THESE SNAPSHOTS ARE THEN ANALYZED SPATIALLY TO UNDERSTAND THEIR PHYSICAL IMPLICATIONS.
DESIGN

FROM THIS ANALYSIS, AND WITH THE USE OF THE “BRIDGE THE GAP” EXAMPLES, I WAS ABLE TO NARROW DOWN WHICH OBJECTS WOULD FALL INTO THE CATEGORY OF DESIRED DESIGN. FROM THERE I WAS ABLE TO ISOLATE ONE OBJECT FOR EACH CHARACTER TO CARRY OUT THROUGH DESIGN.
[THE ADAPTER]
WORK CITED


RESOURCES


Mad Max. Directed by George Miller. Australia: Crossroads, 1979. DVD.


