

Syracuse University

SURFACE

Architecture Thesis Prep

School of Architecture Dissertations and
Theses

Fall 2016

The Architecture of Collapse

Alison Sekerak

Follow this and additional works at: https://surface.syr.edu/architecture_tpreps



Part of the [Architecture Commons](#)

Recommended Citation

Sekerak, Alison, "The Architecture of Collapse" (2016). *Architecture Thesis Prep*. 346.

https://surface.syr.edu/architecture_tpreps/346

This Thesis Prep is brought to you for free and open access by the School of Architecture Dissertations and Theses at SURFACE. It has been accepted for inclusion in Architecture Thesis Prep by an authorized administrator of SURFACE. For more information, please contact surface@syr.edu.

THE ARCHITECTURE OF COLLAPSE



ALISON SEKERAK

THE ARCHITECTURE OF
COLLAPSE

ALISON SEKERAK

ADVISORS:

PROFESSOR BRIAN LONSWAY

PROFESSOR AMBER BARTOSH

PROFESSOR IVAN BARNAL

DECEMBER 16, 2017

SYRACUSE UNIVERSITY SCHOOL OF
ARCHITECTURE

CONTENTS

INTRODUCTION.....	1
HYPOTHESIS.....	3
METHOD.....	5
RESEARCH.....	7
SCENARIO.....	23
PRECEDENTS.....	27
NARRATIVE.....	65
ANALYSIS.....	71
DESIGN.....	79
RESOURCES.....	87

INTRODUCTION

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 DISASTERS¹. 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?

1. Garrett Samaria, "Are Natural Disasters Increasing?," The Borgen Project, 2015, accessed December 13, 2016, <http://borgenproject.org/natural-disasters-increasing/>.

HYPOTHESIS

AN ARCHITECTURE MUST BE
DESIGNED TO ENABLE THE
SURVIVAL OF PEOPLE WHEN
EXISTING INFRASTRUCTURE
FAILS.

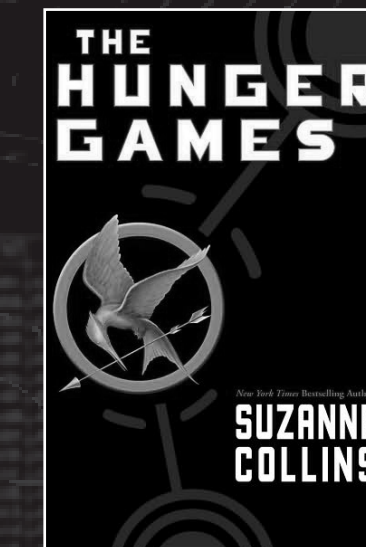
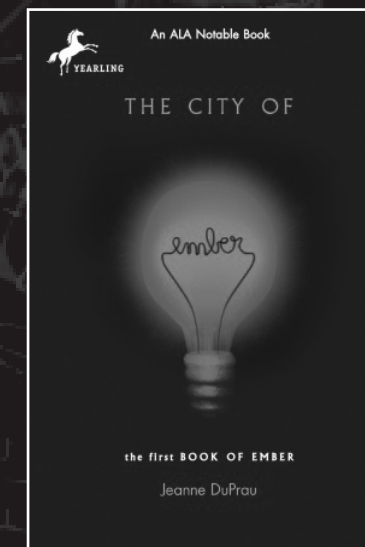
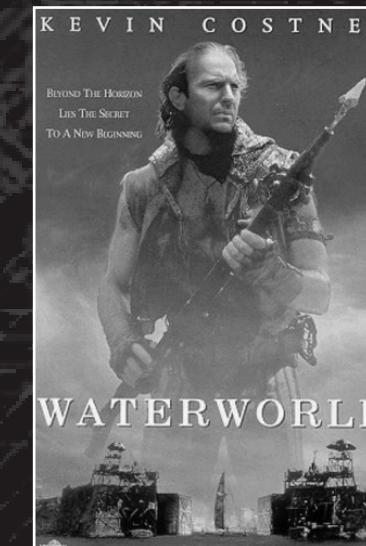
METHOD

- 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

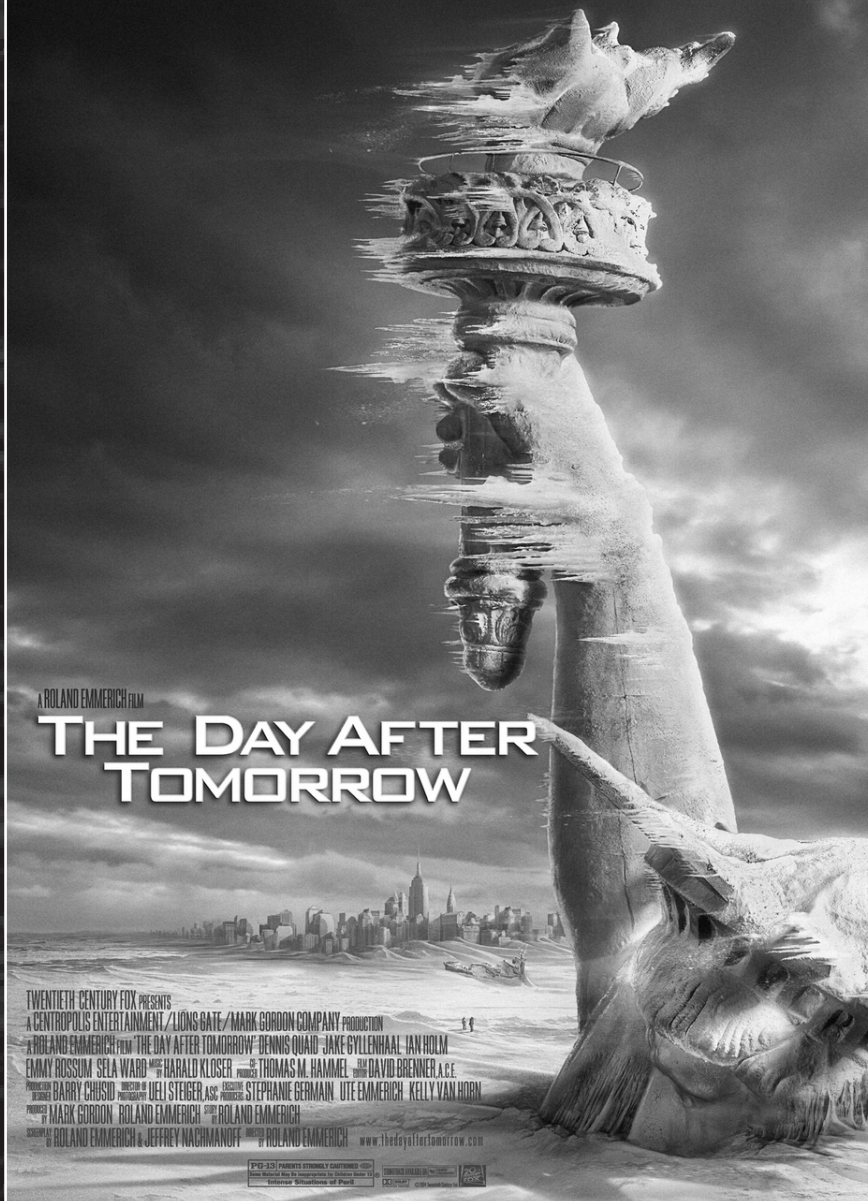
RESEARCH

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.



FROM THE DIRECTOR OF INDEPENDENCE DAY



THE DAY AFTER TOMORROW FOLLOWS A FAMILY AS THEY ATTEMPT TO SURVIVE A SUDDEN, EXTREME BLIZZARD². 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 WORLD³.

AS THE FRESH WATER ENTERS THE OCEAN, THE SALINITY OF THE WATER CHANGES. THIS COULD CAUSE A CHANGE IN THE CURRENTS OF THE OCEAN, WHICH DEPEND ON A CERTAIN BUOYANCY TO CONTINUE ON THEIR CURRENT PATH. IF ENOUGH FRESH WATER ENTERS THE NORTHERN ATLANTIC, THE GULF STREAM, WHICH IS RESPONSIBLE FOR THE CURRENT CLIMATE OF THE NORTH EASTERN PART OF NORTH AMERICA AS WELL AS WESTERN EUROPE, WOULD SHIFT SOUTH. THIS WOULD MEAN THAT THE WARM WATER FROM THE EQUATOR WOULD NOT REACH THOSE AREAS, WHICH COULD CAUSE AN 8°F-12°F DROP IN AVERAGE TEMPERATURE.

3. Richard B. Alley, *The Two-mile Time Machine: Ice Cores, Abrupt Climate Change, and Our Future* (Princeton, NJ: Princeton University Press, 2000).



1. CURRENT DAY



2. GLOBAL WARMING



3. ICE CAPS MELT



4. FRESH WATER ENTERS NORTH ATLANTIC



5. FRESH WATER INTERRUPTS CURRENT



6. INCREASED HURRICANES

WHILE THE NORTHERN PART OF THE WORLD BECOMES DRASTICALLY COLDER, THE AREA AROUND THE EQUATOR WILL BECOME INCREASINGLY HOT. WITH THE ENERGY FROM THE GULF STREAM NO LONGER LEAVING THE AREA AND GOING NORTH, THE HOT ENERGY AROUND THE TROPICS WILL INTENSIFY, CAUSING AN ESCALATION IN THE NUMBER AND FREQUENCY OF CATEGORY 4 AND HURRICANES.

ADDITIONALLY, THE EL NINO 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 NINO 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 NINO STORMS FROM THEN ON WOULD SURPASS THE STORM OF 1998⁴.

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.

⁴ Christopher Hill, "Abrupt Climate Change and the Atlantic Meridional Overturning Circulation: Sensitivity and Non-linear Response to Arctic/sub-Arctic Freshwater Pulses. Collaborative Research. Final Report," 2015, accessed October 2016



7. EL NINO



8. CURRENT TSUNAMIS



9. INCREASED TSUNAMIS



10. INCREASED MUDSLIDES



11. CURRENT GLOBAL AGRICULTURE



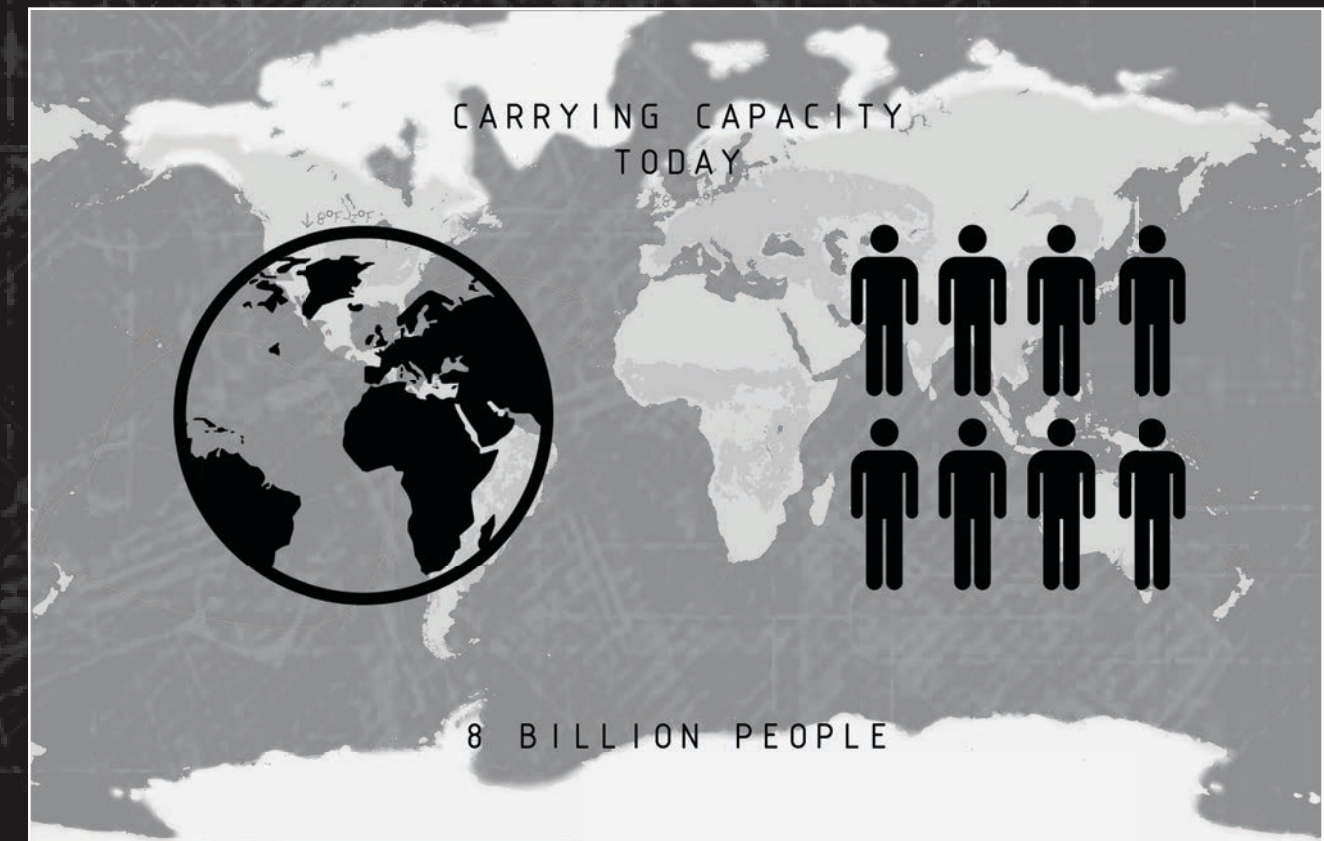
12. AGRICULTURE AT 40%

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 PEOPLE⁵. 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.

5. Torbjörn E. Törnqvist and Marc P. Hijma, "Links between Early Holocene Ice-sheet Decay, Sea-level Rise and Abrupt Climate Change," *Nature Geoscience* 5, no. 9 (2012)



MASLOW'S BASIC NEEDS

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 TODAY⁶. PEOPLE ARE STARVING, SICK, DYING. WHAT WOULD HAPPEN WHEN A WORLD WIDE CATASTROPHE DID OCCUR?

