



Photo Credit: Lucy Orta: Refuge Wear Intervention. London East End 1998
Photographer John Akehurst. Courtesy Galleria Continua San Gimignano / Beijing / Le Moulin

GIVE ME SHELTER: BODY WEAR / SECOND SKIN

FINAL PRESENTATION: DECEMBER 15TH 2010, 1:30-4P
IN THE CUBE ON THE LOWER LEVEL OF BUILDING E15

Second Skin / Bodywear: Advanced Workshop in Artistic Practice and Transdisciplinary Research.

Professor: Ute Meta Bauer

Teaching Assistant: Matthew Bunza

Media Assistants: Christopher Clepper & Martin Seymour

This workshop examines contemporary art and design as knowledge production that integrates a research component. We explore bodywear as body extension and expanded sensorium to serve and support the human body under unusual conditions such as hot and cold climates, living under water, etc.

Our aim is to develop prototypes that are transformable or multifunctional and expand the notion of the boundary between the body and environment. What kind of second skin would be required to survive walking through a volcano or to stay a few weeks in a glacier? This involves experimentation with various materials, textiles and technologies.

The class will include research, readings, individual and collective projects and presentations supplemented by field trips, screenings, and a lecture series to study the work of artists and designers such as Lucy Orta, Moreno Ferrari, and others. Films ranging from *Western Deep* by Steve McQueen, *Lessons of Darkness* by Werner Herzog, *Dark Days* by Marc Singer, to classics such as *Journey to the Center of the Earth* or *20,000 Leagues Under the Sea* will enhance our discussions.

Furthermore, we will investigate research done in MIT labs such as that of Aeronautics and Astronautics; Earth, Atmospheric, and Planetary Sciences; and the Institute for Soldier Nanotechnologies.

ACT

MIT program
in art, culture and
technology
School of Architecture + Planning

Funded (in part) by the Council for the Arts at MIT



THE GIVE ME SHELTER LECTURE SERIES DRAWS TOGETHER SPEAKERS FROM DIFFERENT DISCIPLINES TO DISCUSS QUESTIONS SUCH AS: HOW CAN BODYWEAR FUNCTION AS BODY EXTENSION OR TO SUPPORT THE HUMAN BODY UNDER UNUSUAL CONDITIONS SUCH AS HOT AND COLD CLIMATES? HOW CAN WE EXPAND THE NOTION OF THE BOUNDARY BETWEEN THE BODY AND ENVIRONMENT? WHAT KIND OF SECOND SKIN WOULD BE REQUIRED TO SURVIVE WALKING THROUGH A VOLCANO, LIVING UNDER WATER, OR VISITING OUTER SPACE? HOW DOES CLOTHING CONTRIBUTE TO THE QUESTION OF THE PROTECTION OF ENDANGERED PEOPLES AND ENVIRONMENTS?

THE ACT MONDAY NIGHT LECTURE SERIES IS ORGANIZED THIS TERM AS PART OF THE ACT COURSE OF PROFESSOR UTE META BAUER, SECOND SKIN / BODY WEAR. ARTISTIC RESEARCH AND TRANSDISCIPLINARY STUDIES, IN COLLABORATION WITH THE PERFORMANCE WORKSHOP OF PROFESSOR JOAN JONAS AND INTRODUCTION TO NETWORKED CULTURES OF LECTURER NITIN SAWHNEY. THE LECTURE SERIES IS FREE AND OPEN TO THE PUBLIC.

SERIES SCHEDULE:

9/13/10 - CLIMATE CHANGES IN SCIENCE FASHION

ELKE GAUGELE

AS FUTURE TECHNOLOGIES OF THE MODERN AUGMENTED SELF AND ITS GEOPOLITICAL EXTENSIONS, PROACTIVE CLOTHING WAS FIRST ANTICIPATED AT THE TURN OF THE CENTURY IN POPULAR CULTURE, SCIENCE FICTION AND ART. SINCE THE 1960S, THIS QUESTION HAS BECOME A FIXED PART OF THE CYBORG DISCOURSE WHILE “SCIENCE FASHIONS” WERE SHIFTING FROM ASTRONAUTICS AND MILITARY RESEARCH TO WEARABLE COMPUTING AND SMART CLOTHES. THE POLITICAL CLIMATE ALSO CHANGED SINCE THE COLD WAR. ARTISTS, ARCHITECTS AND FASHION DESIGNERS STARTED TO CREATE CLIMATE CAPSULES, GREEN WEARABLES AND INTERACTIVE RESEARCH AND COMMUNICATION TOOLS FOR CLIMATE ACTIVISTS. GAUGELE WILL REFLECT UPON THESE CLIMATE CHANGES IN “SCIENCE FASHION” AND DISCUSSES DIFFERENT POINTS OF DEPARTURE FOR ITS CONTEMPORARY ARTISTIC RESEARCH. ELKE GAUGELE IS A CULTURAL ANTHROPOLOGIST AND PROFESSOR OF FASHIONS AND STYLES AT THE ACADEMY OF FINE ARTS IN VIENNA, AUSTRIA.

09/20/10 - COM(MENT)IC: WONDERSUITS, FAST SKIN, POISON IVY

REGINA MARIA MOELLER

COMIC SUPERHEROES DRESS IN HIGHTECH SUITS THAT SUPPORT THEIR HYPERACTIVITIES WITH MAGIC POWERS. ARE THESE “WONDERSUITS” FICTIONAL? OR HAVE THEY BECOME MODELS FOR CURRENT “SECOND SKIN” DEVELOPMENTS INCLUDING SURVIVAL AND PERFORMANCE ENHANCEMENT SUITS WORN BY ASTRONAUTS, ATHLETES, AND OTHERS? MOELLER ALSO DISCUSSES THE POWER OF NATURE AS PERSONIFIED BY THE DC COMICS SUPERVILLAINESS, POISON IVY, A KEY FIGURE IN HER EXHIBITION, EMBODIMENT - DRESS PLOT. REGINA MARIA MÖLLER IS A GERMAN ARTIST, AUTHOR, FOUNDER OF THE MAGAZINE REGINA, AND CREATOR OF THE LABEL “EMBODIMENT.” SHE IS A PROFESSOR AT THE TRONDHEIM ACADEMY OF FINE ART / FACULTY OF ARCHITECTURE AND FINE ART AT THE NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY.

09/27/10 - 21ST CENTURY LIVING IN THE AMAZON: IN THE ORDER OF CHAOS

LAURA ANDERSON BARBATA

LAURA ANDERSON BARBATA WORKED WITH THE YANOMAMI PEOPLE OF THE VENEZUELAN AMAZON RAINFOREST, TEACHING THEM TO MAKE PAPER AND BOOKS SO THEY COULD WRITE THEIR OWN HISTORY. THEIR FIRST BOOK SHAPONO TELLS THE STORY OF THE GODS OMawe AND YOawe WHO TAUGHT THE YANOMAMI HOW TO BUILD THEIR HOME AS A COMMUNAL DWELLING. CONTACT WITH OUTSIDERS HAS BROUGHT WITH IT INDUSTRIALIZED MATERIALS AND SOLUTIONS INTEGRATED BY THE YANOMAMI INTO THEIR BUILDING TECHNIQUES, HOMES AND LIFESTYLE, POSING NEW CHALLENGES AND PROBLEMS FOR TRADITIONAL TIGHT-KNIT COMMUNITIES. BARBATA WILL ALSO DISCUSS HER PROJECT, MOKO JUMBIES, WHICH HAS ENGAGED AT-RISK YOUTH IN IN TRINIDAD AND TOBAGO IN THE PRACTICE OF AN ANCIENT TRADITION IN COMMUNITY-DRIVEN CULTURAL ACTIVITIES TO SUPPORT A STRONG SENSE OF IDENTITY. BARBATA IS A PROFESSOR AT THE ESCUELA NACIONAL DE ESCULTURA, PINTURA Y GRABADO LA ESMERALDA OF THE INSTITUTO NACIONAL DE BELLAS ARTES, MÉXICO.

10/04/10 - TIERRA BRILLANTE

OMAR FOGLIO AND JOSE LUIS FIGUEROA

BULBO, A TIJUANA- AND LOS ANGELES-BASED MEDIA COLLECTIVE, EXPLORES CULTURAL, ARTISTIC AND EVERYDAY THEMES OFTEN OVERLOOKED OR UNDER-REPRESENTED IN MASS MEDIA. THEIR DOCUMENTARY, TIERRA BRILLIANTE (“THE BRIGHTEST GLAZE”) SPOTLIGHTS LEAD POISONING SUFFERED BY PRACTITIONERS OF TRADITIONAL CERAMICS IN MEXICO. OMAR FOGLIO HAS TAUGHT RESEARCH METHODOLOGY, COMMUNICATIONS THEORY AND COURSES ON MUSIC AND CULTURE AT THE SCHOOL OF HUMANITIES OF

UNIVERSIDAD AUTÓNOMA DE BAJA CALIFORNIA AND AT UNIVERSIDAD IBEROAMERICANA PLANTEL NOROESTE. JOSE LUIS FIGUEROA HAS BEEN A TRIAL LAWYER AND ART INSTRUCTOR. HE CO-DIRECTED TIERRA BRILLANTE, AND OMAR FOLGIO WAS IN CHARGE OF PRODUCTION FOR THE SAME FILM. TIERRA BRILLANTE IS A CO-PRODUCTION BETWEEN GALATEA AND THE MEXICAN INSTITUTE OF CINEMA (IMCINE).

10/18/10 - SECOND SKIN BIO-SUIT

DAVA NEWMAN

WITH SUPPORT FROM THE NASA INSTITUTE FOR ADVANCED CONCEPTS AND TROTTI & ASSOC. INC., CAMBRIDGE, MASS., THE BIOSUIT WAS DEVELOPED TO PROVIDE A ‘SECOND SKIN’ CAPABILITY FOR ASTRONAUT PERFORMANCE. PROCESSES SUCH AS ELECTROSPINNING AND MELT-BLOWING HAVE BEEN USED TO DEVELOP FIBERS FOR THE SUIT. A CURRENT MOCKUP USES NYLON, SPANDEX AND URETHANE LAYERS WITH VARIED PROPERTIES AND ELECTRONICS INCORPORATED INTO THE SUIT AND HELMET MATERIALS THAT CAN HAVE “SMART TEXTILE” FUNCTIONS RELATING TO PHYSIOLOGY (THERMAL COMFORT), COMMUNICATIONS AND SPATIAL ORIENTATION. SPACE SUIT RESEARCH CAN LEAD TO IMPROVEMENTS IN THE QUALITY OF LIFE HERE ON EARTH, TOO, THROUGH ADVANCES IN ORTHOTICS THAT CAN HELP CHILDREN WITH CEREBRAL PALSY AND ‘SMART ORTHOSES’ FOR STROKE PATIENTS. DAVA J. NEWMAN IS PROFESSOR OF AERONAUTICS AND ASTRONAUTICS AND ENGINEERING SYSTEMS AT MIT SHE ASSISTED NASA IN DEVELOPING THE BIO-SUIT.

10/25/10 - SOFT, SMART & STEALTHY: NEW PARADIGMS FOR DESIGN PRACTICE

SHEILA KENNEDY

SHEILA KENNEDY WILL PRESENT RECENT RESEARCH AND WORK. SHEILA KENNEDY IS A PRINCIPAL OF KENNEDY & VIOLICH ARCHITECTURE LTD. (KVA), AN INTERDISCIPLINARY DESIGN PRACTICE THAT EXPLORES THE RELATIONSHIPS BETWEEN ARCHITECTURE, DIGITAL TECHNOLOGY AND EMERGING PUBLIC NEEDS. RECENT PROJECTS AT KVA INCLUDE THE IBA-HAMBURG SOFT HOUSE IN GERMANY, THE LAW SCHOOL AT UNIVERSITY OF PENNSYLVANIA, HARVARD UNIVERSITY’S DEPARTMENT OF FILM AND VIDEO, AND THE EAST RIVER PUBLIC FERRY TERMINAL AT 34TH STREET IN MANHATTAN. THE WORK OF KVA HAS BEEN RECOGNIZED BY NATIONAL DESIGN EXCELLENCE AWARDS FROM THE AMERICAN INSTITUTE OF ARCHITECTURE, PROGRESSIVE ARCHITECTURE AWARDS, INDUSTRIAL DESIGN EXCELLENCE AWARDS, THE GOOD DESIGN AWARD FROM THE CHICAGO ATHENAEUM, THE GREEN COUNCIL’S NATIONAL BUILDING INNOVATION AWARD AND THE PUBLIC WORK AWARD OF THE NATIONAL ENDOWMENT FOR THE ARTS. SHE IS A PROFESSOR OF THE PRACTICE, ARCHITECTURAL DESIGN AT MIT.

11/01/10 - BUILD YOUR OWN WORLD

STEVE DIETZ

STEVE DIETZ IS THE ARTISTIC DIRECTOR OF ZERO1 WHICH PRODUCES THE 01SJ BIENNIAL, DEDICATED TO INSPIRING CREATIVITY AT THE INTERSECTION OF ART, TECHNOLOGY AND DIGITAL CULTURE. DIETZ IS A SERIAL PLATFORM CREATOR. HE PREVIOUSLY FOUNDED NORTHERN LIGHTS, AND IS THE FORMER CURATOR OF NEW MEDIA AT THE WALKER ART CENTER IN MINNEAPOLIS, MINNESOTA, WHERE HE FOUNDED THE NEW MEDIA INITIATIVES DEPARTMENT IN 1996, THE ONLINE ART GALLERY 9 AND DIGITAL ART STUDY COLLECTION. DIETZ FOUNDED ONE OF THE EARLIEST, MUSEUM-BASED, INDEPENDENT NEW MEDIA PROGRAMS AT THE SMITHSONIAN AMERICAN ART MUSEUM IN 1992.