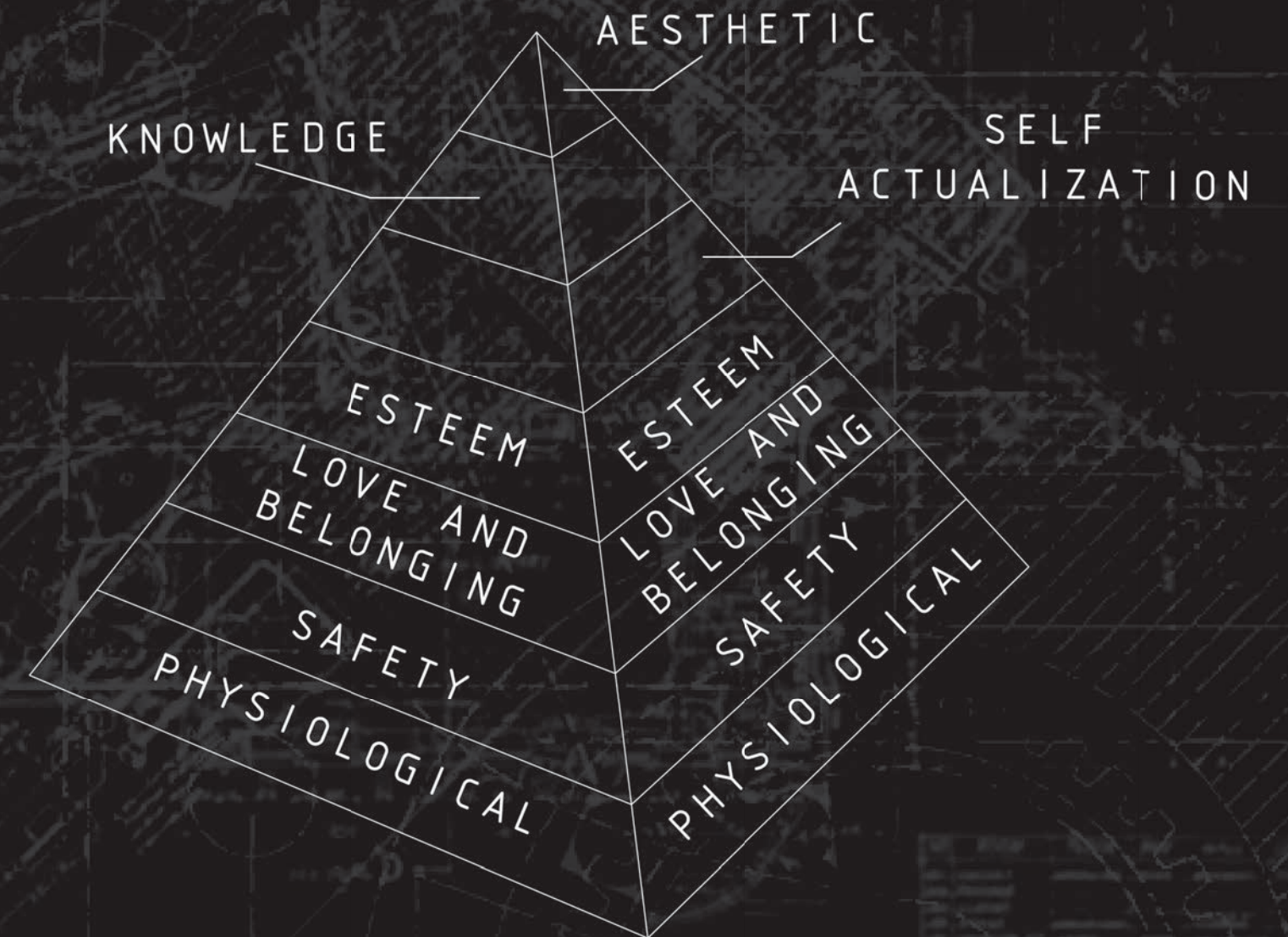
ACCORDING TO ABRAHAM MASLOW, A SOCIOLOGIST AND PSYCHOLOGIST, WHAT PEOPLE NEED TO SURVIVE AND EXIST CAN BE ORDERED IN A PYRAMID⁷. THE THEORY OF THE PYRAMID IS THAT THE NEXT LEVEL CANNOT EXIST WITHOUT THE LEVEL BELOW IT. HE BELIEVED THAT THIS CAN APPLY TO HUMAN NEED AS WELL.

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.

6. Toby Hemenway, *The Permaculture City: Regenerative Design for Urban, Suburban, and Town Resilience* (White River Junction, VT: Chelsea Green Publishing, 2015).

7. Abraham H. Maslow, *Motivation and Personality* (New York: Harper & Row, 1970).



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 OVER-ARCHING 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.



SCENARIO

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.



PRECEDENTS

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

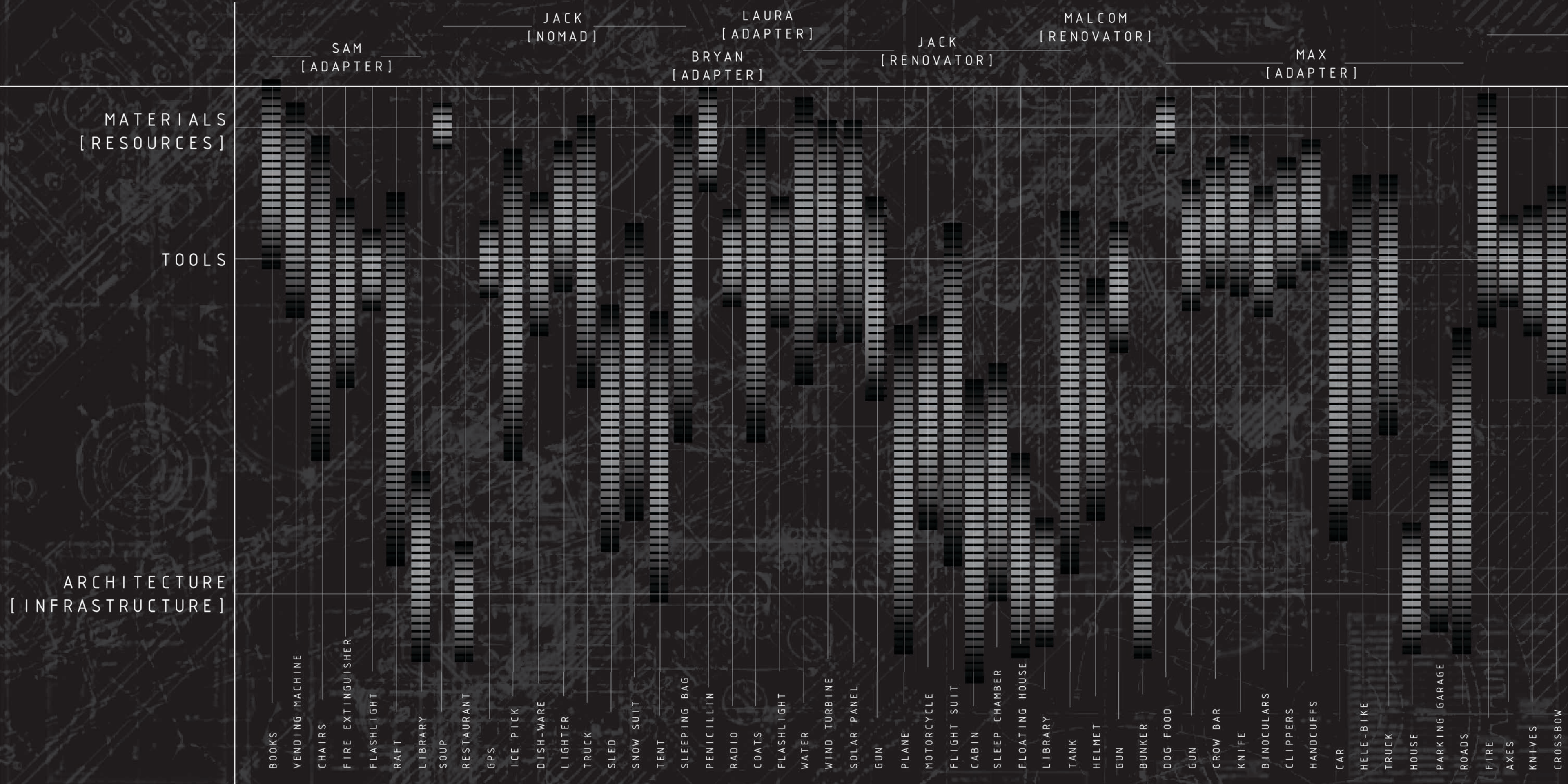
[THE RENOVATOR]



- 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.

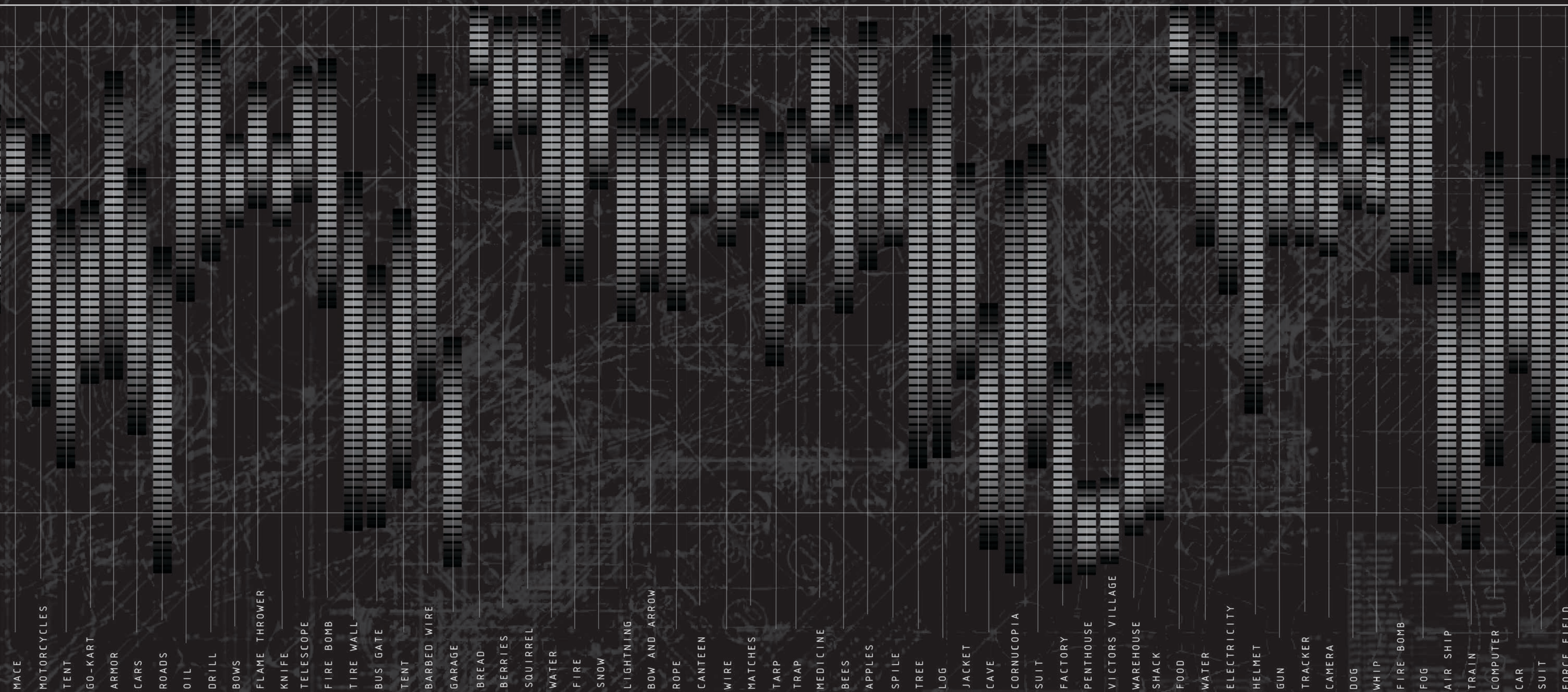


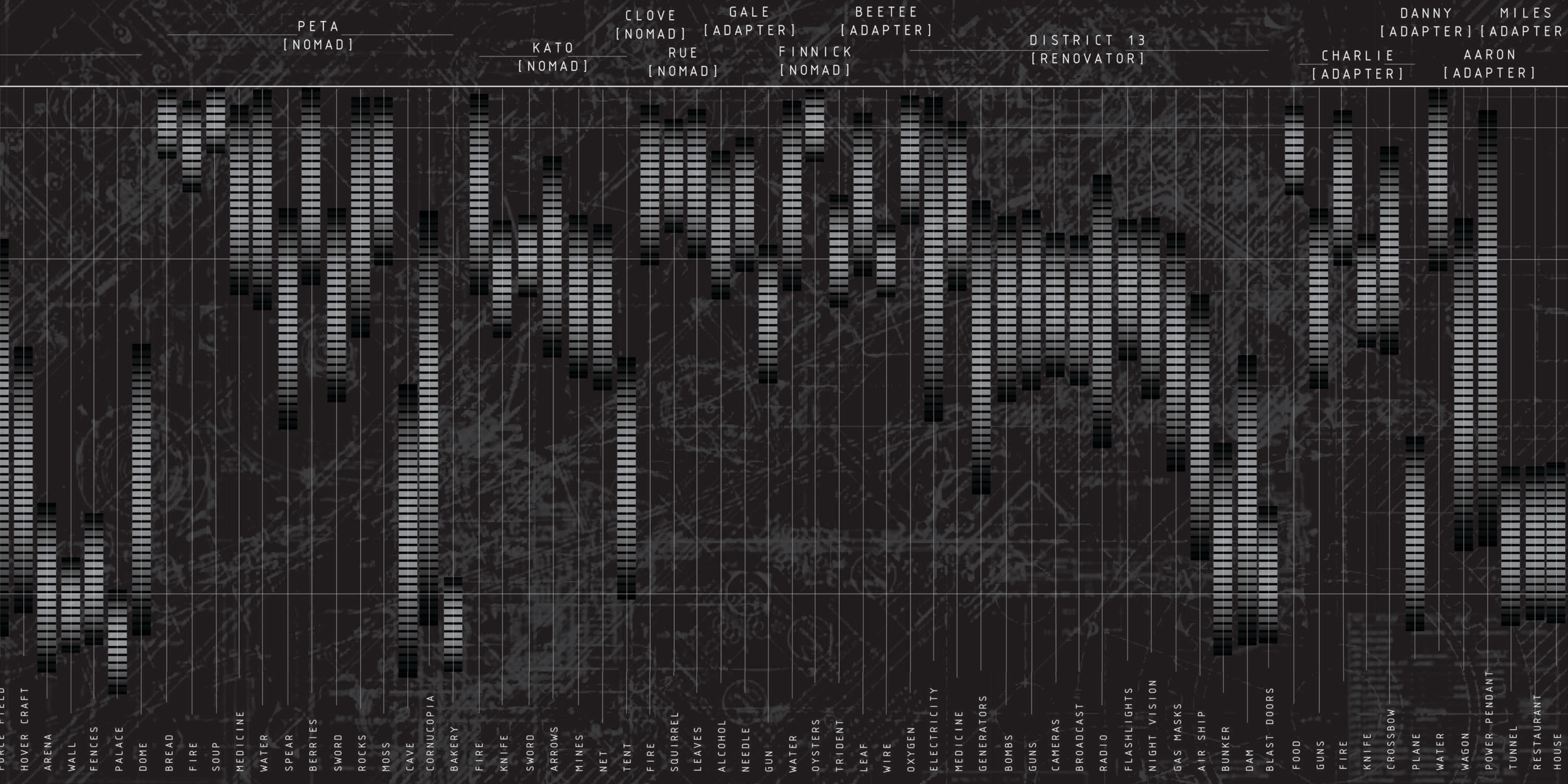
GANG
[NOMAD]

TRIBE
[RENOVATOR]

KATNISS
[NOMAD]

THE CAPITOL
[RENOVATOR]





THESE GRAPHS IDENTIFIED WHAT THE DIFFERENT CHARACTERS WOULD USE GIVEN AN EXTREME SITUATION.

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

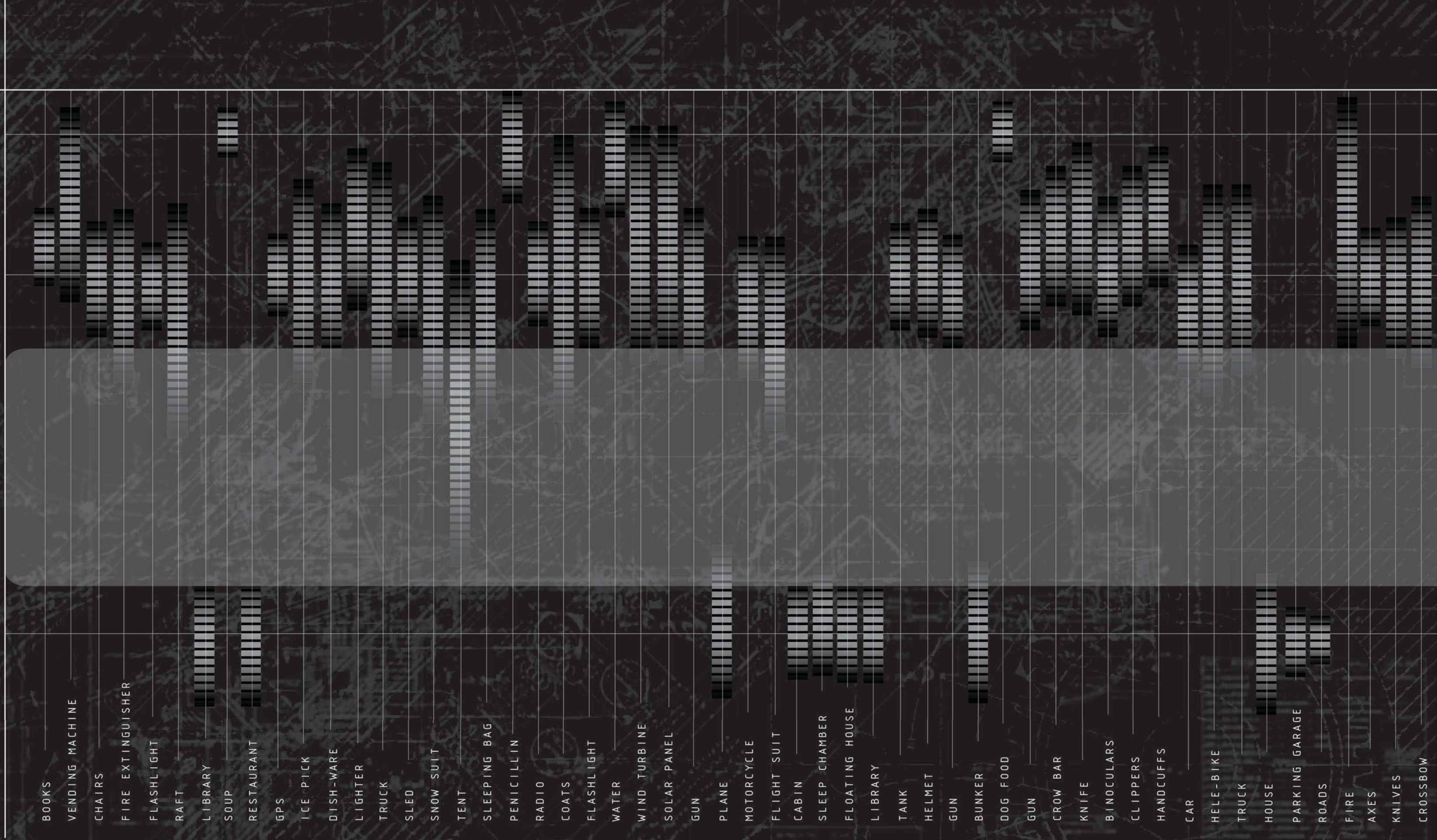
ON THE CONTRARY, THIS PROJECT WOULD LIKE TO IDENTIFY THOSE ITEMS THAT SHOULD BE DESIGNED FOR THE GAP BETWEEN THE MATERIAL AND THE ARCHITECTURE WHICH MUST BE BRIDGED WHEN ARCHITECTURE FAILS UNDER EXTREME CONDITIONS.

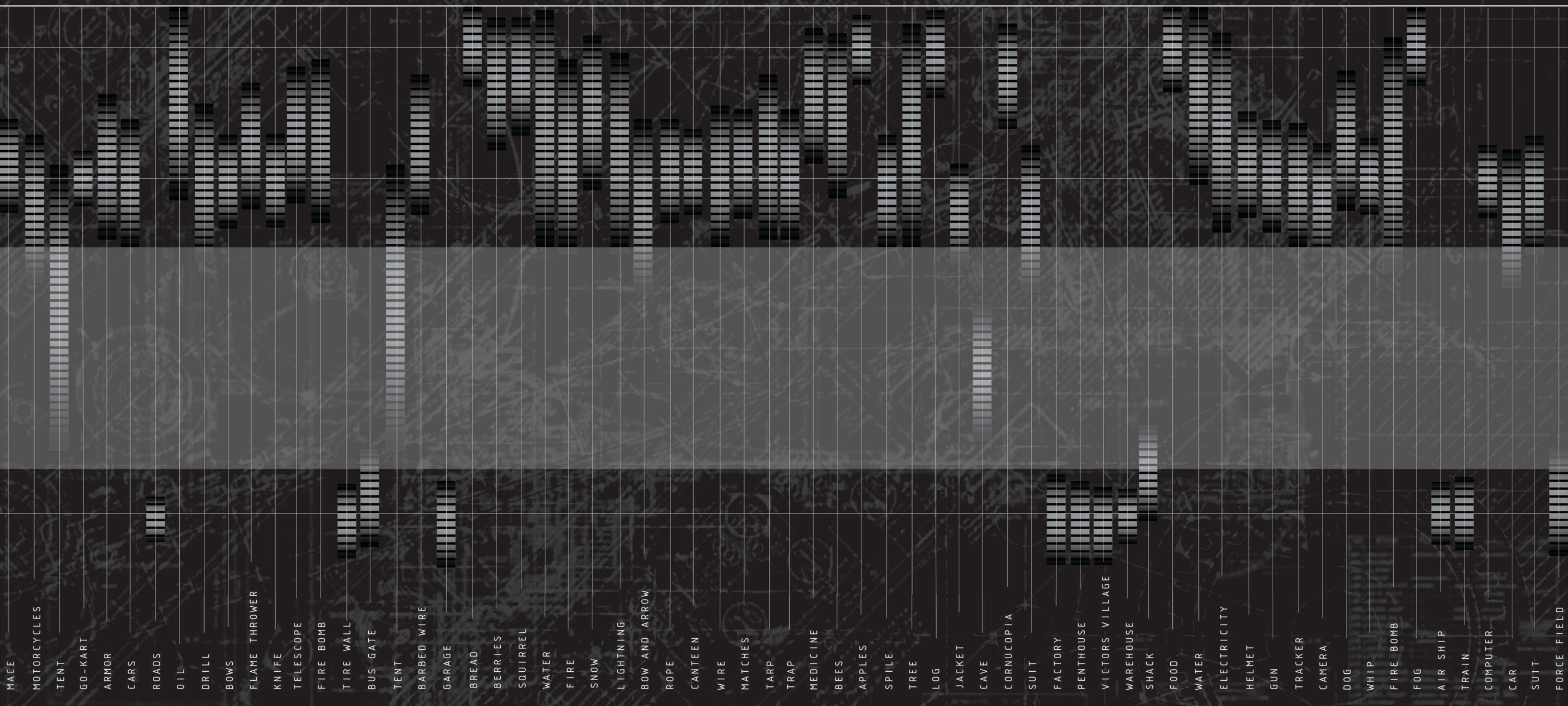
TO UNDERSTAND THAT RELATIONSHIP, I HAD TO IMAGINE HOW THE OBJECTS WOULD BE USED UNDER CURRENT DAY CONDITIONS.

MATERIALS
[RESOURCES]

TOOLS

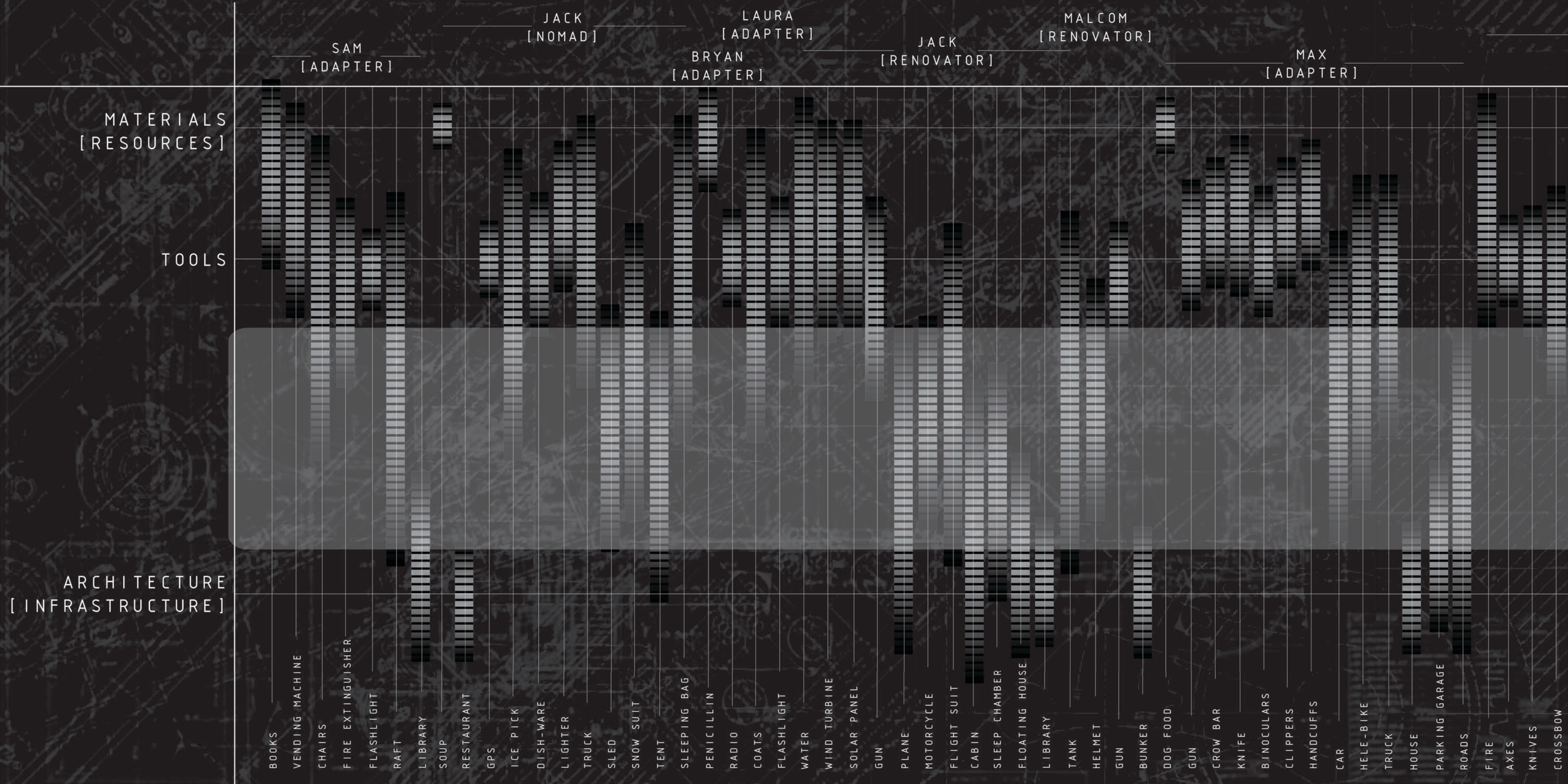
ARCHITECTURE
[INFRASTRUCTURE]





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.