11/08/10 - METABOLIC STUDIO

LAUREN BON

LAUREN BON WILL TALK ABOUT CURRENT PROJECTS WITH HER METABOLIC STUDIO, INCLUDING SILVER AND WATER, A FILM MADE OUT OF THE SILVER AND WATER HISTORICALLY MINED OUT OF THE OWENS RIVER VALLEY. THE FILM—TO BE RELEASED IN NOVEMBER 13, 2013, TO COMMEMORATE THE 100TH ANNIVERSARY OF THE OPENING OF THE LOS ANGELES RIVER PIPELINE—IS PHYSICALLY MADE OUT OF THE MATERIALS OF THE VALLEY AND DEVELOPED WITH THE TRONA EXCAVATED FROM THE DRY LAKEBED. SHE WILL ALSO DISCUSS THE ANABOLIC MONUMENT. THE MONUMENT IS AT THE SITE WHERE NOTACORNFIELD WAS LOCATED—AT THE OTHER END OF THE L.A. RIVER, SOME 240 MILES AWAY. HER TALK WILL ADDRESS HOW THESE METABOLIC WORKS USE CREATIVE ENDEAVOR TO GALVANIZE SOCIAL AND POLITICAL TRANSITION WITHIN COMPLEX BUREAUCRACIES SUCH THE DEPARTMENT OF WATER AND POWER AND THE STATE PARK SYSTEM. LAUREN BON IS AN ARTIST AND MIT ALUMNA. HER METABOLIC STUDIO IS BASED IN LOS ANGELES.

PARTICIPATING STUDENTS:

Manyan Lam	Architecture
Matthew Everett Lawson	Art Culture and Technology
Marie McGraw	Mechanical and Ocean Engineering
Amanda Moore	Art Culture and Technology
Mavis Yip Ho Kwan	Architecture
Kian Yam Hui Lam	Architecture
Elizabeth Anne Watkins	Art Culture and Technology
Scott Ferebee	Architecture
Nancy Kim	Architecture
Alex Marshall	Architecture
Scott Berzofsky	Art Culture and Technology
Leah Brunetto	Architecture
Miho Chu	Architecture
Theodossis Issaias	Architecture
Mabel Negrete	Art Culture and Technology
Maryam Eskandari	Aga Khan Program in Islamic Architecture
Jeremy Green	Architecture (Harvard GSD)
Emily Tow	Mechanical Engineering
Gerhard van der Linde	Architecture
Sarah Hovsepian	Architecture
Jae Kyung Kim	Architecture
Chris Malcolm	Architecture
Katia Zolotovskiy	Art Culture and Technology

DISTINGUISHED GUEST CRITICS:

Azra Aksamija is an artist and architectural historian. She holds degrees in architecture from the Technical University Graz, Austria and Princeton University and is currently a Ph.D. candidate at the Department of Architecture, MIT (HTC Section / Aga Khan Program for Islamic Architecture). Her broader artistic and academic practice explores representation of Islam in the West, spatial mediation of conflicts over identity, and cultural interaction through architecture. Her interdisciplinary projects have been published and exhibited in various international venues, most recently at the Secession Vienna (2007), Manifesta 7 (2008), Stoom, The Hague (2009), and the Royal Academy of Arts in London (2010).

Leah Buechley is an Assistant Professor at the MIT Media Lab where she directs the High-Low Tech research group. The High-Low Tech group explores the integration of high and low technology from cultural, material, and practical perspectives with the goal of engaging diverse groups of people in developing their own technologies. Leah received PhD and MS degrees in computer science from the University of Colorado at Boulder and a BA in physics from Skidmore College.

Jeff Lieberman explores the connections between the arts and sciences, and the potential future of human consciousness. He hosts 'Time Warp' on the Discovery Channel, using technology to see beyond the limits of our normal human perception. He composes music in the duo gloobic, and has performed in Carnegie Hall. He shows technological sculptures around the world, to bring people an emotional and mystical connection with science and the universe. Having finished four degrees at MIT (BS: Physics, Math, MS: Mech. Engineering, Media Arts and Sciences), he is exploring the applications of technology to evolving and shifting human consciousness.

Nomeda Urbonas is an artist working collectively with Gediminas Urbonas. The team has established an international reputation for socially interactive and interdisciplinary practice exploring the conflicts and contradictions posed by the economic, social, and political conditions in the former Soviet countries. Urbonas are the cofounders of JUTEMPUS interdisciplinary art program, VILMA (Vilnius Interdisciplinary Lab for Media Art), and VOICE, a net based publication on media culture. They have exhibited at the San Paulo, Berlin, Moscow and Gwangju Biennales, Manifesta 4 - and at Documenta 11 - among numerous other international shows, including a solo show at the 52nd Venice Biennale and MACBA in Barcelona. They have been awarded a number of high level grants and residency awards, including the Lithuanian National Prize for achievements in the arts and culture (2007); a Prize for the Best International Artist at the Gwangju Biennale (2006); and a Honourable Mention to a National pavilion at the 52nd Venice Biennale (2007). Since 2008 Nomeda is a PHD research fellow at NTNU, Norwegian University for Science and Technology, Faculty of Architecture and Fine Art.

Adam Whiton is a researcher and PhD candidate at the MIT Media Lab researching the complex relationships between the body and technology. His current focus is in developing a sartorial method for wearable technologies. He develops clothing and textiles embedded with electronics and computation using the study of human factors, robotics and social theory to inform his design process. He also holds a BFA from the Rhode Island School of Design, where he studied mechanical and industrial design, and is a member of the Interrogative Media Group at MIT.

Yanni Loukissas is a designer and researcher, currently working with the Laboratory for Automation, Robotics, and Society at MIT. He holds a Ph.D in Design and Computation from MIT, a Master of Science in Architectural Studies from MIT, and a Bachelor of Architecture from Cornell University. While at MIT he was a Presidential Fellow, a National Science Foundation pre-doctoral fellow, a member of the Initiative on Technology and Self, and a Research Assistant at the MIT Media Lab's Center for Bits and Atoms.

Jae Rhim Lee is a visual artist and designer based in Cambridge, MA. Lee received a Master of Science in Visual Studies from MIT in 2006. Her work proposes unorthodox relationships between the mind/body/self and the built and natural environment which challenge the boundaries between self and other prescribed by society and culture. Lee's long term projects follow a research methodology which includes self-examination, transdisciplinary immersion and dialogue, and diy-design, ultimately taking the form of living units, furniture, wearables, recycling systems, and personal and social interventions. Lee's current project, the Infinity Burial Project, proposes alternatives for the post-mortem body and features the training of a unique strain of an edible mushroom to decompose and remediate toxins in human tissue, the development of a decomposition 'kit,' and a membership society devoted to the promotion of death acceptance and the cultivation of decomposing organisms.

Jegan Vincent de Paul is a transdisciplinary artist and freelance graphic designer. He has worked with internationally recognized designers and artists in China, Brazil, the United States, and Canada, including LO-TEK, Ai Weiwei, Antonio Muntadas, Krzysztof Wodiczko and international curator Ute Meta Bauer. His work has been exhibited in numerous galleries and media channels, including the New York Times. He holds a Master of Architecture from the University of Toronto, and a Master of Science in Visual Studies from MIT.

PHOTOS FROM PUBLIC PRESENTATION ON 12/6/2010



EXTREME : DARKNESS

DARKNESS

AS AN EXTREME ENVIRONMENT

In what ways could humans communicate and navigate in complete darkness?

OVERVIEW + CONCEPT

Historically, civilizations did not always have the luxury of artificial illumination. When the sun set, the day activities that functioned only with light ceased and night activities began. With the rise of industrialization, civilizations could engage in certain activities such as reading and exploring at night. This research takes darkness as a potential extreme environment. It investigates alternate methods of navigating and communicating without sight and any aids in sight such as illumination. The scenarios we are analysing include absolute darkness in nature, man-made environments and darkness in the perspective of the blind community. Some examples of total darkness in nature are remote wilderness and the center of the Pacific or Atlantic Ocean, where no artificial light can be found. An urban environment of darkness is the case of a black-out. And a deeper study into the skills of nocturnal animals serve as precedents to prospective tactics that humans could acquire. Examining existing way-finding manners of the blind also aid in furthering the reality of our proposals.



ITALO CALVINO INVISIBLE CITIES
Cities & Desire 5

From there, after six days and seven nights, you arrive at Zobeide, the white city, well exposed to the moon, with streets wound about themselves as in a skein. They tell this tale of its foundation: men of various nations had an identical dream. They saw a woman running at night through an unknown city; she was seen from behind, with long hair, and she was naked. They dreamed of pursuing her. As they twisted and turned, each of them lost her. After the dream, they set out in search of that city; they never found it, but they found one another; they decided to build a city like the one in the dream. In laying out the streets, each followed the course of his pursuit; at the spot where they had lost the fugitive's trail, they arranged spaces and walls differently from the dream, so she would be unable to escape again.

This was the city of Zobeide, where they settled, waiting for that scene to be repeated one night. None of them, asleep or awake, ever saw the woman again. The city's streets were streets where they went to work every day, with no link any more to the dreamed chase. Which, for that matter, had long been forgotten.

New men arrived from other lands, having had a dream like theirs, and in the city of Zobeide, they recognized something from the streets of the dream, and they changed the positions of arcades and stairways to resemble more closely the path of the pursued woman and so, at the spot where she had vanished, there would remain no avenue of escape.

The first to arrive could not understand what drew these people to Zobeide, this ugly city, this trap.

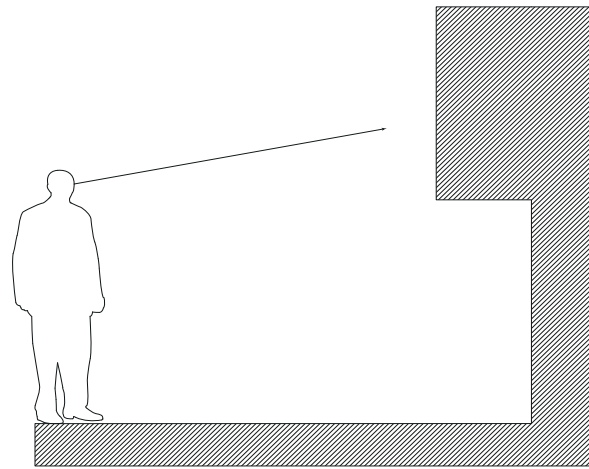
In the presence of light, eyesight for the majority of people is the primary sense, but in the absence of light hearing and feeling become significant channels of navigating much like nocturnal animals. Camouflage also becomes an approach to surviving in the night. Various navigation and communication mechanisms are tested to envision surviving in complete darkness without the sense of eyesight, which .

In the absence of light, objects become figures and silhouettes. Color is no longer as visible and objects fall into an achromatic scale of grey. Situating and communicating become challenging with sight. Peripheral vision becomes more essential in detecting movement. The lack of light calls for a sharpening of hearing and touching. A group of blind individuals have acquired a skill called human echolocation.