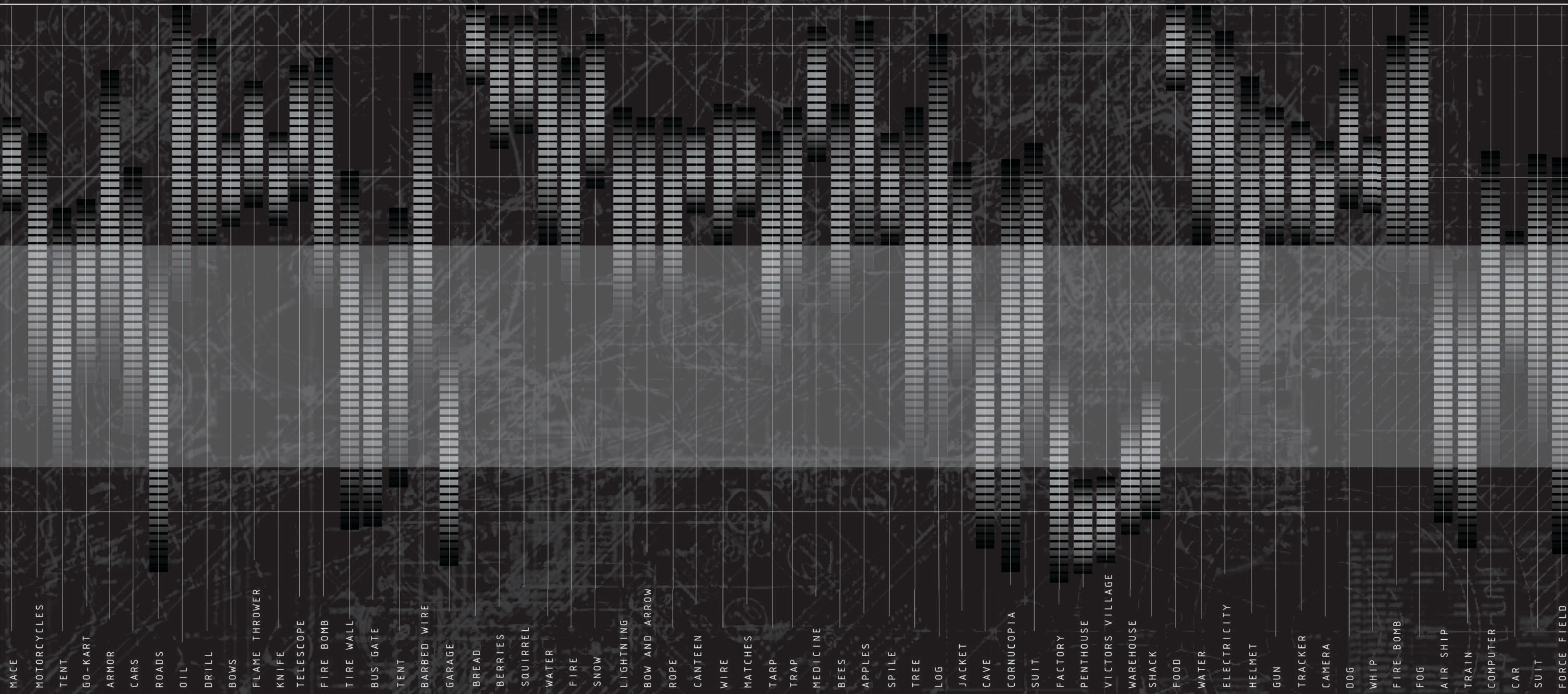


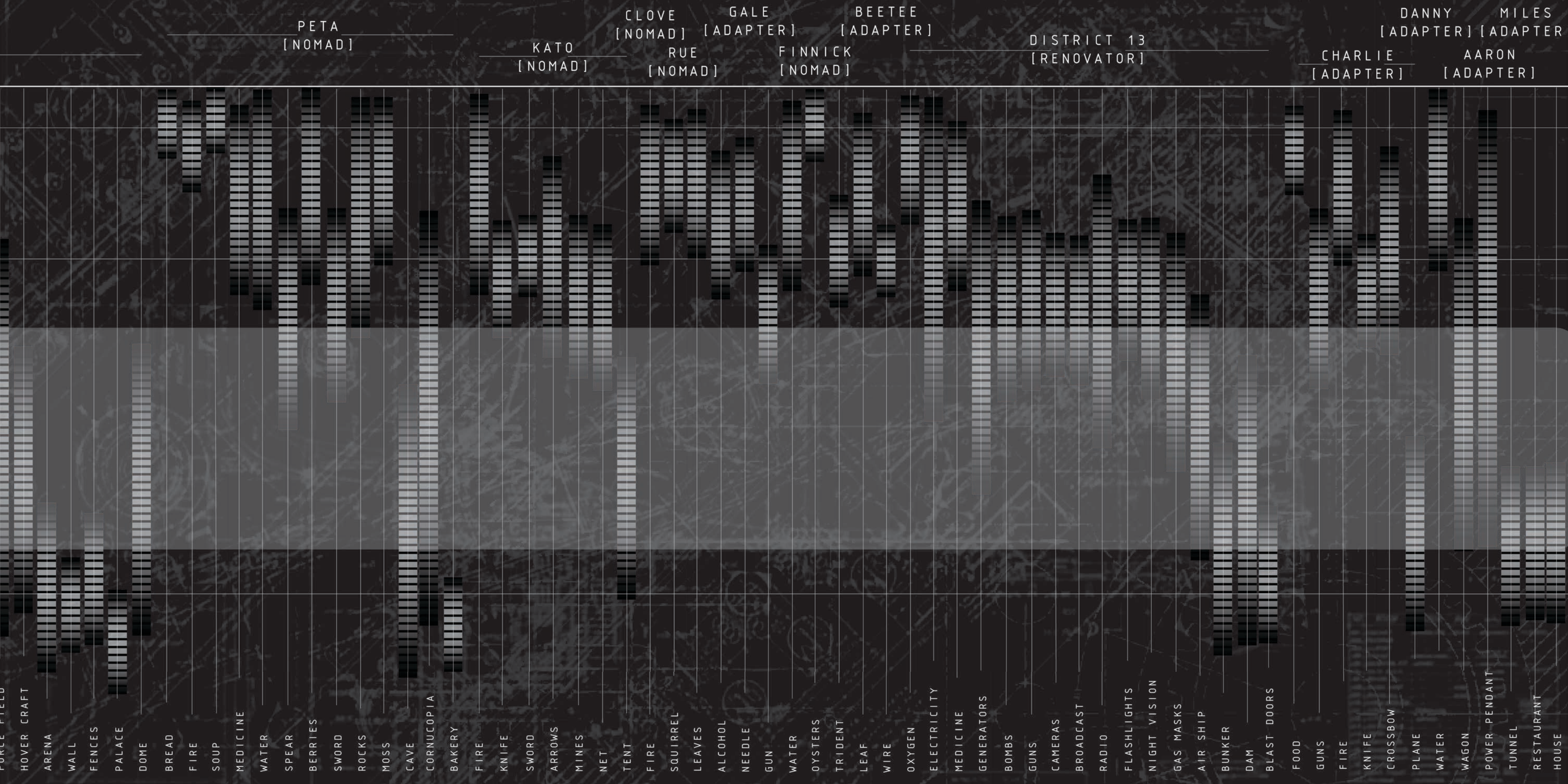
GANG
[NOMAD]

TRIBE
[RENOVATOR]

KATNISS
[NOMAD]

THE CAPITOL
[RENOVATOR]





[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

[THE RENOVATOR]

MOTORCYCLE

RAFT

COMPUTER

FLOATING HOUSE

FLIGHT SUIT

CAR

HELMET

SLEEP CHAMBER

HOVER CRAFT

TENT

TANK

GENERATORS

DAM

TIRE WALL

GAS MASKS

TRAIN

BUS GATE

BUNKER

FORCE FIELD

GARAGE

DOME

AIR SHIP

NARRATIVE

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.

THE AIR WAS STILL, AS IT USUALLY WAS. THE SILENCE STRETCHED ON INTO AN IMMENSE VOID. JORDAN HAD YET TO OPEN HIS EYES, PREFERING TO LISTEN IN THE DARK. MAYBE SOMETHING WOULD BE OUT THERE. MAYBE TODAY WHEN HE OPENED HIS EYES, THE SUN WOULD BE SHINING AND PEOPLE WOULD BE THERE. PEOPLE HE KNEW. A THIN SMILE CREEPT ACROSS HIS FACE AS THE FANTASY LINGERED IN HIS MIND.

"IT'S GOING TO HAPPEN. TODAY, THEY WILL BE THERE." HIS BRAIN FURROWED WITH INTENSE FOCUS AS HE TOOK ONE LAST BREATH. JORDAN BLINKED. FOR A MOMENT HE THOUGHT THAT HE HADN'T OPENED HIS EYES, IT WAS STILL BLACK, PITCH BLACK. AS HIS EYES BEGAN TO ADJUST TO THE DIM LIGHT, HIS HOPES CRUMBED. NO SUN, NO PEOPLE, NOTHING. NOTHING BUT COLD, DARKNESS AND SILENCE.

"PERFECT," JORDAN GRUMBLED, AS HE CLOSED HIS EYES AGAIN. WHY DID HE EVEN BOTHER AT THIS POINT? IN THE SEVENTY-FOUR DAYS SINCE THE GREAT CRASH, HE HADN'T SEEN THE SUN OR A SINGLE SOUL ONCE. WELL, AT LEAST NONE THAT WERE ALIVE. MAYBE HE SHOULD JUST STAY HERE, UNDER THE BLANKETS. IT WAS ALWAYS SO PAINFUL TO GET OUT OF BED, EVEN IN HIS SLEEPING MASK, HE COULD FEEL THE COLD SEEP INTO HIS PORES. JORDAN LAUNCHED DRYLY TO HIMSELF AS HE THOUGHT OF A TIME WHEN S.S.F. WOULD HAVE POUNDED GOLD. NOW HAVING HE HAD BEEN.

JORDAN HAD JUST ABOUT RESOLVED TO STAY IN BED WHEN A LOW RUMBLE ANNOUNCED HIM OUT OF HIS THOUGHTS. HE GLANCED DOWN TOWARDS HIS STOMACH. IF SOMEONE HAD TOLD HIM THAT THE WORST PART OF A SUFFERING LIFE WOULD BE THE HUNGER, NOT THE COLD, HE NEVER WOULD HAVE BELIEVED THEM. WITH A LONG SIGH, HE PUSHED THE THERMAL BEDDING OFF, INSTANTLY TENSING AS THE COLD PIERCED HIS SKIN. GRABBING HIS PARKA, HE MOVED TOWARDS THE SMALL FURNACE IN THE CENTER OF THE ROOM. JUDGING BY THE LACK OF HEAT RADIATION FROM THE SMALL CYLINDRICAL OBJECT, JORDAN FIGURED HE WAS OUT OF FUEL.

"PERFECT," HE MUTTERED THROUGH CLUTTERED TEETH.

JORDAN WALKED OVER TO THE PANTRY UPBOARD AND PULLED IT OPEN WITH BAILED BREATH. AN EMPTY SHELF GAZED BACK AT HIM. THIS DAY WAS JUST GETTING BETTER. HE LOOKED NEARLY TOWARDS THE DOOR. IT WAS TIME TO PACK UP AND GET MOVING. IF HIS PREVIOUS CALCULATIONS HAD BEEN CORRECT, HE WAS STILL EIGHT DAYS OUT FROM THE POTENTIAL SURVIVAL COMMUNITY HE'D HEARD ABOUT BEFORE THE POWER HAD GONE. ALL THOSE THAT COULD EVALUATE HAD BEEN ENCOURAGED TO MAKE THE JOURNEY UNFORNATELY, NOT EVERYONE WAS ABLE TO PICK UP AND LEAVE THE TRUCK. HIS ESTIMATED TO BE ABOUT EIGHT HUNDRED MILES. ~~JUST~~ EVEN FOR THE PHYSICALLY FIT, THE TRIP WAS EXPECTED TO TAKE AT LEAST TWO MONTHS ON FOOT. IT WAS NOT A JOUQUY ANYONE WAS WILLING TO EMBARKE ON, BUT LATER HEARING WHAT HAD HAPPENED TO PEOPLE WHO HAD STAYED BEHIND IN LINES TO THE NORTH, JORDAN HAD FIGURED HE DIDN'T REALLY HAVE A CHOICE.

AFTER PUTTING ON ALL OF THE CLOTHES HE HAD BROUGHT, HE PULLED ON HIS THERMAL SUIT. HEAT WERE THE BOOTS WITH WIDE SOLES, AND FINALLY THE HAT AND GLOVES. JORDAN WAS OFFICIAL COLD, BUT HE KNEW HE WOULD WARM UP AS HE STARTED TO MOVE.

THE PROCESS FROM WAKING UP TO BEING READY TO WALK HAD BECOME EASIER OVER TIME. HE COULD NOW GET DRESSED, PACK UP, AND DISMANTLE HIS SHELTER WITHIN AN HOUR. EVEN

LESS IF HE HAD EATEN THAT MORNING. AFTER PULLING OUT THE FURNACE, PANTRY BOX, SUPPLIES DISH, BOWLED UP SLEEPING PAD, AND MISCELLANEOUS TOOLS, HE BODDLE DOWN THE SMALL HALL, BEHIND LONG. HE HAD IT ASSEMBLED ON HIS SLED.

FIRST THING: FIND FOOD. AS A LIFELONG HUNTER, HE WOULD HAVE THOUGHT IT WOULD BE EASIER TO FIND FOOD. BUT AS HAD HAPPENED WITH THE WILMANS, MANY OF THE ANIMALS HADN'T HAD IT EITHER. JORDAN LOOKED AT THE SUBARVODILE LANDSCAPE. HE HAD SET UP CAMP NEAR THE BASE OF A MOUNTAIN ON THE EDGE OF A CLEARING. IF THERE WAS ANYTHING HE HAD LEARNED, THE FOOD WAS IN THE WOODS WHERE THE SNOW WAS LESS DEEP. SO HE TURNED HIS BACK ON THE CLEARING AND HEADED INTO THE FOREST, PULLING HIS HOUSE BEHIND HIM.

JORDAN WOKE WITH A START. AT FIRST, HE WASN'T SURE WHAT HAD WOKEN HIM. HE GLANCED AROUND IN THE DIM LIGHT. NOTHING SEEMED OUT OF PLACE. HIS BOOKS WERE NEATLY STACKED ON THEIR SHELVES, ORGANIZED ALPHABETICALLY BY AUTHOR'S LAST NAME. HIS DESK ALSO APPEARED UNDISTURBED. HIS NOTEBOOKS, ALTHOUGH OPEN AND STREAM ABOUT HIS DESK, WERE AS HE'D LEFT THEM. HIS PENS, PENCILS AND ERASERS WERE UNMOVED. THE ONE FRAMED PICTURE HE HAD, THE ONE OF ELLE, SAT EXACTLY WHERE IT BELONGED. NO, EVERYTHING SEEMED PERFECTLY NORMAL.

AND THEN HE HEARD IT. IT STARTED LOW, LIKE A GEDAN. THEN IT BOOMED IN VOLUME, GROWING INTO A HOWL, AND THEN INTO A SHRIEK. THE HOWL, UNWITTING, CALLED JORDAN TO THE BONE. HE PULLED THE BLANKETS CLOSER. HE SUDDENLY FELT VERY ALONE. FOR A MOMENT, IT WAS SILENT AND HE THOUGHT MAYBE HE COULD GO BACK TO SLEEP.

"IT WAS JUST A DOG, THAT'S ALL. JUST A DOG. NOTHING TO WORRY ABOUT." SATISFIED THAT IT WAS SAFE TO GO BACK TO SLEEP, JORDAN CLOSED HIS EYES. HE WAITED FOR SLEEP TO COME, TRYING TO LET HIS MIND DRIFT TO HAPPIER THOUGHTS. BUT THE UNEASY FEELING CREEPT BACK. WHY COULDN'T HE FALL ASLEEP? HOW LONG HAD IT BEEN? WHAT TIME WAS IT? JORDAN COULD FEEL HIS HEART RATE INCREASING. WHY WAS HE SO PANICKED? THEN HE NOTICED HOW COLD HE WAS. HE HAD CURLED UP INTO THE FETAL POSITION, CLUTCHING THE BLANKETS TIGHT TO HIS CHEST. WHAT WAS HAPPENING?

REALIZING SLEEP WASN'T GOING TO HAPPEN, HE SAT UP AND SHOOK HIS LEGS OVER THE SIDE OF THE BED. AS HIS BALL FEET TOUCHED THE HARDWOOD FLOOR, HE WINCED. HIS HEART HAD

HAVE BEEN OFF. DRAPING THE BLANKETS AROUND HIM, HE SHUFFLED OVER TO THE THERMOSTAT. "NO WAY, THAT'S NOT POSSIBLE." FORTY-SIX DEGREES FAHRENHEIT. IT WAS SEPTEMBER. EVEN IF IT HAD DROPPED TO THAT TEMPERATURE OUTSIDE, IT WOULDN'T BE THAT COLD INSIDE. JORDAN STOOD PERPLEXED, ILLUMINATED BY THE SOFT GREEN GLOW OF THE THERMOSTAT. HE SHIVERED AND NOTICED THAT HE COULD SEE LITTLE CLOUDS OF BREATH IN FRONT OF HIM. THIS DIDN'T MAKE SENSE. SOMETHING WAS WRONG.

AHHH WOODS! JORDAN'S HEAD SNAPPED TOWARDS THE WINDOW. HE KNEW IT WASN'T A DOG. HE'D WONN IT HADN'T BEEN ONE. WITH A DEEP BREATH HE DECIDED TO HAVE THE DOG

THE WINDOW. IT SEEMED SO FAR AWAY, ALTHOUGH IT WAS ONLY ACROSS THE ROOMS. HIS HEART BEGAN TO BEAT FASTER AGAIN. HE REACHED THE WINDOW, AND WITH A BARE HAND, OPENED THE CURTAINS.

"NO," HE BREATHE. "NO, THIS CAN'T BE REAL." ~~THE~~ ^{THE} QUIET, TREE-LINED STREET THAT HAD BEEN THERE THAT EVENING, NOW WAS HIDDEN DEEPLY TWO, IN THREE FEET OF SNOW. THE LARGE MAPLES, ONCE LUSH AND LEAFY, GLISTENED WHITE, THE LEAVES FROZEN IN PLACE. LANS WERE DISCREASABLE ONLY AS MOUNDS IN DRIVEWAYS LOST BENEATH A WHITE BLANKET. LICES HAD ALREADY FORMED ON EYES AND WINDOW SILLS. JORDAN DIDN'T KNOW WHAT TO DO, HE WASN'T PREPARED FOR THIS. HE HAD TO GET TO WORK THE BEST WEAPONS. WOULD HIS GFACE EVEN BE OPEN? THOUGH HE WAS GOING TO BE A NIGHTMARE. AND THEN, THE POWER WENT OUT.

HE KNELT DOWN IN THE SNOW TO GET A BETTER LOOK. DEFINITELY FRESH. MAYBE ONLY AN HOUR OLD. JORDAN TRACED THE PRINT IN THE SNOW. IT LOOKED TO BE FROM A DEER, ALTHOUGH PERHAPS A YOUNG ONE JUDGING BY THE SIZE OF THE TRACKS. HE SMILED TO HIMSELF. YOUNG WAS GOOD. SMALL ENOUGH TO CATCH BUT STILL PLENTY OF FOOD. A DEER OF THIS SIZE COULD LAST HIM A COUPLE OF WEEKS, WHICH SHOULD HAVE BEEN MORE THAN ENOUGH TO GET JORDAN TO THE SURVIVAL COMMUNITY.

WITH A SURGE OF ENERGY, JORDAN BEGAN TRACKING THE DEER. WITHIN MINUTES FOR MORE THAN AN EMPTY STOMACH. AT LEAST DINNER DIDN'T SEEM TOO FAR AWAY. AND, FOR ONCE THE WEATHER SEEMED TO BE ON HIS SIDE. WHILE THE SUN STILL SEEMED TO BE SUPPLEMENTING STAKE FRIGHT, THE WIND HAD DIED DOWN. JORDAN NEVER THOUGHT FEELING COULD FEEL SO WARM FOR THE FIRST TIME IN DAYS. HIS SPIRITS WERE UP IN FACT, JORDAN EVEN THOUGHT THAT THE SNOW SEEMED BEAUTIFUL HERE AMONGST THE PINE TREES. IT GLITTERED SOFTLY IN THE PALE LIGHT, GIVING THE FOREST A CERTAIN GUSTED. IT REMINDED JORDAN OF THE SNOW THAT USED TO FALL AROUND CHRISTMAS TIME. SO SOFT. SO PEACEFUL. HE SHOULD AS HE THOUGHT OF THE HOLIDAY MEALS THEY USED TO EAT, AND THE TREASURES UNDER THE TREE. HE REMEMBERED THE FORCE HE AND ELLE USED TO MAKE IN THE SNOW... NO. THAT TIME HAD PASSED. HE HAD TO FORGET ABOUT IT. ABOUT HER.

JORDAN SHOOK HIS HEAD AND RETURNED TO TRACKING THE DEER. HE WAS MOVING A STEADY PACE, ALTHOUGH THE DEER WAS MOST LIKELY MOVING FASTER. HE WAS HOPEFUL THAT THE DEER WOULD HAVE TO STOP TO EAT OR REST, ESPECIALLY IF IT WAS YOUNG. HE COULD ALMOST TASTE THE DEER. IT HAD BEEN DAYS SINCE HE HAD EATEN ANY REAL FOOD. MOSTLY JUST ROOTS AND FROZEN FRUIT HE'D SCAVENGED. YES, A NICE HOT MEAL WOULD BE FANTASTIC.

JUST THEN, HE HEARD A VOICE. IT WAS SOFT, BARELY AUDIBLE, BUT DEFINITELY THERE. BEING ENTIRELY ALONE FOR MONTHS HAD MADE HIS SENSE OF HEARING MUCH ACUTE. HEARING ONLY HIS OWN BREATHING, HIS OWN HEARTBEAT, HIS OWN FOOTSTEPS HAD MADE HIM INTEREST AWAKE OF ANY OTHER LIVING BEING. THAT QUIET SOUND, REMINDING JORDAN THAT HE WASN'T ALL

ALONE. HE STEADIED HIS BREATH. HE HAD TO MAKE SURE THAT IT WOULDN'T HEAR HIM. JORDAN LAY ON THE FLOOR HE USED TO PULL HIS GLEID. HE THEN GRABBED ONE OF THE BOWS HE KEPT CLOSE AT HAND. A GUN WOULD HAVE BEEN EASIER, BUT HE'D THOUGHT IT THROUGH. EVEN IF HE WOULD RUN OUT OF BULLETS, AND IT WASN'T CLEARLY LIKE HE COULD JUST LOSE TO A STORE FOR MORE. BUT ARROWS COULD BE MADE OUT OF STICKS AND BRANCHES. SO HE'D OPTED FOR THE BOW.

JORDAN CREEPT FORWARD CAUTIOUSLY. HE WAS PRETTY SURE THE HIDE HAD BEEN TO HIS RIGHT. HIS HEART WAS RACING. HUNTING ALWAYS GAVE HIM SUCH AN ADRENALINE RUSH. HE HADN'T REALLY SEEN THE HUN OF HUNTER BEFORE THE BIG STORM. BUT NOW, HE LIVED FOR IT. LITERALLY. HE HAD TO HUNT, OR HE WOULD DIE. THERE WAS SOMETHING OF PERSONAL ABOUT IT. FOOD HAD NEVER BEEN THIS IMPORTANT TO HIM BEFORE. ALL HE HAD TO DO WAS DRIVE TO THE MARKET DOWNTOWN. HE HAD NEVER THOUGHT ABOUT BUYING A PACK OF CHICKEN OR A WEDGE OF CHEESE. NOW, ALL FOOD WAS PRECIOUS.

JORDAN REACHED A SMALL HEDGECOCK BUSH AT THE EDGE OF THE CLEARING. IN HIS HAND, HE PULLED A BRANCH ASIDE. BEYOND THE TREE AND DOWN A STEEP BANK, STOOD A DEER. INDEED SMALL, IT WAS ONLY PERHAPS FOUR FEET TALL, WITH LITTLE MEAT ON ITS BONES. IT WAS DRINKING PEACEFULLY FROM A BUSH THAT WAS RAVINA. FAST ENOUGH TO ABSTAIN FROM FREEZING. IT WAS QUITE BEAUTIFUL, THE DEER. ITS CONSTANT FUR CONTRASTING BEAUTIFULLY AGAINST THE PEARLY SNOW. ITS SUBTLE MOVEMENTS WERE EVER SO GRACEFUL. JORDAN WAS MESMERIZED. HE COULD HAVE SAT THERE FOR HOURS WATCHING. IT WAS SO FOREIGN TO SEE ANOTHER LIVING CREATURE, AND YET SO WONDERFUL. HE DIDN'T WANT TO KILL IT. IT WOULD BE NICE TO HAVE A PET. SOMETHING TO TALK TO, TO KEEP HIM COMPANY. HE HAD SOME TOOLS BACK IN THE SHED, HE COULD JUST TAKE IT, LIKE A CAT AND TAKE IT WITH HIM. BUT NO, JORDAN COULDN'T DO THAT. HE NEEDED TO EAT, HE NEEDED TO SURVIVE, HE NEEDED TO REJOIN THE COLONY. IT ONLY TOOK ONE ARROW. HE HAD TO.

"OLD WOMAN, OLD WOMAN, OH YOU TREAT ME SO MEAN! YOU'RE THE MEANEST OLD WOMAN THAT I EVER HAVE SEEN! WELL I GUESS IF YOU SAY SO, I'LL HAVE TO PICK MY THINGS AND GO! BUN, BUN, BUN-BUN- HIT THE ROAD JACK, AND DON'T YA COME BACK NO MORE NO MORE NO MORE NO MORE! HIT THE ROAD JACK AND DON'T YA COME BACK NO MORE!"

RICHARD LEANED DOWN AND CRANKED OPEN THE WINDOW TO HIS CHEM SILVERADO. THE FRILLID AIR SWIRLED INTO THE CAB, STINGING HIS CHEEKS UNDER HIS OVER-GROWN BEARD.

"HEY JACK! DID YOU HEAR THAT? DON'T COME BACK! HAHHA!" RICHARD ROLLED UP THE WINDOW, SMILING TO HIMSELF.

"THINK HE HEARD US, DAISY?" A MANKY LOOKING DOW PICKED UP HER HEAD AND BEGAN TO PAINT.

"YEAH, YOU'RE RIGHT, I'LL JUST HAVE TO BE LOUDER NEXT TIME. FOR NOW IT'S JUST YOU AND ME, GIRL." RICHARD REACHED OVER AND SCRATCHED DAISY BEHIND THE EARS. IT SURE WAS NICE HAVING HER AROUND. THIS WHOLE APOCALYPSE THING WAS BAD ENOUGH. HE COULDN'T IMAGINE BEING ENTIRELY ALONE. SURE, DAISY COULDN'T TALK, BUT SHE WAS A GREAT LISTENER, AND SHE WAS WARM, WHICH WAS GREAT FOR THE COLD NIGHTS. SPEAKING OF WHICH, IT WAS STARTING TO GROW DARK.

"WELL, WE'D BETTER GET OFF THIS HERE ROAD BEFORE IT GETS DARK. WHERE SHOULD WE SLEEP TONIGHT? A WARE HOUSE? A GAS STATION? HOW ABOUT A NICE RESTAURANT?" RICHARD GLANCED OVER AT DAISY. SHE HAD HER HEAD COCKED TO THE SIDE IN AN OBVIOUS ATTEMPT TO COMPROMISE THE CONVERSATION.

"WHY IS IT THAT I ALWAYS HAVE TO MAKE ALL OF THE DECISIONS?"

RICHARD SLOWED THE TRUCK TO AVOID A CAR THAT HAD BEEN ABANDONED. WHY COULDN'T PEOPLE HAVE TRIED TO PULL OFF THE ROAD? AS IF THE SNOW AND ICE WASN'T BAD ENOUGH, ALL OF THESE CARS, LEFT TO ACCUMULATE SNOWY BLANKETS, WERE CERTAINLY NOT HELPING. RICHARD REMEMBERED WHEN HE HAD BEEN ABLE TO TRAVEL AT 70 MILES PER HOUR ON THE MASS PIKE. NOW, HE COULDN'T GO MUCH FASTER THAN TEN MILES PER HOUR. EVEN WITH THE SKIS AND BELTS HE'D ATTACHED, THE GOING WAS SLOW. VERY SLOW.