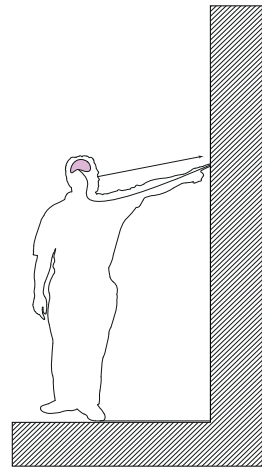


UNITED STATES LIGHT POLLUTION

SCENARIOS : MEANS OF PERCEPTION



VISUAL LOCATION
VISUAL ORIENTATION AND PROXIMITY



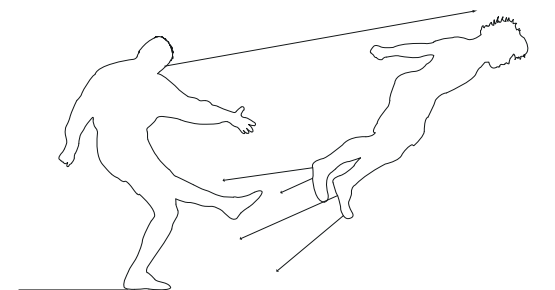
VISION = TOUCH



THE HUMAN FORM

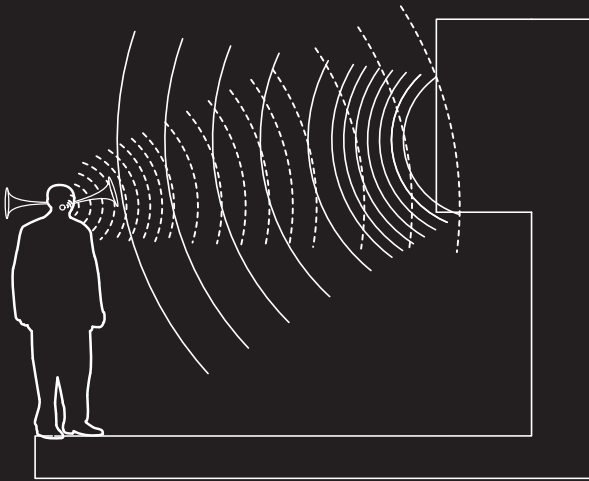


VISIBLE EMOTION

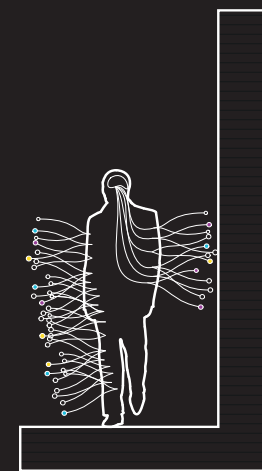


VISIBLE DEFENSE

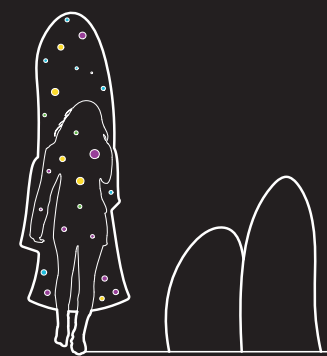
LIGHT DARK



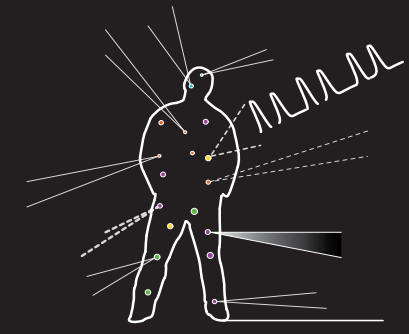
ECHO LOCATION
ORIENTATION, PROXIMITY, DENSITY



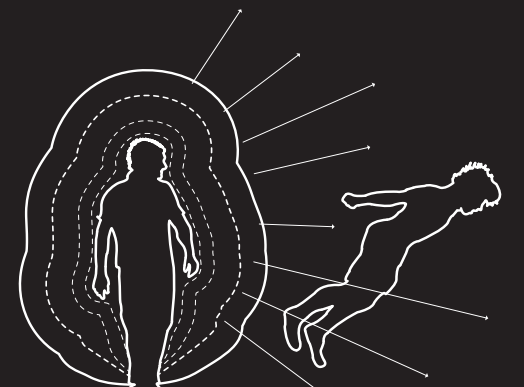
TOUCH = TASTE, SMELL, VISION



THE "GHILLIE" SUIT
CAMOUFLAGE IN DARKNESS

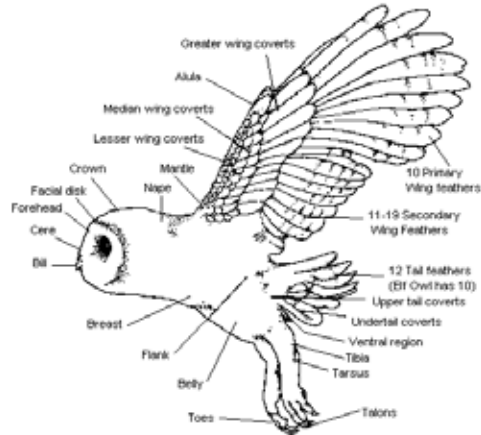


EMOTION IN DARKNESS
SONIC, LUMINESCENT, RADIANT



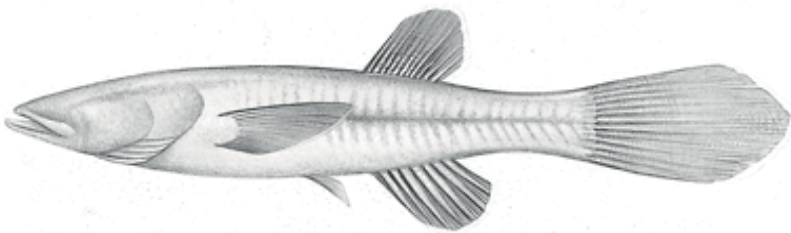
360° DEFENSE

PRECEDENTS : NATURAL WORLD



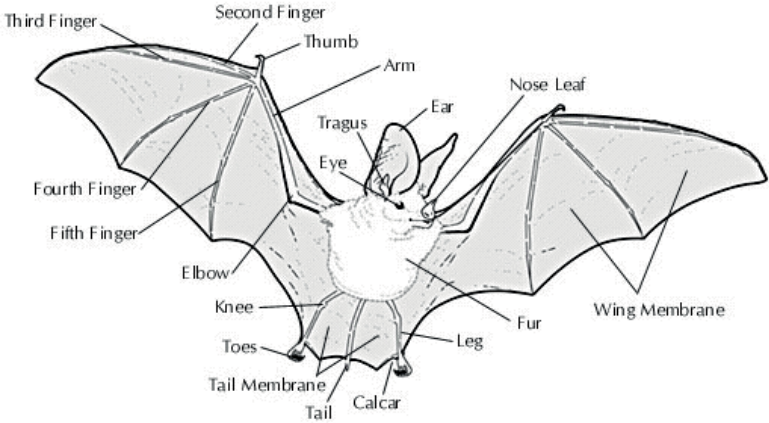
OWL *Tyto alba*

Owls utilize “filoplumes,” or feelers, made up of dull coloration, to blend in with various surroundings. Owls also have a wide range of vocalization, from hoots, whistles, screeches, screams, purrs, snorts, chitters, and hisses. Owls interpret a clicking noise (able to be simulated by humans) as a threat display.



CAVEFISH *Amblyopsis Spelaea*

Cavefish (blind fish) have no eyes or pigmentation due to having adapted to complete absence of light in caves. They navigate the water via sensory papillae on their skin.

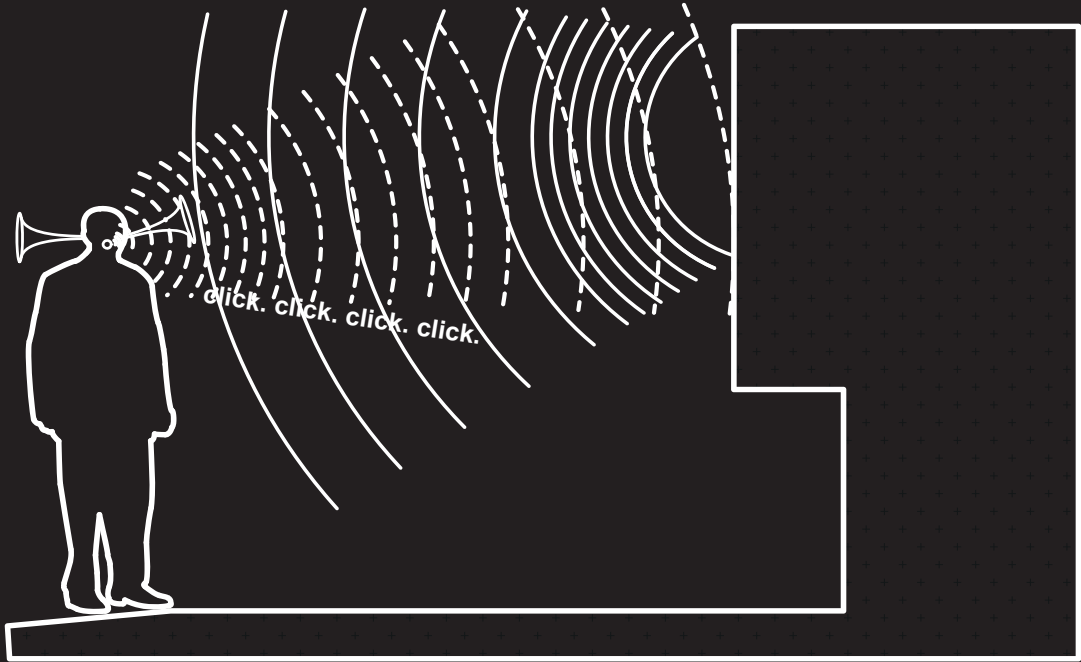


BAT *Microchiroptera*

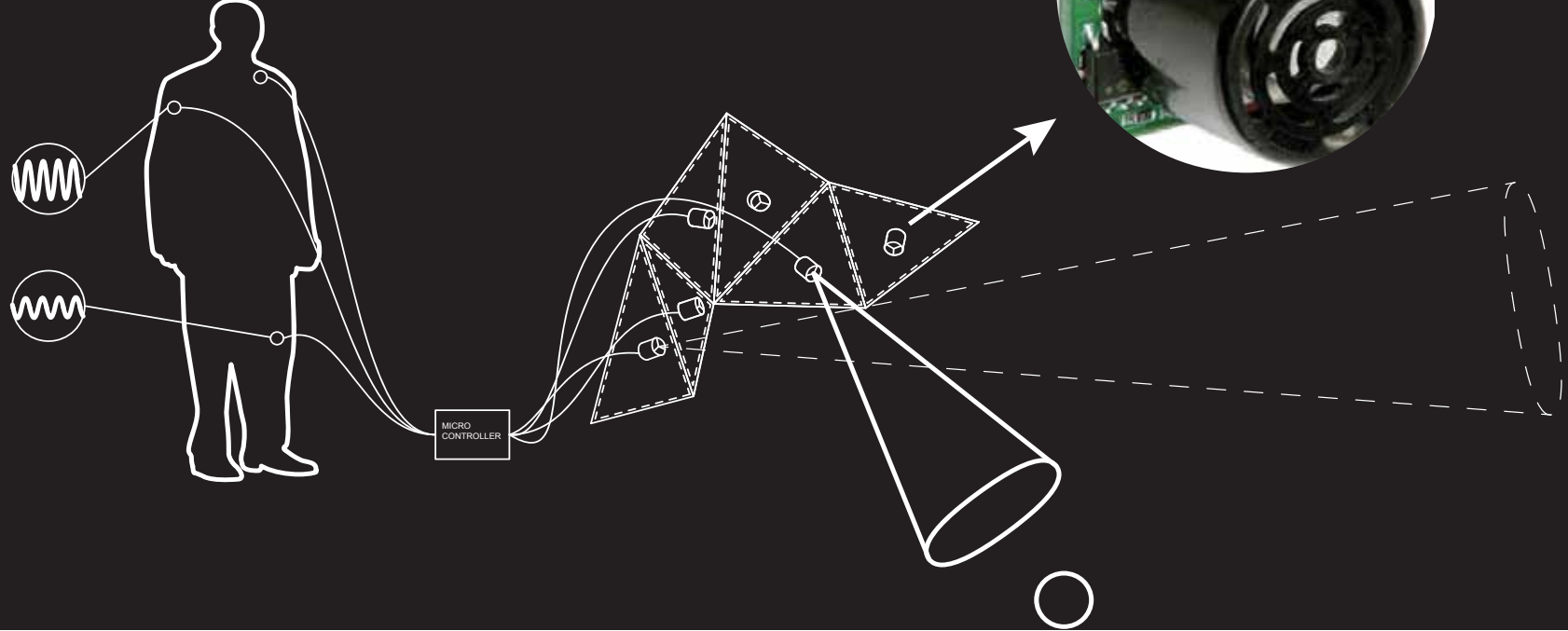
Bats use echo location to navigate; they are blind and they rely on large ear holes that enable them to wayfind via sonar detection. They produce sounds similar to owls, which reflect off objects in the distance and are used to differentiate proximity, scale, and density of objects in their environment.

HUMAN ECHO LOCATION

One group of blind individuals who navigate by echo location is called Team Bat. They rely largely on echoes from the clicking of their tongues to differentiate between spaces.



SENSING PROXIMITY



MATERIALITY OF A TYPICAL URBAN ENVIRONMENT

DIRECTIONALITY	PHYSICALITY	MATERIALITY	POROSITY	LEVEL OF ABSORPTION/ SOUND REFLECTIVITY
VERTICAL	BUILDINGS	GLASS, BRICK, STONE, METAL	LOW	MEDIUM TO HIGH REFLECTIVITY
	STREET FURNITURE (LAMP POSTS)	METAL, PAINTED SURFACES	LOW	MOSTLY HIGH REFLECTIVITY
	VOID SPACES (ALLEYS)	AIR	HIGH	HIGH ABSORPTION
	TREES	CELLULOSE	MEDIUM	MEDIUM ABSORPTION
HORIZONTAL	GROUND	ASPHALT, VEGETATION, WATER	HIGH	MEDIUM REFLECTIVITY
	PEDESTRIAN LEVEL STOREFRONTS	METAL, PAINTED SURFACES, GLASS, WOOD	LOW	HIGH REFLECTIVITY
	VEGETATION	SOIL, PLANTS, CELLULOSE	HIGH	HIGH ABSORPTION
TRANSIENT	PEOPLE	FIBERS, SKIN	HIGH	MEDIUM ABSORPTION
	CARS	METAL, PAINTED SURFACES, GLASS	LOW	HIGH REFLECTIVITY
	PUBLIC TRANSPORTATION VEHICLES	METAL, PAINTED SURFACES, GLASS	LOW	HIGH REFLECTIVITY
	PRECIPITATION	WATER (LIQUID / SOLID)	HIGH	MEDIUM ABSORPTION

PROTOTYPES + EXPERIMENTS



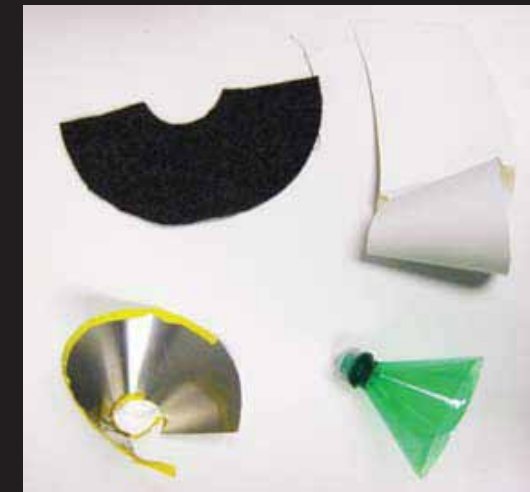
FIRST MOCK-UP: EXPLORATION INTO CREATING A DARK ENVIRONMENT + CAMOUFLAGE IN DARKNESS



STUDIES IN TRIANGULATION, PATTERNING AND PANELIZING



SONIC SENSORY TRAINING HOOD



MATERIAL STUDIES: CONES FOR SOUND AMPLIFICATION AND DAMPENING



FIELD TEST: FINDING THE SOURCE OF MUSIC AFTER BEING DISORIENTED THROUGH 360 DEGREE SPINS
THE GOAL: TO NAVIGATE SPACE WITHOUT A RELIANCE ON VISION; TO TRAIN OUR AUDITORY PERCEPTION

TESTING SCENARIOS : OPEN HOUSE PROTOTYPES

ROOM IN LIGHT

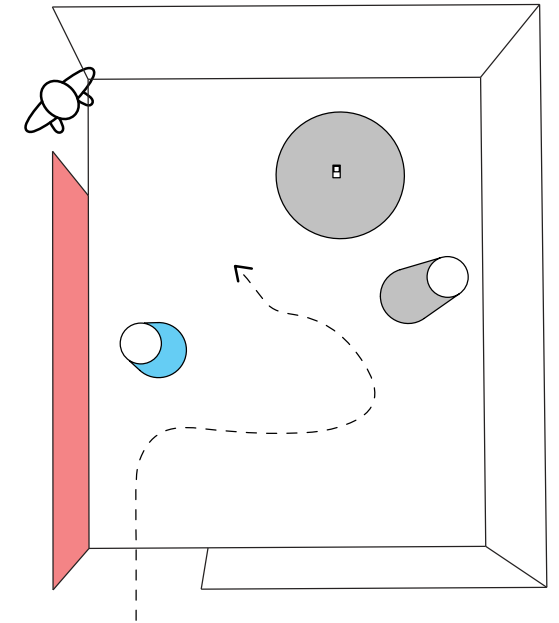
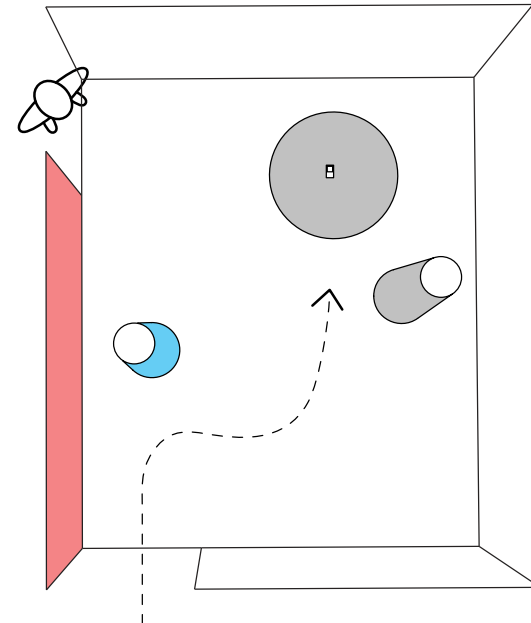
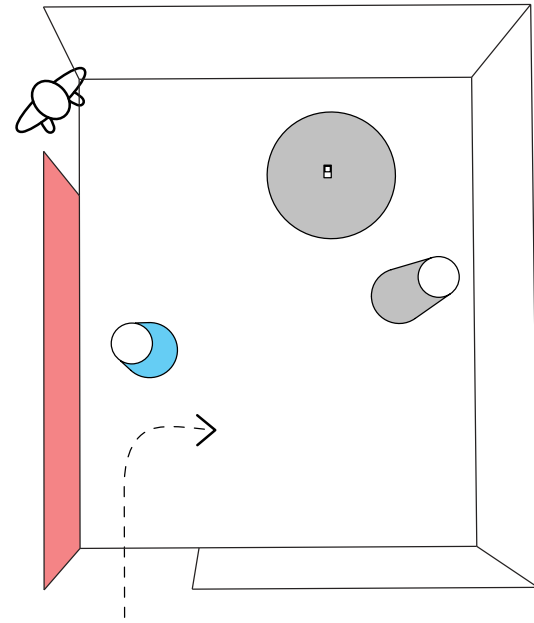
KEY

 SUBJECT PATH

 OBSERVER

 WALL
(MATERIAL 1)


 OBJECT
(MATERIAL 2)



SOUNDS IN DARKNESS

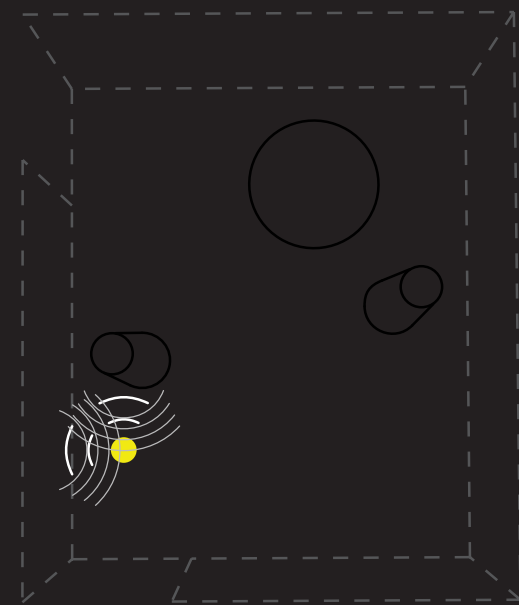
 HUMAN WHISPER

 SOUND SOURCE
(ie CELL PHONE)

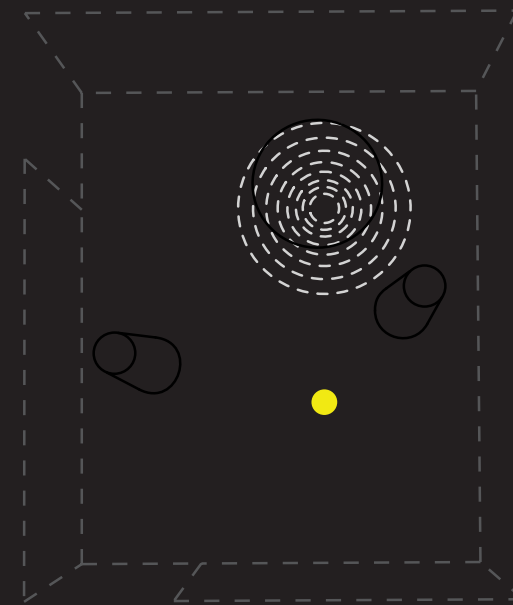
 ECHO
(WALL/OBJECT AHEAD)

 SOUND EMITTED
(TEST FOR ECHO)

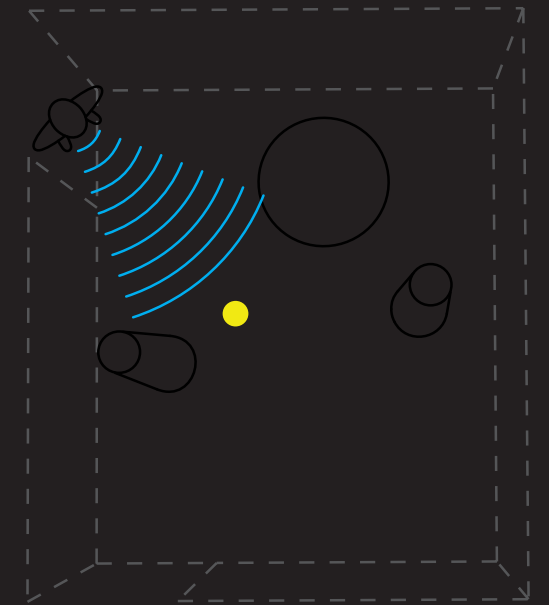
 SUBJECT LOCATION



1: SUBJECT ENTERS ROOM



2: SUBJECT LOCATES PHONE RING



3: SUBJECT DETECTS WHISPERING



NANCY KIM

Nancy Kim is currently a second year student in the Master of Architecture program at MIT (2013 Candidate). She earned a BFA in Architectural Design from Parsons School of Design in New York, where she was born and raised. She also studied abroad briefly at the University of Paris - La Sorbonne. After Parsons, she worked at a residential architecture firm for a few years. In her free time, Nancy serves on the board of a community-based non-profit organization in her hometown and volunteers with Materials for the Arts, an organization of the Cultural Affairs Department of NYC. Most recently, she worked with a non-profit organization called Terreform One in an urban farming lab, where new prototypes of vertical farming systems were created.

While at MIT, Nancy has become interested in implementing environmentally conscious ideas into her architecture studio projects. She has been interested in researching systems that can merge both low and high-tech strategies and thinks that the advanced seminar Second Skin: Designing for the Extreme Climate would open up an opportunity to conduct this research.



ALEXANDER MARSHALL

Alexander is currently a degree candidate for Master of Architecture (2013). He earned a Bachelors of Science of Architectural Studies at the University of Wisconsin-Milwaukee. While attending he took a leading role in a design and fabrication studio, in conjunction with Barkow Leibinger Architekten of Berlin Germany. As a result of the semesters work, a pavilion was fabricated and constructed beneath the 35th st. Viaduct in Milwaukee, WI. Work from the studio can be found in a number of recent international publications such as C3 Magazine of Korea and Architecture Now 7, it has also been displayed alongside other Barkow Leibinger pavilions in "DER PAVILION" at the Deutsches Architektur Museum in Frankfurt, Germany. After the pavilion project, Alexander worked in Berlin for Barkow Leibinger on a number of fabrication Projects. Recently he has made contributions to the work of Liam O'Brien, in the MOMA PS1 submission "Weathers Permitting", as well as, fabrication design for Joel Lamere's pavilion "21 arch follium" at the Evergreen Museum in Baltimore, Maryland. Two of his personal projects at MIT "Weave" and "Library of Libraries" have been submitted to the Department of Architecture Archives. Recently he was the recipient of the Floyd A. Naramore Architectural Fellowship. Currently his work focused on the relationship between complex patterns of perforation, specifically referring to the delivery of light through the building envelope. The work is also concerned with the relationship between the occupant and varying levels of transparency, translucency and opacity within the building. The focus is to Create innovative design tools and pro to typing techniques (specifically physical model building) to produce complex assemblies, which can ultimately be fabricated using low tech construction methods and processes. The Second Skin course is of particular interest, because it considers the relationship between the body and a second skin which regulates or controls mechanisms, such as human senses, and it has a microscale alignment with the aforementioned focus.