"BETTER THAN WALKING, I SUPPOSE," HE GRUNTED. HE COULDN'T IMAGINE DOING THIS TRIP ON FOOT. THE DISTANCE ALONE WOULD SURELY HAVE KILLED HIM. NOT TO MENTION THE COLD, OR THE SUPPLIES HE WOULD HAVE TO CARRY. RICHARD LOOKED OUT THE WINDOW AT THE WHITE WORLD HE NOW BELONGED TO. HE WASN'T SURE THAT ANYONE WOULD BE ABLE TO SURVIVE OUT THERE. WHEN HE WAS FIRST LEAVING BOSTON, RICHARD HAD SEEN PLENTY OF PEOPLE ON FOOT. THEY HAD ALL BEEN TOLD, "GO INLAND AND GO SOUTH." BUT WITH ROADS UNNAVIGABLE, AND SO MANY WITHOUT VEHICLES TO BEGIN WITH, WALKING HAD SEEMED LIKE THE BEST OPTION. BUT THE FURTHER OUTSIDE THE CITY RICHARD GOT, THE LESS IT SEEMED LIKE A GOOD IDEA. WITH EACH PASSING DAY, HE SAW FEWER

AND FEWER PEOPLE. THE PAST FEW DAYS HE HADN'T SEEN ANY.

"THEY'RE PROBABLY ALL DEAD," HE MUTTERED AS HE SLOWLY STEERE TOWARDS THE CLOSEST OFF RAMP. LUCKILY, MOST OF THE CARS WERE COMPLETELY OFF THE ROAD, MAKING THE DESCENT RELATIVELY EASY. AFTER TAKING A LEFT AT THE BOTTOM, RICHARD FOUND HIMSELF DRIVING THROUGH A SMALL, NEW ENGLAND TOWN. TINY BROWN AND TOP SHOPS LINED THE MAIN STREET. NOT SURPRISINGLY, THE PLACE SEEMED ABANDONED.

RICHARD SLOWED TO A STOP OUTSIDE A DARK GROCERY STORE. MOST STORES HAD BEEN PICKED OVER PRETTY WELL, BUT IT NEVER HURT TO LOOK. HE WASN'T OUT OF FOOD, BUT MORE WAS ALWAYS WELCOME. BESIDES, THERE ALWAYS SEEMED TO BE SOME FOOD LEFT.

AFTER TWENTY MINUTES OF SNAVENING, RICHARD EMERGED FROM THE STORE WITH A BAG OF BUN FOOD, SOME FROZEN APPLES, A BAG OF ONIONS, AND A BAG OF OLIVES THAT SOMEONE HAD MISSED.

"PRETTY GOOD HALL, EH DAISY?" RICHARD OPENED AN OLD ICED COOLER HE HAD STRAPPED DOWN INTO THE BED OF HIS TRUCK. AFTER DEPOSITING THE GOODS, HE GOT BACK IN THE CAB. HE SURVEYED HIS SURROUNDINGS AS HE ZIPPED INTO HIS HANDS. HIS EYES LANDED ON A CHURCH ACROSS THE STREET. HE SMILED TO HIMSELF.

"HOW IRONIC."

"I SAID I'M COMING!" BRI GRABBED A COUPLE MORE JARS OF BEETS BEFORE TURNING TO CLIMB THE STAIRS. THERE WAS NO LIGHT IN THE CELLAR, SO IT TOOK A MOMENT FOR HER EYES TO ADJUST TO THE NATURAL LIGHT.

"BRI, FOR GOODNESS SAKE, WHAT ARE YOU DOING? I TOLD YOU THAT THE OTHER WOMEN AND I WERE MAKING BLANKETS TODAY. I EXPECTED YOU TO BE THERE. YOU KNOW THIS COMMUNITY CANNOT RUN WITHOUT EVERYONE'S HARD WORK."

"YEAH, MOM. I KNOW. IT'S JUST THAT MRS. HALL ASKED FOR ME TO GET SOME FOOD FROM THE STORAGE FOR DINNER."

MRS. HONELL FURROWED HER BROW AS SHE LOOKED AT HER DAUGHTER. BRI STARED BACK INNOCENTLY, AWAITING HER MOTHER'S NEXT SET OF ORDERS. IT HAD BEEN SIXTEEN YEARS, AND SHE STILL COULDN'T READ THOSE BIG BLUE EYES. BRI COULD NEVER TELL WHAT SHE WAS THINKING, UNLIKE HER FATHER. HE WAS LIKE AN OPEN BOOK, AT LEAST TO HER. THERE WAS NO QUESTION AS TO WHICH OF THE TWO SHE GOT ALONG WITH MORE. AT TIMES, BRI HAD WONDERED IF THIS WAS HER MOTHER AT ALL. ASIDE FROM HAVING ALMOST NOTHING IN COMMON, THEY DIDN'T EVEN LOOK ALIKE. MRS. HONELL HAD STRAIGHT, BLONDE HAIR AND BLUE EYES. HER FACE WAS ROUND AND CHEERFUL (SO BRI HAD BEEN TOLD) AND SHE STOOD AT ABOUT 5'5". HER VOICE WAS SOFT AND MELLOW, WHICH BRI HAD ALWAYS FOUND REPULSIVE. ON THE OTHER HAND, BRI HAD DARK HAIR THAT FELL TO HER WAIST IN UNEVEN WAVES, WITH DARK EYES TO MATCH. SHE HAD A HARD JAWLINE AND NOTICEABLE CHEEKBONES. HER VOICE WAS DEEPER AND RAUGHTER. SHE REMEMBERED A TIME IN GRADE SCHOOL WHEN HER MUSIC TEACHER HAD ASKED HER TO SING MORE QUIETLY SO THAT SHE DIDN'T RUIN THE CONCERT. BRI SMILED WRYLY. NO, CHEERFUL AND LILABLE HAD NEVER BEEN TERMS THAT DESCRIBED HER.

"WELL, IT'S TOO LATE NOW, WE FINISHED. I'LL TAKE THESE TO MRS. HALL. I THINK SHE NEEDS TO BE REMINDED THAT WE DON'T HAVE AN ENDLESS SUPPLY OF FOOD." MRS. HONELL CAREFULLY CRADLED THE JARS IN HER ARMS. "GO HELP YOUR FATHER, I'M SURE HE NEEDS HELP WITH SOMETHING."

"SURE THING, MOM," BRI WATCHED AS HER MOTHER WALKED TOWARD THE RENOVATED CHURCH. IT WAS THE ONLY BUILDING WITH A ROOM LARGE ENOUGH TO HOLD THE ENTIRE TOWN DURING MEALS. SHE ROLLED HER EYES. HOW WAS IT THAT THEY WERE LIVING IN A NEAR ICE AGE, AND YET NOTHING FELT WORSE THAN THAT WOMAN'S DISPOSITION?

AT LEAST HER FATHER WOULD WELCOME HER WARMLY, SHE SMILED AT THE THOUGHT OF WORKING WITH HIM FOR THE REMAINDER OF THE DAY. IT WAS THEN THAT SHE REALIZED SHE HAD AN IDEA WHERE HE WAS. SHE GLANCED TOWARD THE CHURCH AND THEN SETTLED ON ASKING AROUND FIRST. DENNIS HAD JUST GETTING OUT OF HIS TRUCK ACROSS THE STREET.

"HEY, WOULD YOU LOOK WHO IT IS? NOW, TO WHAT DO I OWE THIS PLEASURE,

MRS. HONELL?" DENNIS HAD BEEN A FAMILY FRIEND FOR YEARS. BRI HAD GROWN UP WITH HIS DAUGHTER EMMA. BUT SHE LEFT TO GO LIVE WITH HER BOY IN FLORIDA AFTER THE DIVORCE. DENNIS HAD STAYED HERE TO CONTINUE WORKING, THAT IS UNTIL THE STORM.

"HI DENNIS, I WAS JUST WONDERING IF YOU HAD SEEN MY DAD AROUND?"

"CHARLIE? NO, HAVEN'T SEEN HIM, SORRY BUT I'VE BEEN GONE ALL DAY. I'M SURE SOMEONE HAS. WHAT ABOUT YOUR MOM?"

"OH, SHE'S, UM, BUSY." BRI LOOKED AT HER SNOW COVERED BOOTS AND WAVED A BIT OFF.

"AH, I SEE," DENNIS FLASHED HER A WARMING SMILE.

"YEAH, BUT, UM, WHERE WERE YOU? TODAY?" BRI ASKED, DESPERATE TO CHANGE THE SUBJECT.

"I WAS OUT TRYING TO GATHER GAS FROM AN ABANDONED CAR FOR OUR GENERATORS. I FOUND SOME, BUT I'M GOING TO HAVE TO START LOOKING FARTHER AWAY. ALTHOUGH, I SUPPOSE WE WILL RUN OUT EVENTUALLY. BUT DON'T WORRY, I'M SURE WE WILL FIGURE SOMETHING OUT."

BRI OPENED HER MOUTH TO SAY THAT SHE HAD FULL FAITH IN HIM, BUT A TERRIBLE NOISE STOPPED HER. SHE AND DENNIS BOTH TURNED TO LOOK DOWN THE STREET.

"WHAT WAS-" DENNIS STARTED TO PULL BRI WITH HIM.

"COME ON BRI, WE NEED TO GO DOWN THERE." THE TWO SET OFF AT A SOLE, CAREFUL NOT TO SLIP IN THE SNOW. SOON, THEY SAW SOMEONE APPROACH THEM THROUGH THE SNOW.

"DENNIS, BRI, COME QUICK, THERE'S BEEN AN ACCIDENT." IT WAS MR. GRAVES, THE OLD PRINCIPAL TWO TOWNS OVER. HE BEGAN TO RUN BACK THE WAY HE HAD COME.

"WAIT, WHAT HAPPENED?" BRI RAN TO CATCH UP WITH HIM, A DRE W/ALINE PUMPING THROUGH HER BODY. FINALLY SOME EXCITEMENT. MR. GRAVES STOPPED AND PLACED HIS HAND ON HER SHOULDER.

"IT WAS ETHAN, BRI," HE SMILED AT HER, WATCHING HER EYES.

"LIKE MY ETHAN? MY BROTHER?" THE ADRENALINE BEGAN TO FADE, REVEALING A DEEP, KNOWING FEAR.

"YES BRI, HE WAS ATTACKED."

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.



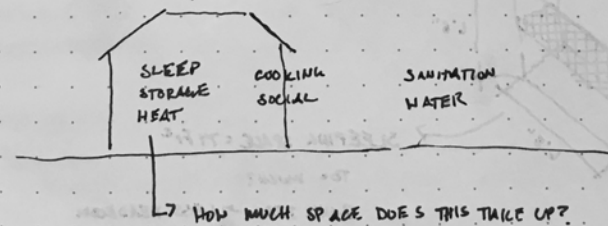
JORDAN SLEEPING IN HIS "HOUSE". HE'S LOW TO THE GROUND ON HIS PAD. THE FURNACE IS IN THE CENTER OF THE ROOM. IT'S DARK.

HOW LONG IS THE SLEEPING PAD? LONG ENOUGH FOR A HUMAN'S FULL HEIGHT. HOW TALL IS THE AVERAGE PERSON? THE SLEEPING PAD TAKES UP FULL LENGTH OF HOUSE.

WHERE DOES THE EXHAUST PIPE GO? VEHICLE IS MORE EFFICIENT, BUT IS HORIZONTAL EASIER TO ASSEMBLE?

CAN A SQUARE FIT A HUMAN'S NEEDS? HOW MUCH SPACE DO WE NEED? SHOULD IT BE A SQUARE? WHAT IS IDEAL SHAPE?

WHERE DO THE OTHER NEEDS GO? WHAT NEEDS TO HAPPEN INSIDE?

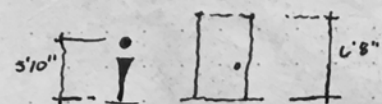


WHAT IS THE FLOOR MADE OF? WALLS?
 SHOULD BE LIGHT TO DRAG
 HOW MUCH WEIGHT CAN A PERSON PULL?
 WILL THEY NEED ANIMALS?

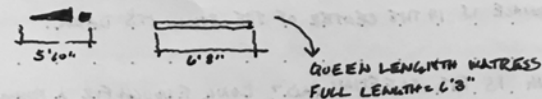
	WORLD	USA	CANADA	RUSSIA
HEIGHT: AVL. MALE:	5'6"	5'10"	5'8.5"	5'10"
FEMALE:	5'2"	5'4"	5'3.5"	5'5"

ARE PEOPLE FROM THE NORTH TALLER? → MAKE MAP

WIDTH OF HOUSE > 5'10" → DOORS ≥ 6'8"
 13.6% USA MEN > 6'

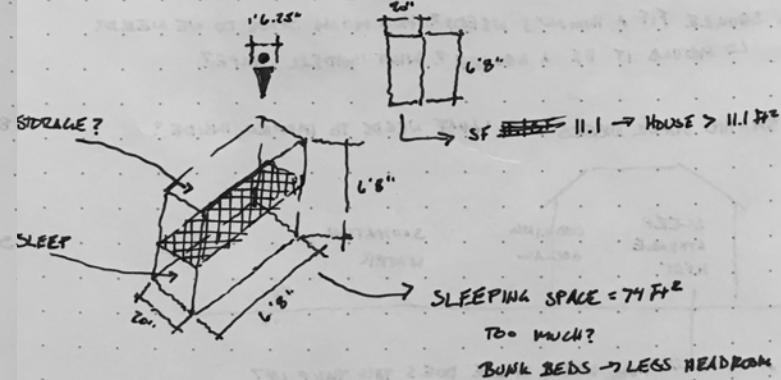


180°



AVERAGE HUMAN SHOULDER WIDTH	WORLD	USA
MALE:	18.5"	18 1/4"
FEMALE:	14"	15"

WIDTH OF SLEEPING SPACE > 18 1/4"



STORAGE SPACE → CLOTHES
 FOOD
 TOOLS/WEAPONS

FUEL
 WHAT IS HE BURNING? FUEL IS NOT EASY TO FIND. WOOD FROM THE TREES. ANIMAL FAT/DUNK

HOW MUCH FOOD DOES A HUMAN NEED?



JORDAN IS PACKING UP HIS SHELTER. ALL OF HIS BELONGINGS MUST FIT ON HIS SLED, INCLUDING HIS HOUSE.

HE MUST BE ABLE TO PULL ALL OF THE WEIGHT BEHIND HIM. HOW MUCH CAN THE AVERAGE MAN CARRY?

SLED IS EASIER ON SNOW

SLED - "... PUSH OR PULL AS MUCH AS FIVE TIMES HIS OR HER MAXIMUM LOAD... FAVORABLE CONDITIONS CAN DOUBLE THESE NUMBERS..."

X = SLED (W)

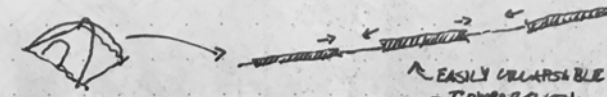
HEIGHT	MEN	PULL (W)	WOMEN	PULL (W)
5'2"	128-150	640-1200	108-143	540-1144
5'3"	130-153	680-1224	110-147	555-1176
5'4"	132-156	660-1248	114-151	570-1208
5'5"	134-160	670-1280	117-155	585-1240
5'6"	136-164	680-1312	120-159	600-1272
5'7"	138-168	690-1344	123-163	615-1304
5'8"	140-172	700-1376	124-167	630-1336
5'9"	142-176	710-1408	128-170	645-1368
5'10"	144-180	720-1440	132-173	660-1384
5'11"	146-184	730-1472	135-176	675-1408
6'0"	148-188	745-1504	138-179	690-1432
6'1"	152-192	760-1536		
6'2"	155-197	775-1576		

MEN
 640-1576

WOMEN
 540-1432

THIS IS ALONE MORE PEOPLE OR ANIMALS COULD MAKE THE # GO UP

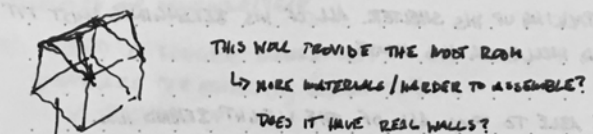
IS THE HOUSE SIMPLY A TENT? WHAT SORT OF SUPPORTS DOES IT HAVE?
 IS IT SIMILAR TO A CAMPING TENT?



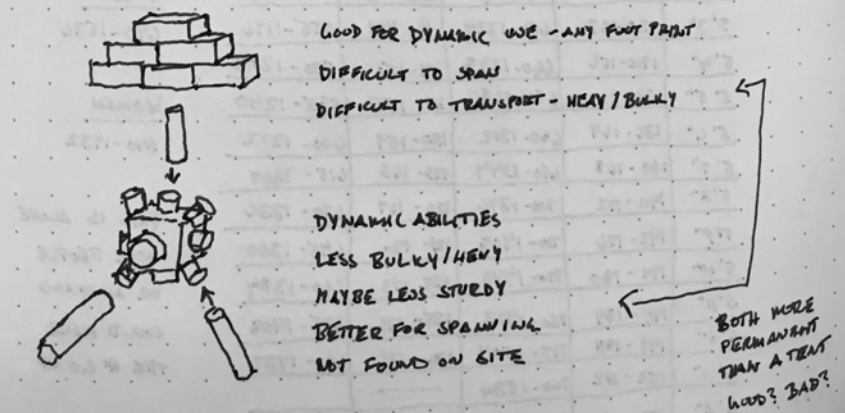
IS IT MORE LIKE A PITCH TENT?



IS IT LIKE A HOUSE?



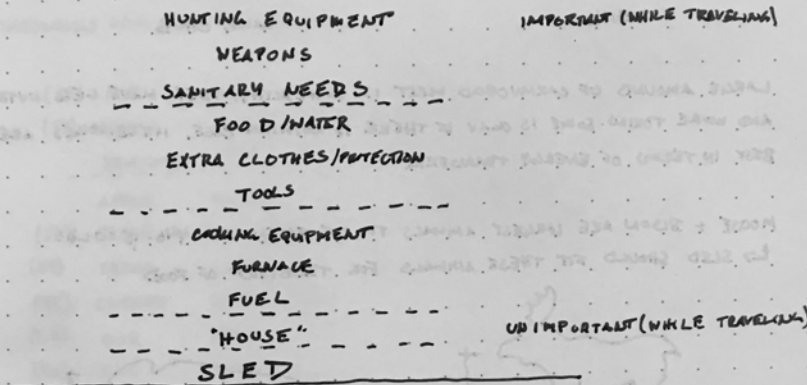
HAS TO KEEP HEAT IN WITHSTANDS SNOW/ICE + WIND
 KEEP OUT/DETER WILD ANIMALS
 FABRIC MAY NOT BE ENOUGH - SOMETHING STRONGER OR MORE RIGID
 MAYBE WALLS ARE MODULAR (STRUCTURALLY)
 → 16 LBS = BRICKS
 ABILITY TO CHANGE SHAPE AS NEEDED



WHAT IS THE "SLED" MADE OF? EVERYTHING COUNTS - SHOULD HAVE DUAL PURPOSE, BUT NOT PART OF SHELTER - MAY WANT TO HUNT WITH IT WITHOUT DISASSEMBLING THE "HOUSE."

HOW BIG SHOULD IT BE?
 ↳ LARGE ENOUGH TO FIT EVERYTHING
 SMALL ENOUGH TO MANUEVER

WILL THINGS JUST BE PILED UP? DOES IT HAVE AN ORGANIZATION?
 ↳ OBJECTS FOR EMERGENCIES NEAR THE TOP



NEEDS TO BE ABLE TO FIT HUNTED FOOD
 ↳ WHAT CAN BE EATEN IN THIS CLIMATE? * FOUND IN THE OCEAN

TUNDRA:

ARCTIC FOX	KILLER WHALE*	SEA LION*
SQUIRREL	LEMNING	SEAL*
BELUGA WHALE*	MOOSE	SLED DOG
CARIBOU	MUSK OX	RABBIT
ERMINE	POLAR BEAR	WALRUS*
GRIZZLY BEAR	RED FOX	WEASEL
GRAY WOLF	REINDEER	WOLVERINE

TAIGA:

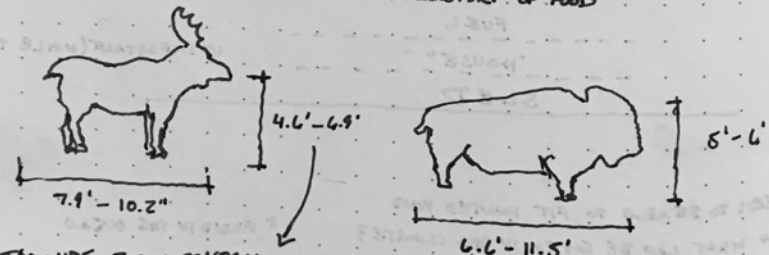
MOOSE	WOOD BISON	RABBIT	MARTEN	FISHER
REINDEER	BEAVER	LYNX	OTTER	GRAY WOLF
CARIBOU	SQUIREL	STRAIT	MINK	COYOTE
ELK	PORCUPINE	WEASEL	WOLVERINE	RED FOX
ROE DEER	VOLE	SABLE	BADGER	BROWN/BLACK BEAR

TAIGA:

THRUSH	ROUGH-LEGGED HAWK
WHITE-THROATED SPARROW	RAVEN
BLACK-THROATED GREEN WABLER	GOOSE
GOLDEN EAGLE	CROW/BILLS
ALASKA BLACKFISH	NORTHERN PILE
WALLEYE	LONGNOSE SUCKER
WHITE SUCKER	CISCO
LAKE WHITEFISH	RAINBOW WHITEFISH
PYGMY WHITEFISH	ARCTIC LAMPREY
GRAYLING	BROOK TROUT
CHUM SALMON	SIBERIAN TAIMEN
LENSK	LAKE CHUB

LARGE AMOUNTS OF CARNIVOROUS MEAT IS UNHEALTHY. THEY HAVE LESS NUTRIENTS AND MORE TOXINS. SOME IS OKAY IF THERE IS NOTHING ELSE. HERBIVORES ARE THE BEST IN TERMS OF ENERGY TRANSFER.

MOOSE + BISON ARE LARGEST ANIMALS TO BE EATEN AT 446-1500 LBS
 ↳ SLED SHOULD FIT THESE ANIMALS FOR TRANSPORT OF FOOD



TOO WIDE FOR A PRACTICAL SLED. LEGS COULD BE MOVED TO FIT

WOULD THIS BE TOO LONG TO PUT? MAYBE THE ANIMAL WOULD HAVE TO BE CLEANED PRIOR TO TRANSPORT

THIS SIZE GAME MAY BE TOO MUCH FOR A SOLO HUNTER TO MANAGE AND TRANSPORT - DEER WOULD BE EASIER

DIDN'T CONSIDER FISH - MAY BE THE BEST OPTION.
 ↳ SMALL ENOUGH TO TRANSPORT

EASIER TO CLEAN
 DON'T HAVE TO TRACK
 SURVIVE CLIMATE CHANGES BETTER?
 POTENTIALLY BE EATEN RAW

WOULD TRAPPING BE A GOOD OPTION? BETTER FOR STAYING IN ONE LOCATION.

NEEDS TO CARRY FUEL FOR FURNACE/COOKING FIRE
 ↳ WOOD

ANIMAL FAT
 ANIMAL FECES HOW MUCH IS NEEDED?
 GRASS/PAK

WOOD CAN BE FOUND ON SITE (MAY NEED TO BE DRIED)
 ↳ SO CAN BARK + GRASS
 ANIMAL FAT MUST BE TRANSPORTED
 ↳ NOT TOO MUCH ROOM BUT HEAVY

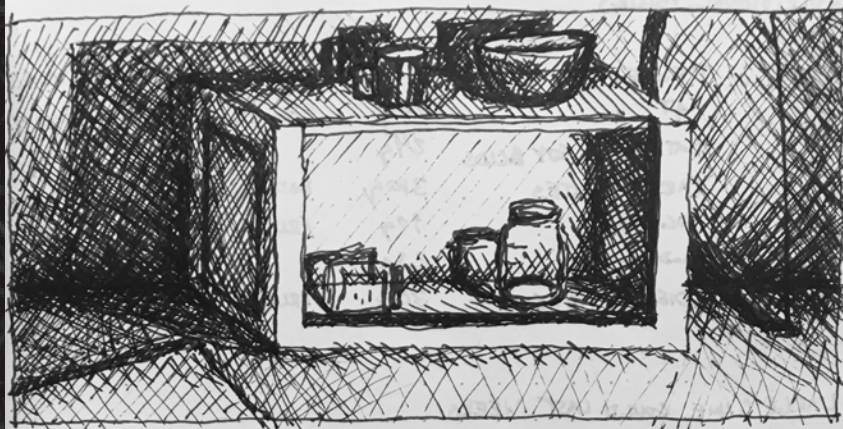
HARDWOODS GIVE OFF MORE HEAT/VOL

(52) ASH	BONAN	BURNS VERY WELL	
(54) BEECH	THORN		
	HANTHORN		
	APPLE	HAZEL	BURNS WELL
(57) BIRCH	HORNBEAM		
(29) CEDAR	LILAC		
(45) CHERRY	HAPLE (56)		
(62) OAK	PEAR		
(40) PINE	PLUM		
(54) ELM	LARCH (48)	BURNS OKAY	
	LAUREL	SYCAMORE (52)	
(46) ALDER	CHESTNUT (55)	DOES NOT BURN WELL	
(46) FIR	EUCALYPTUS		
(40) HOLLY	LABURNUM		
(40) SPRUCE	WILLOW		
(38) POPLAR			

2 CORDS / 700 SF → 1 CORD / 350 SF (CONSERVATIVE)
 OCT-APRIL = 212 DAYS

1 CORD = 85 FT³ = 0.4 FT³/DAY
 212 DAYS

29-62 LBS/CU.FT = 11.4-24.8 LBS/DAY



JORDAN'S FOOD STORAGE BOX IS EMPTY WHEN HE OPENS IT TO LOOK FOR SOMETHING TO EAT.

HOW LARGE IS THE BOX? HOW MUCH FOOD DOES IT NEED TO HOLD? DOES IT NEED INSULATION?

WHAT TEMPERATURE SHOULD FOOD BE KEPT?

WHAT SORT OF FOOD IS HE EATING/BRINGING

↳ HUNTING + GATHERING

EASIER TO FIND MEAT IN WINTER

WHAT FLORA CAN BE FOUND IN WINTER

↳ PLANTS IMPORTANT FOR NUTRITION → SCURVY

TUNDRA: BEARBERRY

BLACK CROWBERRY

CLOWDBERRY

BILLBERRY

ARCTIC FERNWEED

MOUNTAIN SORREL

ESKIMO RHUBARB

NORTHERN SHORT CUTSROOT

CONSIP.

ANGELICA

DANDELION

WILLOW

LIQUORICE-ROOT

ALPINE BISERT

MUSHROOMS

LINGON

ALPINE BERRY

NORTHERN RED CUCURBIT

LOUSE-WORT

HAINY FERNWEED

BROAD-LEAVED WILLOW-HERB

ARCTIC SWARDOCK

MARSH-FLEABANE

ROSEHAUT

SEA PURSLANE

ROUND-LEAVED SAXIFRAGE

SCURVY GRASS

ESKIMO POTATO

LICHENS

SEAWEED

NUTRITIONAL VALUES

ADULT: PROTEIN	50g	MEAT, EGGS, NUTS, LEGUMES, FISH
FAT	70g	MEAT, EGGS, NUTS, FISH, DAIRY
SATURATED FATTY ACIDS	24g	
CARBOHYDRATES	310g	ROOTS, GRAINS
SUGARS	90g	FRUIT, VEGETABLES
SODIUM	23g	
DIETARY FIBRE	30g	FRUITS, VEGETABLES

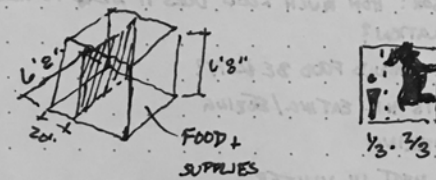
LARGE GAME COULD LAST WEEKS

↳ NEED TO BE ABLE TO STORE ANIMAL

↳ MAYBE NOT IN ONE BOX

CAN SOME BE KEPT OUTSIDE? WILL ANIMALS COME?