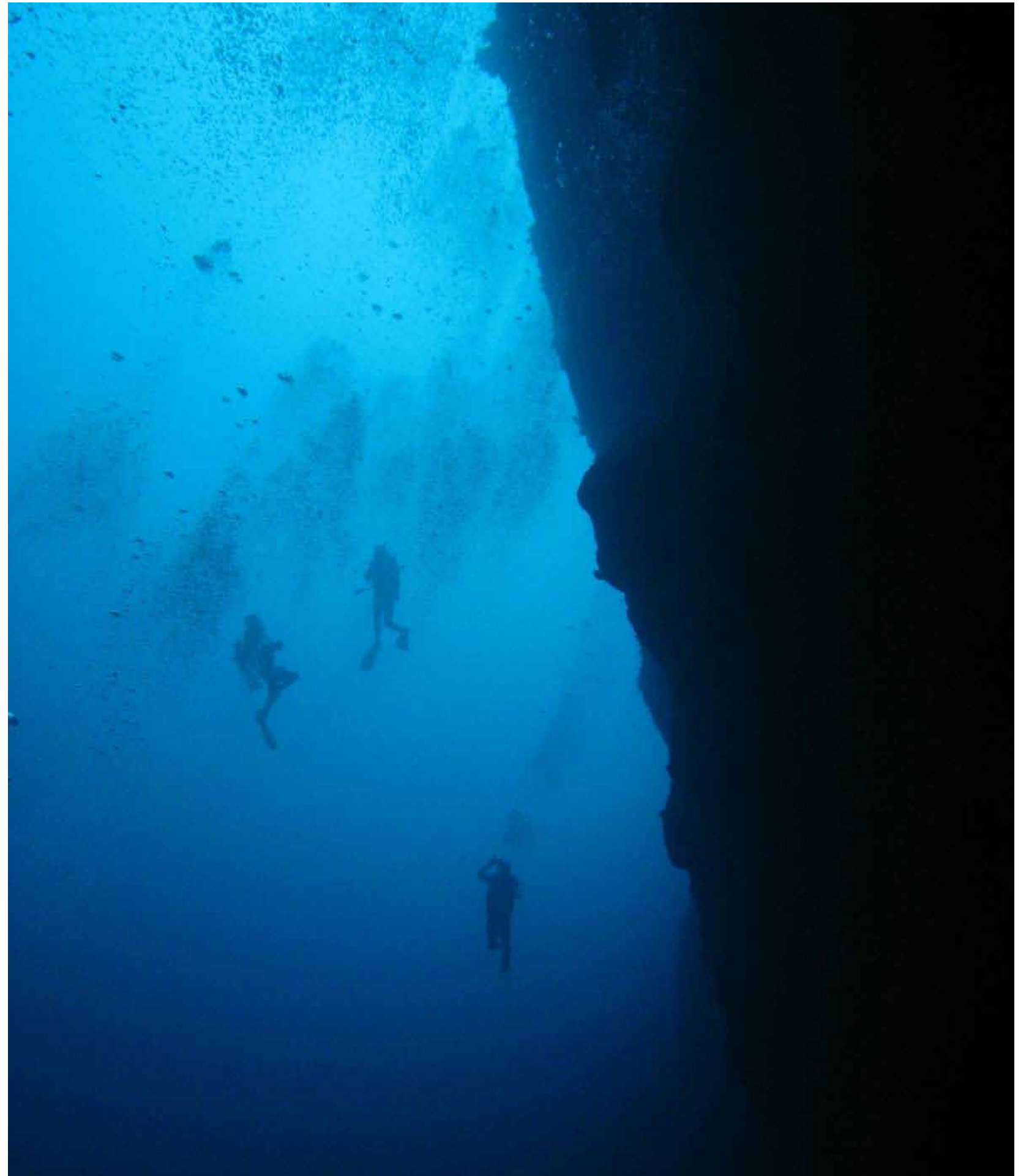
SCOTT FEREBEE

Scott Ferebee is a candidate for the Master of Architecture (2011) degree. His background is in architectural design and fabrication. Recent and current research includes renewable building strategies for informal market vendors in developing nations. He has conducted prototype studies of market stalls that utilize the principle of flexure - the natural bending and elasticity of flat panel materials - to form roof and wall openings. This system of flexure was also deployed as a solar tracking device for the harvesting of solar energy with flexible photo voltaic panels for market vendors in Rio de Janeiro, Brazil. Scott is currently investigating the use of low-cost, environmentally responsive construction techniques in desert climate through his design thesis, a commercial spaceport for the city of Las Vegas.

EXTREME : BLUE HOLE

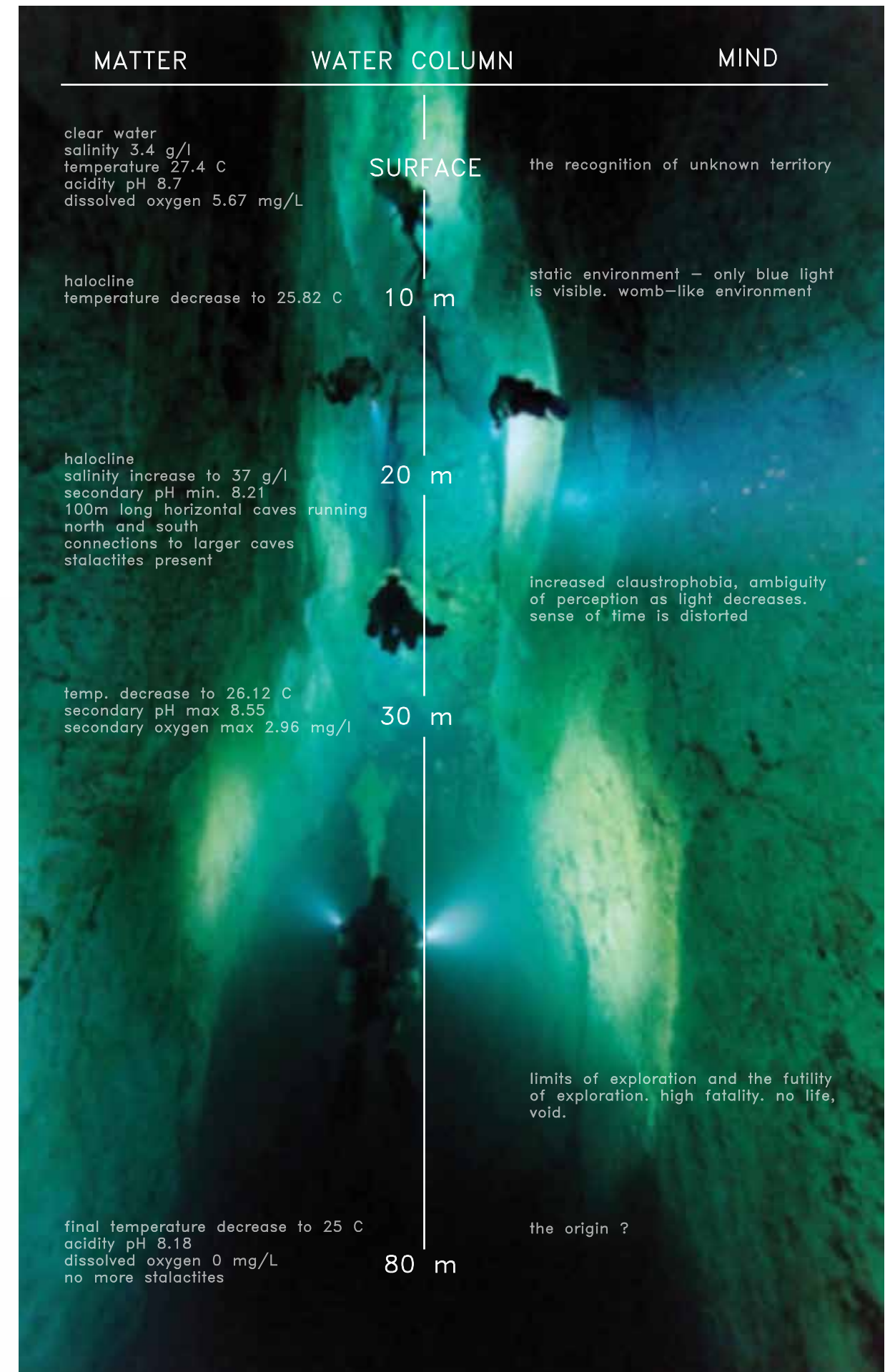
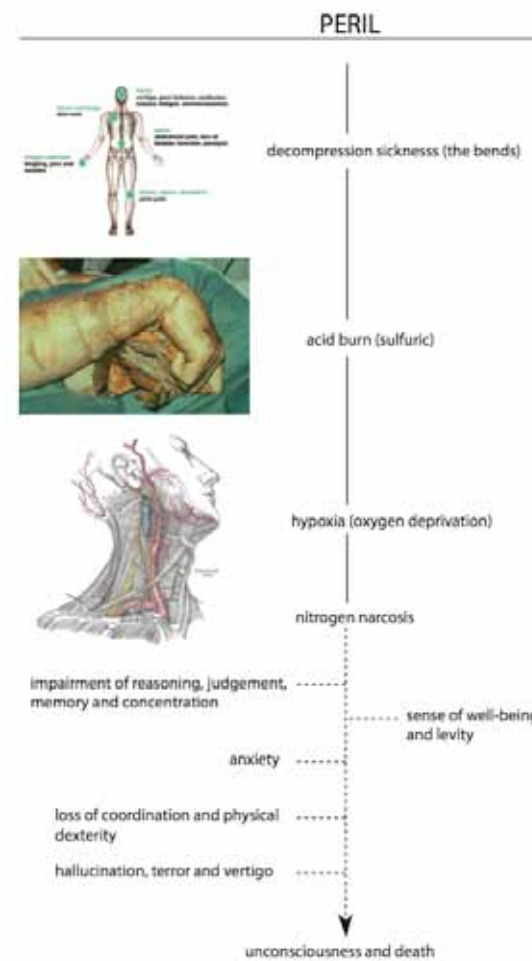
EXTREME ENVIRONMENT:
BLUE HOLES
UNKNOWN TERRITORY OF MIND AND
SPACE

THE JOURNEY DOWN THE BLUE HOLE IS BOTH A SCIENTIFIC PROGRESSION EXHIBITING CHANGES IN PRESSURE, TEMPERATURE, SALINITY, ETC., AS WELL AS AN EVOLUTION OF MENTAL PERCEPTION. SENSORY DEPRIVATION INCREASES AS ONE DELVES DEEPER INTO THE BLUE HOLE. THUS OUR OWN PROJECT IS A BI-FACETED EXPLORATION OF HOW ONE SURVIVES THE PHYSICAL ELEMENTS OF THE BLUE HOLE AND THE PSYCHOLOGICAL EXTREMITIES INHERENTLY TIED TO THIS ENVIRONMENT.

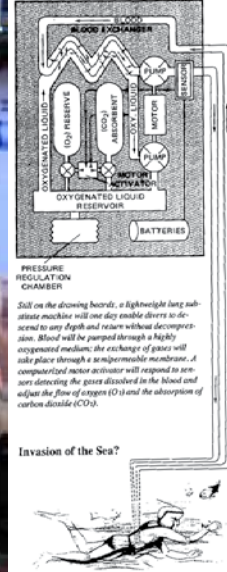


PERCEPTION OF MIND & MATTER

THERE IS A TEMPTATION TO EXPLORE SUCH UNKNOWN TERRITORY, WHICH PROMISES ARCHAEOLOGICAL CLUES WHICH CAN BRING US CLOSER TO OUR ORIGIN. THE SPACE IS ONE THAT IS NEITHER REGRESSING NOR PROGRESSING, EXISTING MUCH LIKE A TIME CAPSULE. UPON PENETRATION OF THIS FORBIDDEN SPACE, WE WILL BE PLAGUED WITH A NUMBER OF PHYSICAL AND PERCEPTUAL CHALLENGES AND LIMITATIONS.

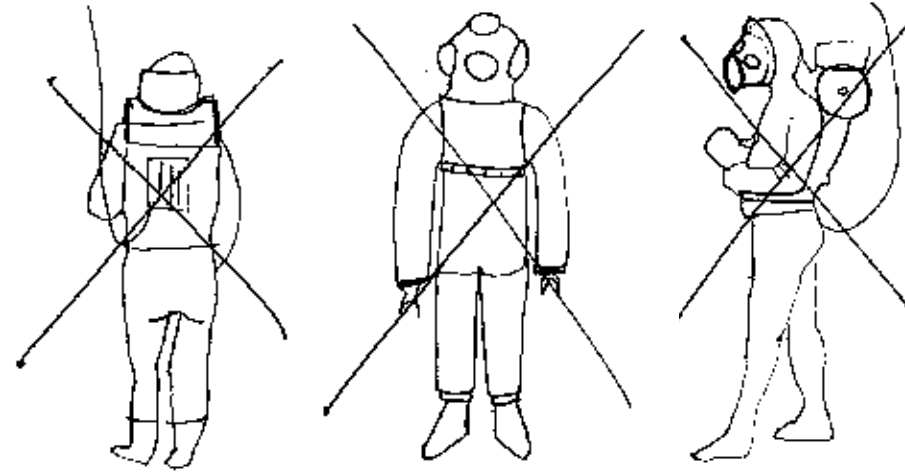


PROCESS & THOUGHTS



INSIGHT

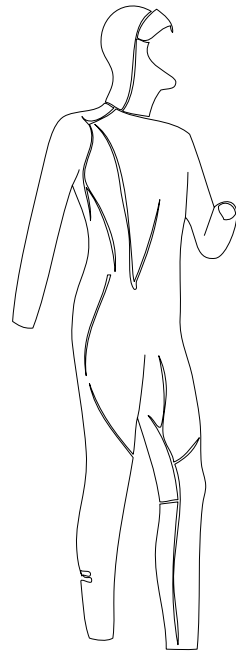
THE PRICE OF DISCOVERY - DOES IT PROTECT, SAVE US, AND IF SO, WHAT DOES IT DO
 A SECOND SKIN ALLOWING ONE TO DO FURTHER
 ENDURANCE FACTOR - THE VALUE TRADE OFF BETWEEN DISCOVERY AND BODY DAMAGE - HOW DO WE MINIMIZE THOSE.



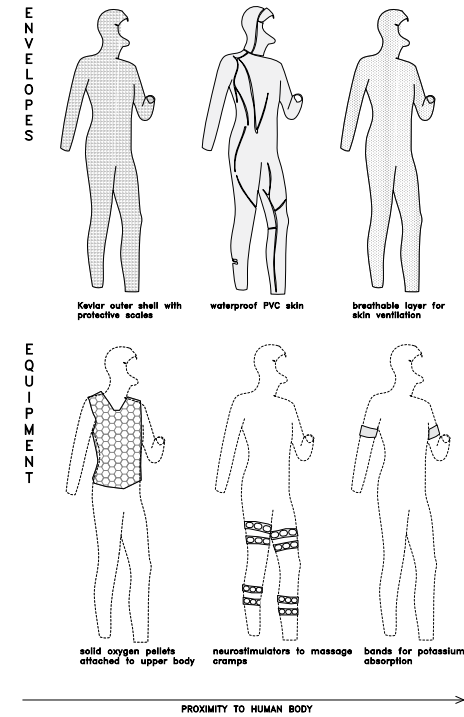
SURVIVAL

AN ALTERNATIVE TO THE TRADITIONAL OXYGEN TANK BODYSUIT THAT LENDS ITSELF TO CUMBERSOME ACCIDENTS (OFTEN FATAL), WE PROPOSE A SOLUTION THROUGH SOLID OXYGEN TABLETS. ITS CONTAINER OF INSULATION RESPONDS TO THE ELEMENTAL PROPERTIES (BOILING POINT, VAPORIZATION) SUCH THAT VAPOR IS RELEASED AT A RATE FOR ONE TO BREATHE. CAPSULES OF OXYGEN CAN BE INCORPORATED INTO THE SUIT ITSELF. RESEARCH STEMMED OFF NASA - WHERE THEY SEEK TO MINE OXYGEN/NITROGEN SOLIDS IN CELESTIAL BODIES AND SEND MICROWAVE PULSES SO AS TO RELEASE THE GAS.

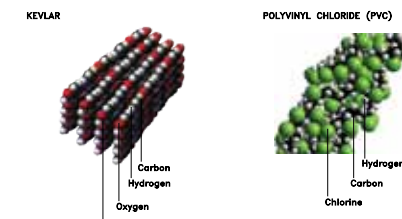
purSUIT of EXPLORATION



A SYSTEM OF COMPONENTS TO ENABLE SURVIVAL

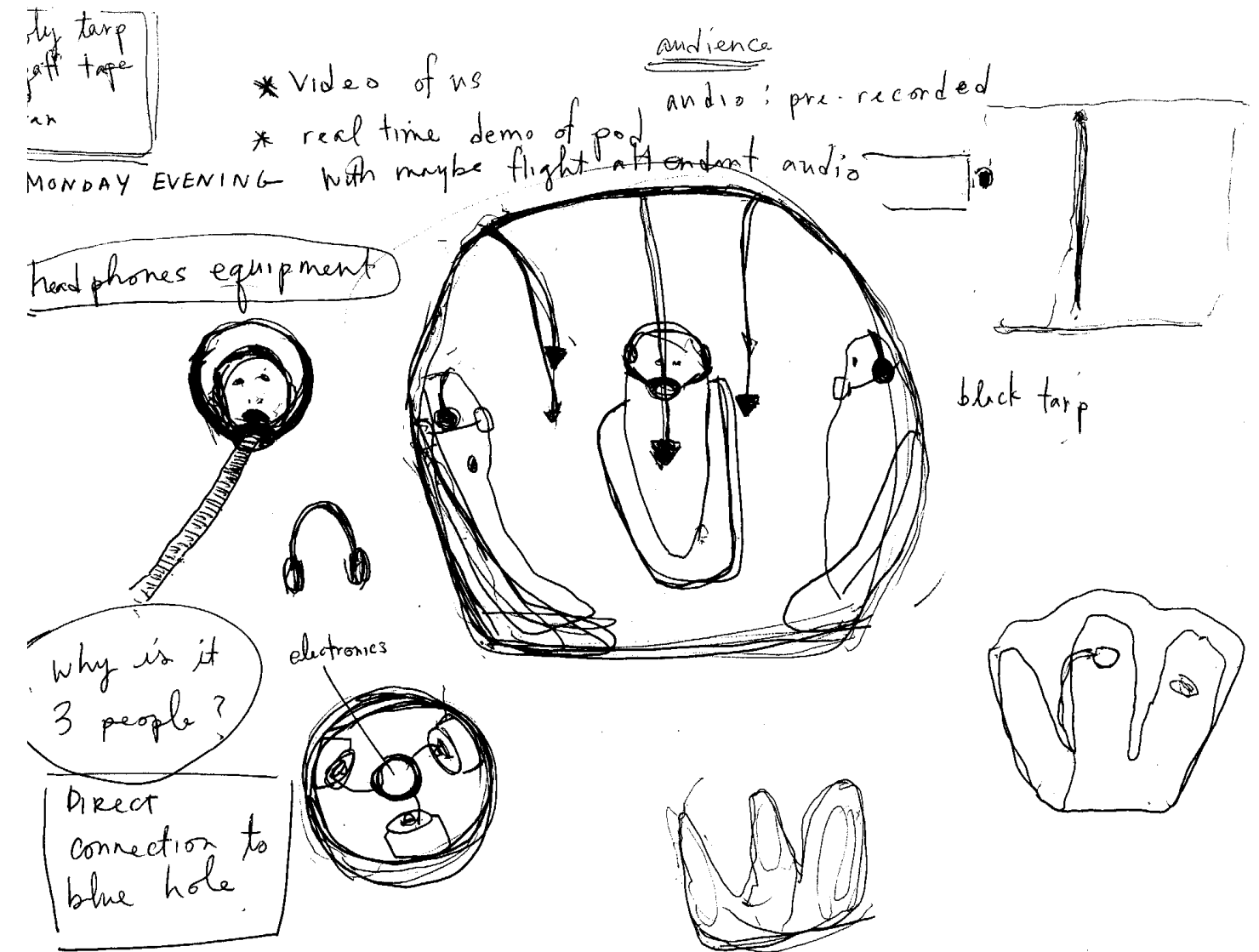


VITAL MATERIALS



SECOND SKIN

INITIALLY, WE HAD HOPED TO DEVELOP A SECOND SKIN THAT WOULD ALLOW A PERSON TO SURVIVE IN AND EXPLORE OUR BLUE HOLE ENVIRONMENT. HOWEVER, WE CAME TO REALIZE THAT SUCH A SKIN WAS NOT REALLY WITHIN THE SCOPE OF THE CLASS. WE DECIDED TO CHANGE OUR APPROACH. INSTEAD OF DEVELOPING A SECOND SKIN THAT WOULD PUT THE BODY IN THE ENVIRONMENT, WE CHOSE TO DEVELOP A SECOND SKIN THAT WOULD BRING THE ENVIRONMENT TO THE BODY. OUR SECOND SKIN WOULD ENVELOP THE BODY AND IMMERSE IT IN AN ENVIRONMENT THAT WOULD SIMULATE THE PSYCHOLOGICAL EFFECTS OF BLUE HOLE EXPLORATION. INSPIRED BY THE EFFECTS OF NITROGEN NARCOSIS AND BY OUR OWN PERSONAL MUSINGS ON THE ISOLATIONISM AND TIME-TRANSCENDENT NATURES OF THE BLUE HOLE, WE DECIDED TO EXPERIMENT WITH CONTROLLING VARIOUS ASPECTS OF THE ENVIRONMENT--SHAPE, PRESSURE, LIGHT, COLOR, AIR SUPPLY, SOUND.



ENVIRONMENT



MANYAN LAM

MANYAN LAM IS A SENIOR IN THE ARCHITECTURE PROGRAM AT MIT. ALTHOUGH SHE CAME FROM AN ENGINEERING BACKGROUND, SHE HAS A STRONG INTEREST IN THE ARTS AND HAS EXPERIENCE IN CLOTHING DESIGN AND FABRICATION, KNITTING, AND CLASSICAL ARTS TRAINING. HER ARCHITECTURAL INTERESTS INCLUDE FOLDING AND AGGREGATION, CHAIR DESIGN, AND PATTERN FINDING. SHE IS CURRENTLY WORKING ON TWO PROJECTS - ONE IS A PUBLIC ART INSTALLATION WITH PROFESSOR MEEJIN YOON ENTITLED "LIGHT DRIFT" AND THE OTHER IS A STUDY OF COMPUTATIONAL FLUID DYNAMICS AS A MEANS OF FORMAL DESIGN. SHE HAS A STRONG INTEREST IN CLOTHING AND STYLE ALTHOUGH NOT NECESSARILY FASHION.



EVERETT LAWSON

EVERETT LAWSON WAS RAISED AS ONE OF SIX CHILDREN IN THE MOUNTAINS OF COLORADO. HE WAS EDUCATED IN A REMOTE MOUNTAIN SCHOOL, AND SPENT HIS CHILDHOOD LEARNING TO USE TOOLS THROUGH WATCHING HIS FATHER BUILD THEIR HOME FROM MATERIALS OFF THE LAND. HAVING LITTLE CONTACT WITH THE OUTSIDE WORLD UNTIL THE AGE OF 16, HE WENT ON TO STUDY VIOLIN PERFORMANCE, PEDAGOGY, AND MEDICAL SCIENCE AT COLORADO STATE UNIVERSITY. AFTER COMPLETING HIS STUDIES AT CSU HE MOVED TO CENTRAL EUROPE TO FOCUS ON HIS MUSIC, AND RECEIVE HIS CERTIFICATE OF MASTERY FROM THE SOLOIST PROGRAM AT THE NATIONAL CONSERVATORY OF MUSIC IN THE CZECH REPUBLIC. THROUGHOUT HIS FIVE YEARS ABROAD HE MADE CAMERAS, GROUND LENSES FROM FOUND MATERIAL, AND EXHIBITED HIS WORK INTERNATIONALLY. HE RETURNED TO THE STATES TO STUDY AT THE SCHOOL OF THE ART INSTITUTE OF CHICAGO WHERE HE RECEIVED A BFA AND CONTINUED TO PURSUE HIS INTEREST IN VISUAL PERCEPTION. EVERETT CURRENTLY RESIDES IN BOSTON WHERE HE IS A MASTERS OF SCIENCE IN VISUAL STUDIES (SMViss) CANDIDATE AT MIT, AND A MEMBER OF THE CAMERA CULTURE GROUP IN THE MEDIA LAB.



AMANDA MOORE

AMANDA MOORE IS CURRENTLY A MASTER OF SCIENCE IN VISUAL STUDIES CANDIDATE IN THE MIT PROGRAM IN ART, CULTURE & TECHNOLOGY. MOORE IS A NATIVE AMERICAN ARTIST PRESENTLY LIVING AND WORKING IN BOSTON. AS A VISUAL ARTIST, MOORE APPLIES PERFORMANCE, PERCEPTION, AND PARASOCIAL INTERACTION TO CHALLENGE AND AMBIGUATE REALITY. SINCE GRADUATING FROM SMFA WITH A BFA IN 2007, MOORE HAS WORKED INDEPENDENTLY AND COLLABORATIVELY ON SEVERAL PROJECTS INCLUDING LOCATING FEMINISM WITHIN THE ART SCHOOL, PUBLIC WORKS OUT, PRODUCTS, SWEAT LODGE, AND THE NO NO NOTHING.



MARIE MCGRAW

MARIE C. MCGRAW IS CURRENTLY A JUNIOR IN MECHANICAL AND OCEAN ENGINEERING AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY. HER PAST RESEARCH EXPERIENCE INCLUDES TURBULENT FLUIDS RESEARCH AT THE NAVAL SURFACE WARFARE CENTER IN CARDEROCK, MD. PRESENTLY, SHE IS RESEARCHING OCEAN WAVE ENERGY GENERATORS AT THE VORTICAL FLOW RESEARCH LAB AT MIT. HER INTERESTS IN BODYWEAR INCLUDE FLUID FLOW AND RESPONSE, AND HEAT TRANSFER.



EXTREME : AIR

the endless search for a breath of clean air...

On a fate of bad luck these anti-heroes are now on a mission to find remedies to the current ecological disaster. But how are they going to solve this conundrum? The utopian vision of the current social order has failed them. Everyone wants the machines, the materials, the jobs, the fashion, the filth, the exploitation, the wars, the power, the fantasy, and the spectacle ...

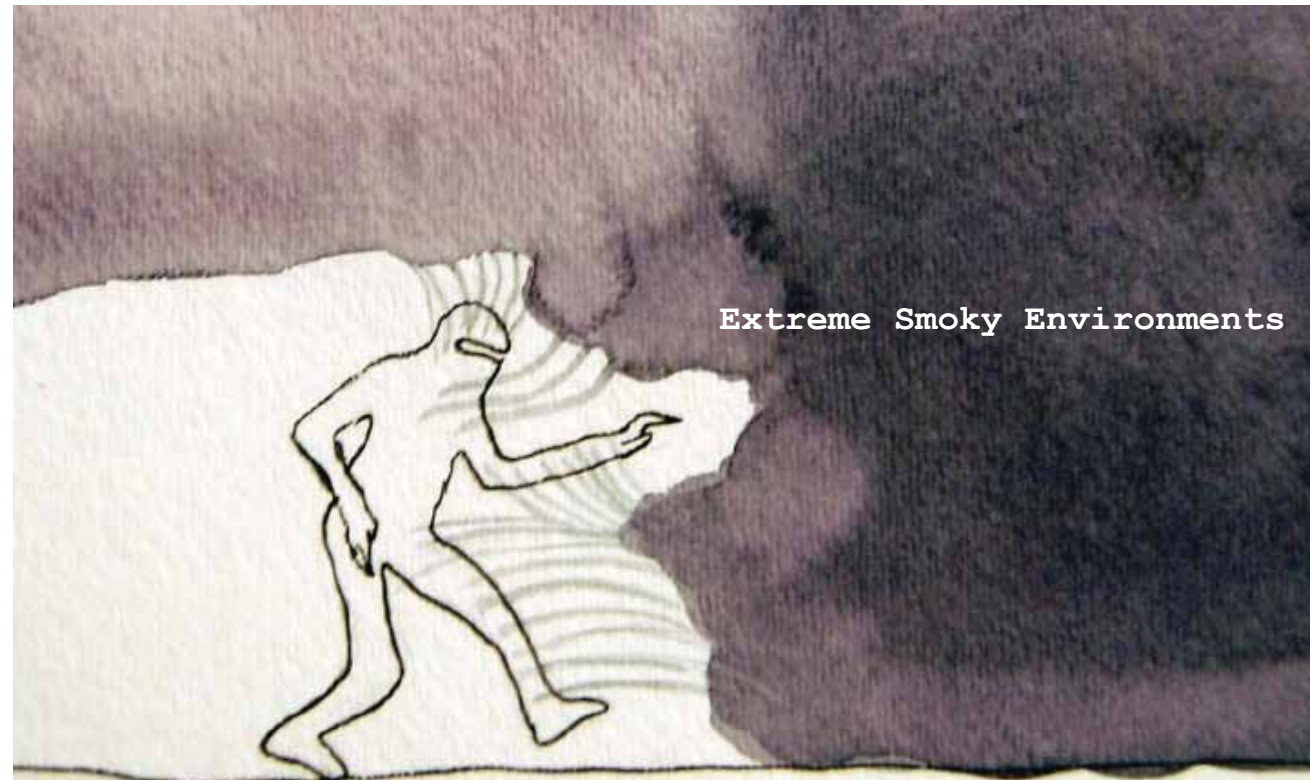
So it is mayhem, yet in their desire to stay alive, these tenacious creatures are propelled to transform their bodies in the most absurd ways ... Viscous catchers modify their hands into air purifying bellows and use excessive amounts of human mucous as their defensive mechanism against micro-pollutants ... The mega-infiltrator has a more modest goal: to protect and nourish his beloved cherry tree, with which he trades carbon dioxide for oxygen ... As their final, desperate effort to communicate, they dispatch lavender paper planes throughout the city ...



a fable for extreme smoky environments



Initial Research



Problem:

The body wear we have developed responds to conditions of extreme smoky and polluted air (particle emissions floating in the atmosphere) found in the cityscape.