SHELTER MAY NEED TO HOLD PERSON + ANIMAL



ABILITY TO DRY MEAT IMPORTANT?

↳ HOW DO INUIT PEOPLE PRESERVE FOOD?

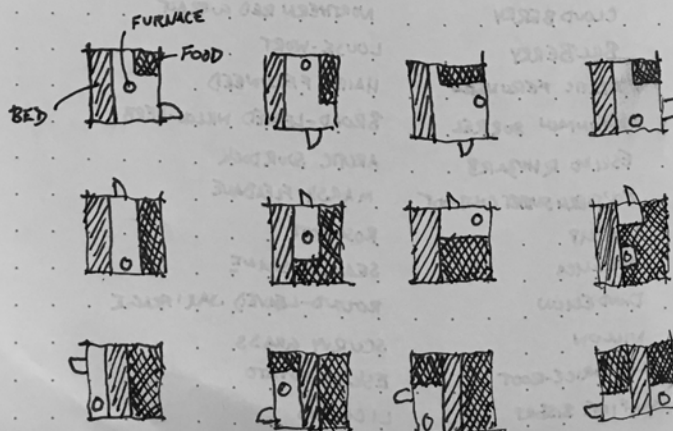
EFFICIENCY OF SPACE

IS KEY → LESS SPACE

= LESS FUEL

= MORE HEAT

SHOULD FOOD BE KEPT AWAY FROM BED?

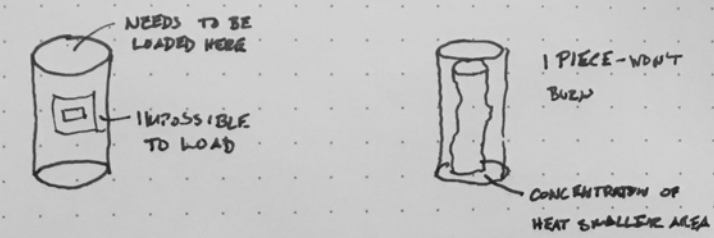


IS THE SQUARE THE BEST?

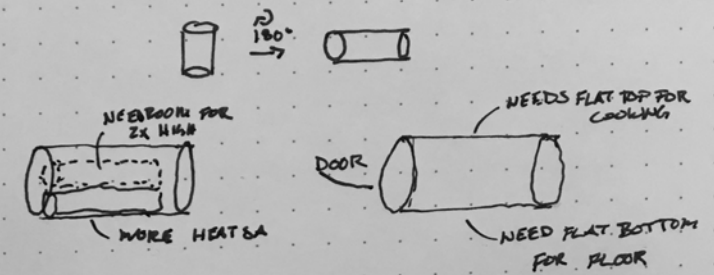
↳ FIND OUT HOW BEST TO HEAT

WILL BE THE DOWNS

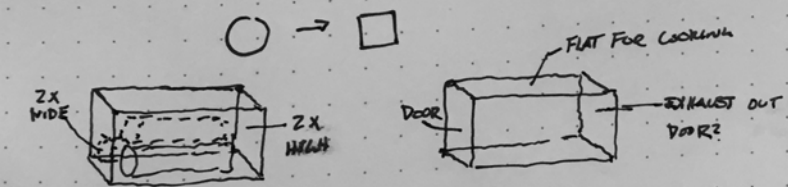
IS THE CYLINDER THE BEST SHAPE FOR FURNACE?



NEEDS TO BE HORIZONTAL



NEEDS TO BE FLAT



MANIPULATE TO KEEP ON BED BUT AWAY FROM FOOD → WOULD A PARTITION BE NEEDED?

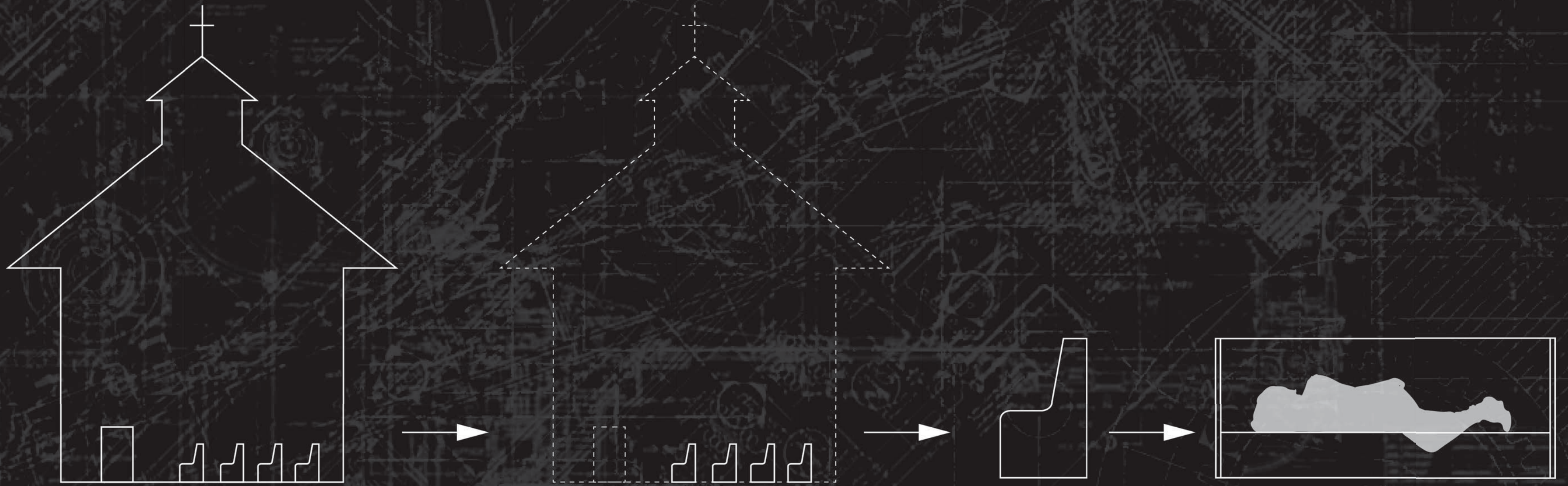
DESIGN

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.

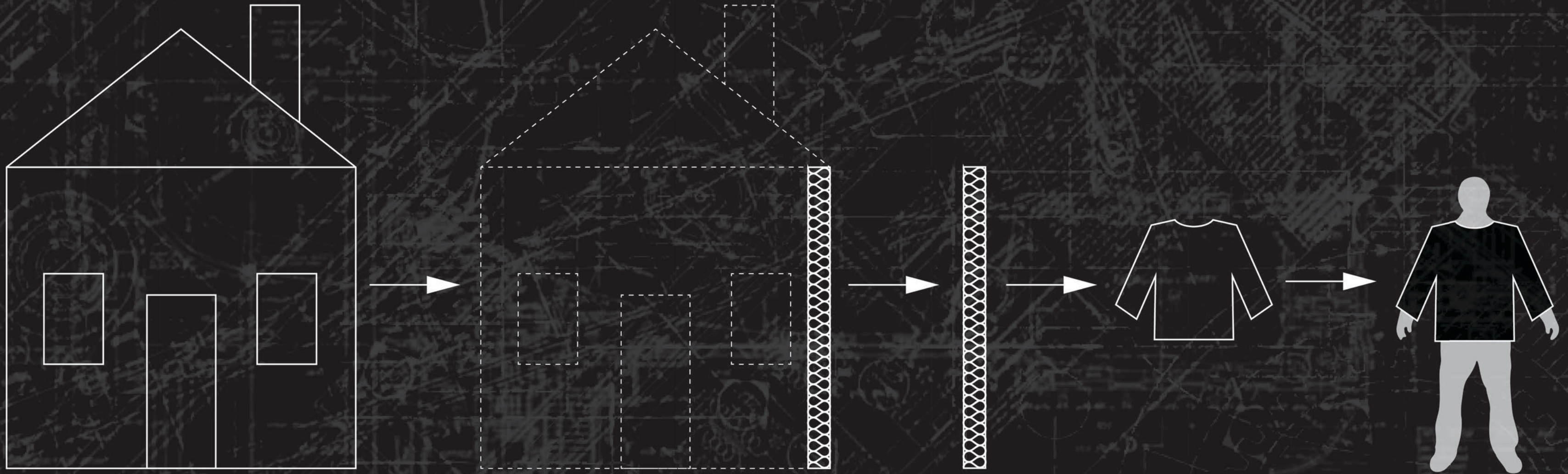
[THE NOMAD]



[THE ADAPTER]



[THE RENOVATOR]



WORK CITED

The Day After Tomorrow. Dir. Roland Emmerich. Perf. Jake Gyllenhaal, Emmy Rossum and Dennis Quaid. 20th Century Fox, 2004. DVD.

Garrett, Samaria. "Are Natural Disasters Increasing?" The Borgen Project RSS2. N.p., 14 June 2015. Web. 05 Sept. 2016.

Maslow, Abraham H. *Motivation and Personality*. New York: Harper & Row, 1970.

Henry, L. G., J. F. Mcmanus, W. B. Curry, N. L. Roberts, A. M. Piotrowski, and L. D. Keigwin. "North Atlantic Ocean Circulation and Abrupt Climate Change During the Last Glaciation." *Science* 353, no. 6298 (2016): 470-74. doi:10.1126/science.aaf5529.

Alley, Richard B. *The Two-mile Time Machine: Ice Cores, Abrupt Climate Change, and Our Future*. Princeton, NJ: Princeton University Press, 2000.

Törnqvist, Torbjörn E., and Marc P. Hijma. "Links between Early Holocene Ice-sheet Decay, Sea-level Rise and Abrupt Climate Change." *Nature Geoscience* 5, no. 9 (2012): 601-06. doi:10.1038/ngeo1536.

Hill, Christopher. "Abrupt Climate Change and the Atlantic Meridional Overturning Circulation: Sensitivity and Non-linear Response to Arctic/sub-Arctic Freshwater Pulses. Collaborative Research. Final Report." 2015. Accessed October 2016. doi:10.2172/1184378.

Hemenway, Toby. *The Permaculture City: Regenerative Design for Urban, Suburban, and Town Resilience*. White River Junction, VT: Chelsea Green Publishing, 2015.

RESOURCES

Brûlé, Tyler, Italo Lupi, Ico Migliore, and Mara Servetto. *Space Morphing: Migliore Servetto Temporary Architecture = Trasformazioni Di Architettura Temporanea*. Milano: 5 Continents, 2007. Print.

Ellin, Nan, and Edward J. Blakely. *Architecture of Fear*. New York: Princeton Architectural, 1997. Print.

Jones, Peter Blundell, and Mark Meagher. *Architecture and Movement the Dynamic Experience of Buildings and Landscapes*. London: Routledge, 2015. Print.

Murphy, Douglas. *Last Futures: Nature, Technology and the End of Architecture*. London: Verso, 2016. Print.

Slavid, Ruth. *Extreme Architecture*. London: Laurence King, 2009. Print.

Garrett, Samaria. "Are Natural Disasters Increasing?" The Borgen Project RSS2. N.p., 14 June 2015. Web. 05 Sept. 2016.

Inc., Philip Beesley Architect. "Hylozoic Ground." Philip Beesley Architect Inc. Philip Beesley Architect Inc., 2016. Web. 05 Sept. 2016.

After Earth. Dir. M. Night Shyamalan. Perf. Will Smith and Jaden Smith. Sony Pictures, 2013. DVD.

The Day After Tomorrow. Dir. Roland Emmerich. Perf. Jake Gyllenhaal, Emmy Rossum and Dennis Quaid. 20th Century Fox, 2004. DVD.

Mad Max: Fury Road. Dir. George Miller. Perf. Charlize Theron and Tom Hardy. Warner Brothers, 2015.

Snowpiercer. Dir. Bong Joon Ho. Perf. Chris Evans, Jamie Bell, Tilda Swinton. Moho Film, 2014. DVD.

Independence Day. Directed by Roland Emmerich. United States: Twentieth Century Fox, 1996. DVD.

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

The Hunger Games. Directed by Garry Ross. Performed by Jennifer Lawrence and Josh Hutcherson. United States: Lions Gate, 2012. DVD.

Maslow, Abraham H. *Motivation and Personality*. New York: Harper & Row, 1970.

Henry, L. G., J. F. Mcmanus, W. B. Curry, N. L. Roberts, A. M. Piotrowski, and L. D. Keigwin. "North Atlantic Ocean Circulation and Abrupt Climate Change During the Last Glaciation." *Science* 353, no. 6298 (2016): 470-74. doi:10.1126/science.aaf5529.

Alley, Richard B. *The Two-mile Time Machine: Ice Cores, Abrupt Climate Change, and Our Future*. Princeton, NJ: Princeton University Press, 2000.

Törnqvist, Torbjörn E., and Marc P. Hijma. "Links between Early Holocene Ice-sheet Decay, Sea-level Rise and Abrupt Climate Change." *Nature Geoscience* 5, no. 9 (2012): 601-06. doi:10.1038/ngeo1536.

Hill, Christopher. "Abrupt Climate Change and the Atlantic Meridional Overturning Circulation: Sensitivity and Non-linear Response to Arctic/sub-Arctic Freshwater Pulses. Collaborative Research. Final Report." 2015. Accessed October 2016. doi:10.2172/1184378.

Hemenway, Toby. *The Permaculture City: Regenerative Design for Urban, Suburban, and Town Resilience*. White River Junction, VT: Chelsea Green Publishing, 2015.

I Am Legend. Directed by Francis Lawrence. Produced by Akiva Goldsman, James Lassiter, David Heyman, and Neal H. Moritz. By Akiva Goldsman and Mark Protosevich. Performed by Will Smith, Alice Braga, and Dash Mihok. United States: Warner Bros. Pictures, 2007. DVD.

Waterworld. Directed by Kevin Reynolds. By David Twohy and Peter Rader. Performed by Kevin Costner and Dennis Hopper. United States: Universal Pictures, 1995. DVD.