Goals:

These devices operate on a utilitarian level, by absorbing, filtering and purifying contaminated air, and on a symbolic level, as tools for performative interventions in public space.

Our interventions use parody, playfulness and poetics to creatively disrupt everyday life and communicate a critical perspective of the urban environment. We have utilized low-cost, recycled materials and DIY design techniques so that these devices can be easily produced and distributed.

The body with these wears will have an active role in navigating and neutralizing this extreme environment. It may, for instance, work to clear a visible and safe path in a heavy cloud of smoke, or collect particulate matter as the wearer moves through.

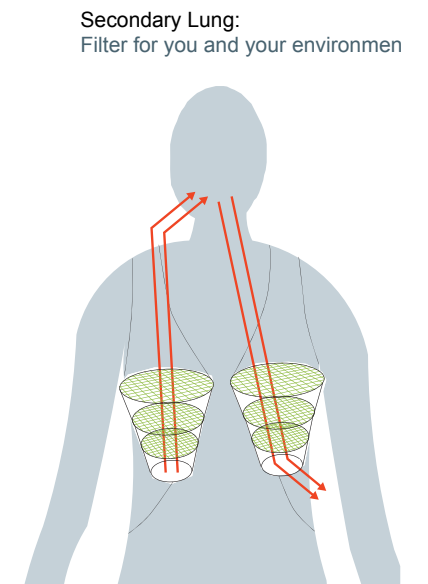
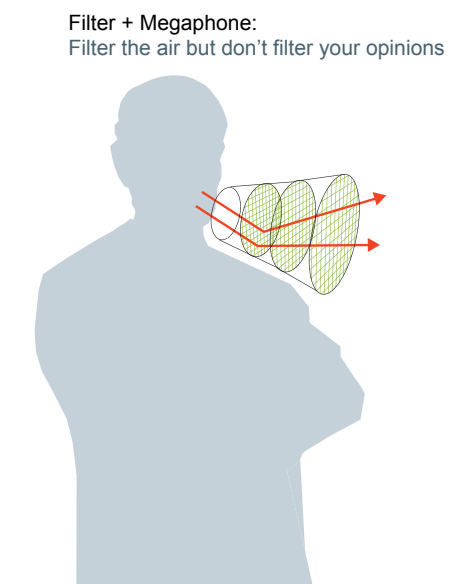
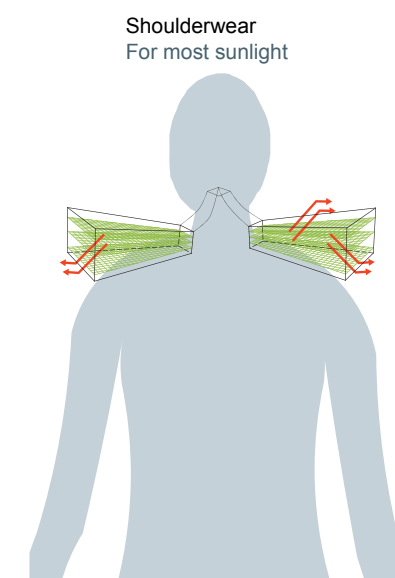
The bodywear could function as:

- 1) A filter for the environment
- 2) A trigger for contaminated air
- 3) A substrate for a chemical reaction/regenerative process (e.g. aerogels)

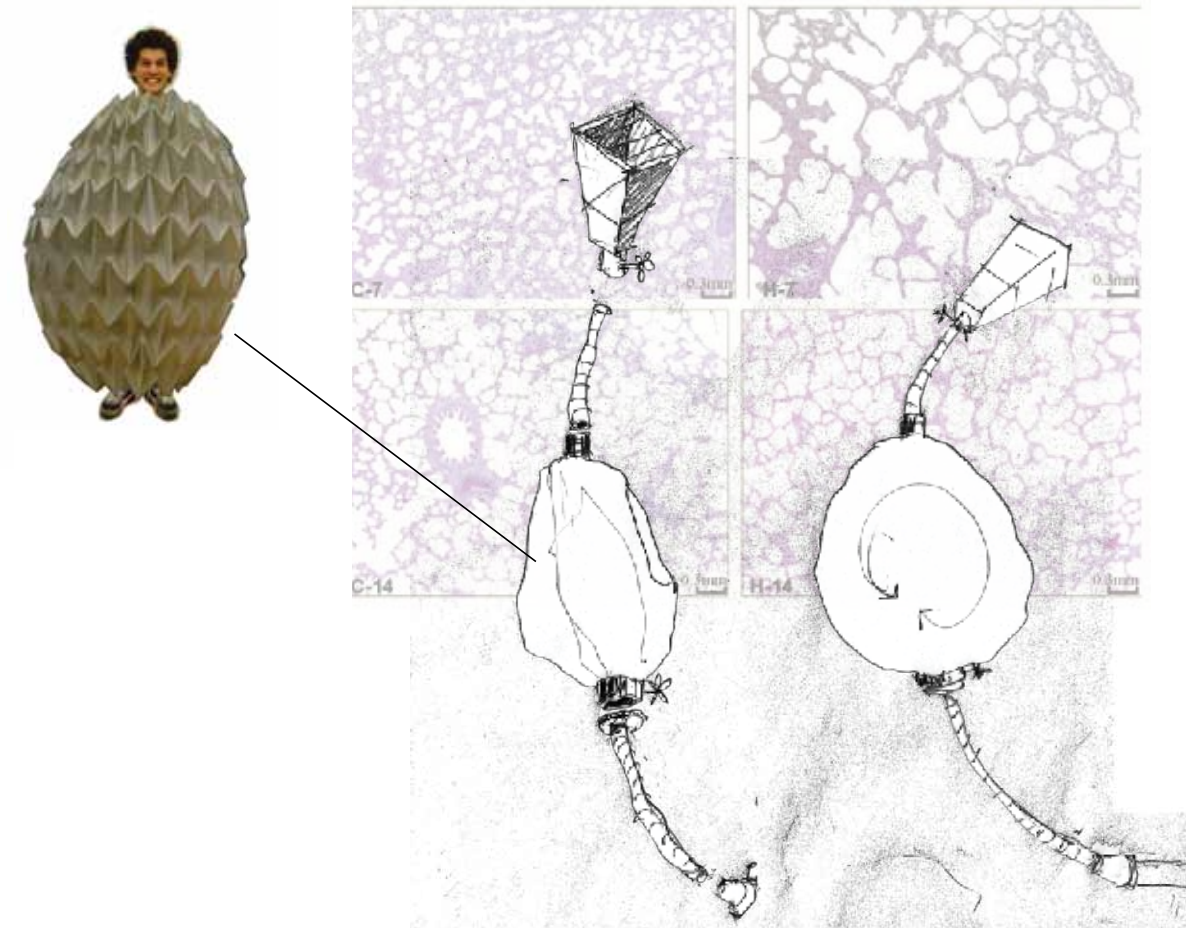
1st Generation of Ideas:



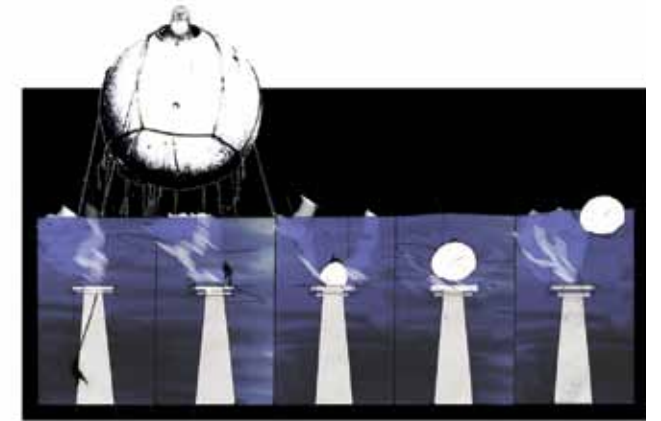
de_generators



Inflatable structure to store air



mega_infiltrators



Blowfish: When you feel danger,



Jump!

1 + 1 = 3

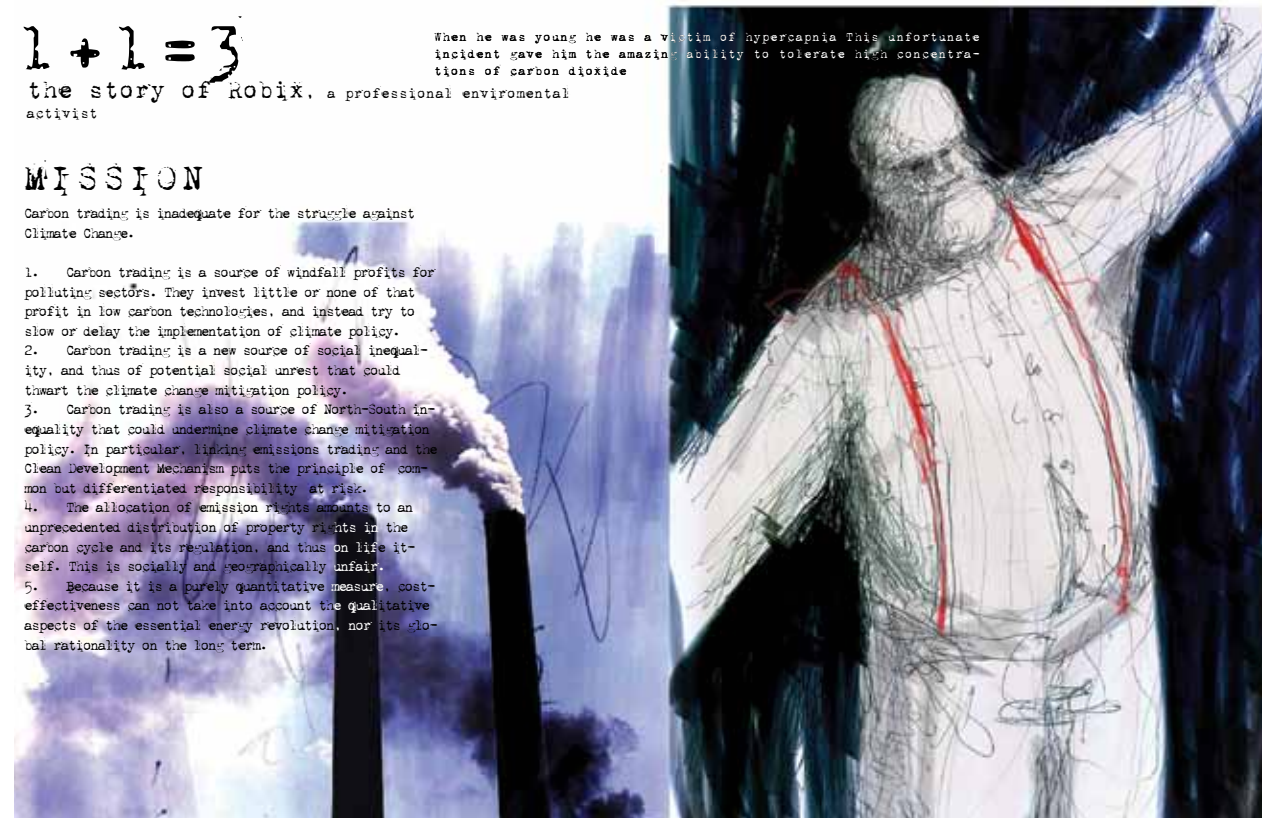
the story of ROBIX, a professional environmental activist

When he was young he was a victim of hypercapnia. This unfortunate incident gave him the amazing ability to tolerate high concentrations of carbon dioxide.

MISSION

Carbon trading is inadequate for the struggle against Climate Change.

1. Carbon trading is a source of windfall profits for polluting sectors. They invest little or none of that profit in low carbon technologies, and instead try to slow or delay the implementation of climate policy.
2. Carbon trading is a new source of social inequality, and thus of potential social unrest that could thwart the climate change mitigation policy.
3. Carbon trading is also a source of North-South inequality that could undermine climate change mitigation policy. In particular, linking emissions trading and the Clean Development Mechanism puts the principle of common but differentiated responsibility at risk.
4. The allocation of emission rights amounts to an unprecedented distribution of property rights in the carbon cycle and its regulation, and thus on life itself. This is socially and geographically unfair.
5. Because it is a purely quantitative measure, cost-effectiveness can not take into account the qualitative aspects of the essential energy revolution, nor its global rationality on the long term.



viscous catchers



Experiment 1.1

Can my mucus and saliva with a filter temporarily prevent particle emissions from scaping the box?



Removable
Aroma
Tranquilizers



*Therapeutic
properties
of lavender:
Antiseptic,
circulatory
stimulant;
relieves muscle
spasms and
cramping



Emission
Catcher

Filters w/
Human Mucus
to catch and
prevent particle
emissions
from entering
temporarily the
protective mask.

< For Everyday Use >



2nd Generation of Ideas:



Lavender comes from the Latin "to clean", and is a therapeutic herb that calms and helps to clear the sinuses. In this performance, Lady Lavender is a mythic character who grows lavender and flies it across the polluted cityscape using folded paper as a substrate. Paper airplanes filled with lavender are thrown out of windows and across spaces as an act symbolic of cleaning air. The airplanes can be caught by humans and then inverted and fitted over the face, or might instead engage the environment itself. As an airplane hits the ground, it can be imagined to sink through the Earth over time, planting seeds into the ground to grow new lavender plants (propagating a cycle). The rice paper each plane is made of, as well as the honey that adheres lavender to it, is completely biodegradable. This movement of this body wear through extreme polluted air and the Earth complements the other prototypes in which air travels within the body wear expressively.

The masks can be folded flat and then opened - opening them reveals the lavender inside. The lavender-concentrated spots should line up with the bottom of the nose and their placement on the fold's "valley" informs which side of the mask goes over the nose and which is on the exterior. The bottom of the mask can be closed by pinching it, imitating the comical gesture of pinching one's nose in a smelly environment.



Viscous Catchers
with Air purifying Bellows



Mega Infiltrator
with his beloved Cherry Tree

BIOGRAPHIES:

Scott Berzofsky is an SMVisS candidate in the MIT Program in Art, Culture and Technology. His current research examines the politics of sustainability in art and design since the 1970s, focusing specifically on the legacy of Gyorgy Kepes and the Center for Advanced Visual Studies at MIT. From 2005-10, Scott lived and worked in Baltimore, where he co-organized several artistic and activist initiatives including campbaltimore, Participation Park, The City from Below and STEW. His writing has appeared in Third Text, Critical Planning and The Journal of Aesthetics and Protest.

Leah Brunetto is a third year undergraduate in the Department of Architecture, completing her degree through the ACT program. In conjunction to her coursework at MIT, she maintains an independent portfolio, working in 2-, 3-, and 4-dimensional media with an emphasis on personal narrative, dreams and emotions, the observed and imagined universe, and interdisciplinary studies. She has participated in solo and group exhibitions, and curates the MIT Wiesner Student Art Gallery. Leah has had the opportunity to participate in several design projects through MIT's UROP program, including a landscape installation at MassMoCA due for next fall.

Miho Chu received her BFA in environmental design in Korea, and currently she is a graduate student in the department of architecture at MIT. With her previous experiences in landscape, interior and architectural design, she is pursuing to study design possibilities that technology and interactive media can bring in to the field. She took scripting and computational design classes at MIT and assisted Professor Beth Coleman on geo-locative art proposal during the summer in 2009. This semester, Miho's studio explores the new type of architecture projecting for the sea level rise on 2030. Global warming and climate change in the near future will bring a shift to the lifestyle which will be proposed by designers and architects. During the "second skin/body wear" workshop, with a group of collaborators, she will research social and environmental extreme conditions and propose a body wear, in an architects' view for protection.

Theodossis Issaias is a Graduate student at MIT in SMarchS program- architecture and urbanism. He received his diploma in architecture from the National Technical University of Athens. He collaborated with interdisciplinary art collectives (Matter-of-act, Exis) primarily focused in performance and contemporary dance and he was the co-founder member of the Athens based intermediate performance group "Flight of the Balloon". At MIT he was part of the Autism Studio founded by artist Wendy Jacob, an experimental research Laboratory at the Center of Advanced Visual Studies, where he collaborated with autistic youth and their families to create art works designed to challenge dominant neurotypical conventions of how spaces, objects and situations are ordered. His project included clothing that increase body awareness and question the idea of normalcy and a set of games based in the autistic experience. As a continuation to his previous research and practice he is willing to explore through the Second Skin Workshop the possibilities of body wear as the body extension and medium of communication and adaptation with the surrounding environment physical and social.

Mabel Negrete is a resident of the USA since 1988, where she earned an Interdisciplinary Art degree with a concentration in Public Art, Multimedia and Education from the San Francisco Art Institute (2006). This will be her second year of graduate work at MIT Program of Art, Culture and Technology (former Visual Art Program), School of Architecture and Planning. Working from her studio and participatory process The Counter Narrative Society, she is researching creative counter narratives as systems for critical social engagement to address disparate ideas about mass punishment and inequality in the USA. Before coming to MIT, she had been working in the development of the Sensible Housing Unit (SHU) project, which is a tactical object that engages audiences in critical dialogue about the human rights issues of prison control units. She has presented this project at the University of San Francisco (2009), Mission Cultural Center for the Latino Art (2009) and the Mission Arts Performance Project (2008). She is currently a nominee for the Bridge Residence 2010-11 (Headlands Center for the Arts) and a recipient of the MIT Presidential Award 2009-10 and MIT Department of Architecture Fellowship 2010-11. Upon graduation she expects to return to San Francisco, where she would like to pursue a career in Academia and Critical Arts.

EXTREME : CROWD

INTRODUCTION

DEFINITION

A crowd is a large and definable group of people, while "the crowd" is referred to as the so-called lower orders of people in general (the mob). A crowd may be definable through a common purpose or set of emotions, such as at a political rally, at a sports event, or during looting, or simply be made up of many people going about their business in a busy area (eg shopping). Everybody in the context of general public or the common people is normally referred to as the masses.

In human sociology, the term "mobbed" simply means "extremely crowded", as in a busy mall or shop. In animal behaviour mobbing is a technique where many individuals of one species "gang up" on a larger individual of another species to drive them away. Mobbing behaviour is often seen in birds. (from wiki)

EXAMPLES



crowd formed by urban density - High density cities (eg HK)



crowd made up through a common purpose (eg sports event)



crowd made up through a common purpose (eg demonstration)



crowd made up a common purpose (eg flash mobs)
(a spontaneous gathering of individuals, usually organized in advance through electronic means, that performs a specific, usually peculiar action and then disperses.)

CHARACTERISTICS

HERD MENTALITY

Herd behavior describes how individuals in a group can act together without planned direction.

1. Symmetry breaking

Asymmetric aggregation of animals under panic conditions has been observed in many species, including humans, mice, and ants. Theoretical models have demonstrated symmetry breaking similar to observations in scientific studies. For example when panicked individuals are confined to a room with two equal and equidistant exits, a majority will favor one exit while the minority will favor the other.

2. Escape panic characteristics

- A/ Individuals attempt to move faster than normal.
- B/ Interactions between individuals become physical.
- C/ Exits become arched and clogged.
- D/ Escape is slowed by fallen individuals serving as obstacles.
- E/ Individuals display a tendency towards mass or copied behavior.
- F/ Alternative or less used exits are overlooked.

VIOLENCE EXAMPLES

- Los Angeles riots of 1992
- New York Draft Riots
- Tulsa Race Riot
- football hooliganism
- Germany's Love Parade stampede
- Cambodian Water Festival panic

CROWD EVACUATION SCENARIOS



SPACIOUS SCENARIO

The fleeing crowd has enough room to egress efficiently through the urban canyon formed by the interstitial space between buildings.



A SMALL EXIT SCENARIO

Wedge-like bottlenecks soon form at the mouth of the exit corridor and congestion begins to ripple back through the crowd, impeding further clearing. Similar dynamics are often observed during rush hour commutes on highways.

IN ANIMAL WORLD

FLOCKING

Flocking behavior is the behavior exhibited when a group of birds, called a flock, are foraging or in flight. There are parallels with the shoaling behavior of fish, the swarming behavior of insects, and herd behavior of land animals.

Basic models of flocking behavior are controlled by three simple rules:

1. Separation - avoid crowding neighbors (short range repulsion)
2. Alignment - steer towards average heading of neighbors
3. Cohesion - steer towards average position of neighbors (long range attraction)

APPLICATION

In Cologne, Germany, two biologists from the University of Leeds demonstrated a flock like behavior in humans. The group of people exhibited a very similar behavioral pattern to that of a flock, where if 5% of the flock would change direction the others would follow suit. When one person was designated as a predator and everyone else was to avoid him, the flock behaved very much like a school of fish



TWO FLOCK EXAMPLES



POTENTIAL DANGERS



BODY SIGNAL

-responding to threat, danger and stress

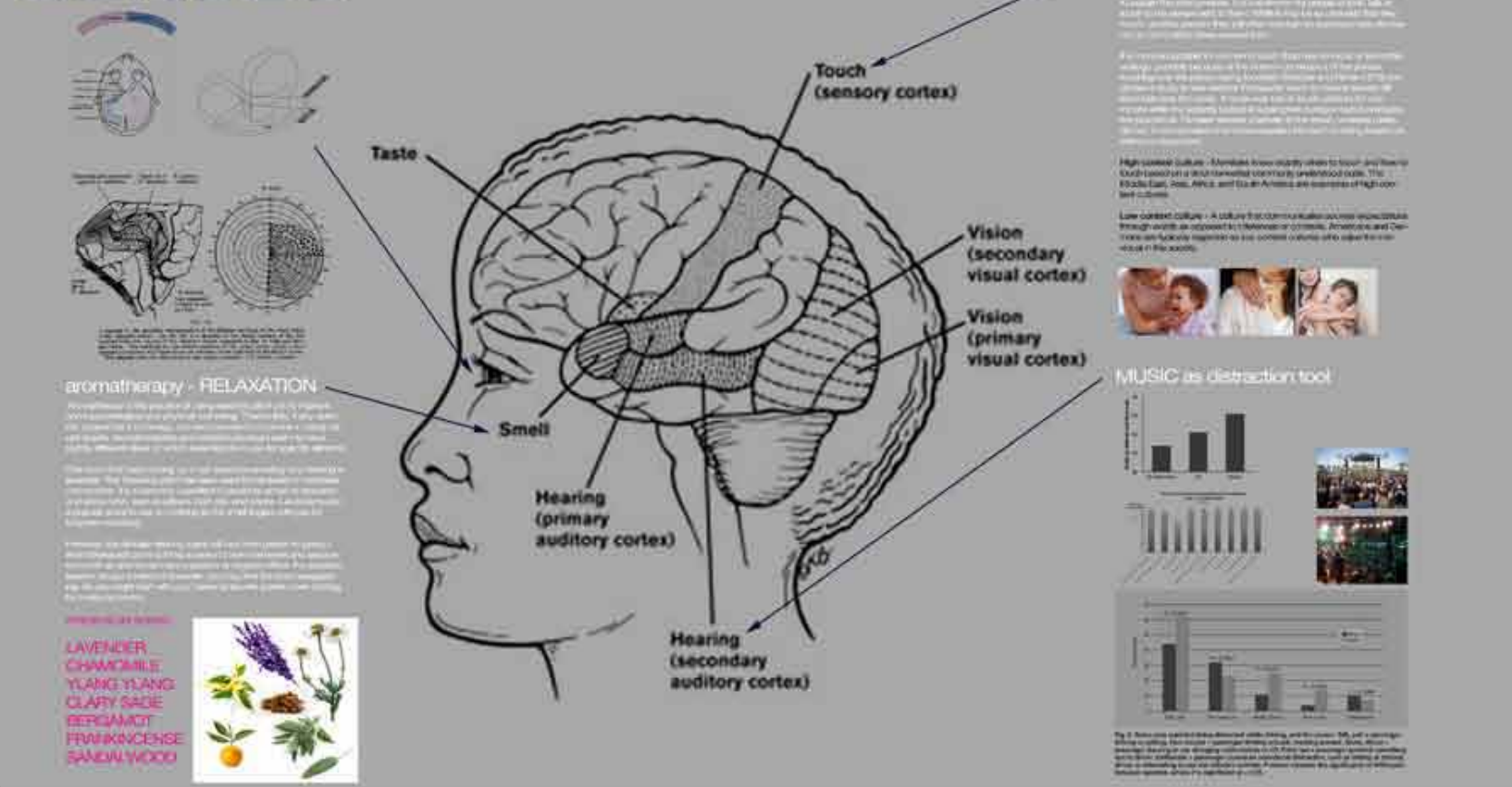
This is the body's response to perceived threat or danger. During this reaction, certain hormones like adrenalin and cortisol are released, speeding the heart rate, slowing digestion, shunting blood flow to major muscle groups, and changing various other autonomic nervous functions, giving the body a burst of energy and strength. Originally named for its ability to enable us to physically fight or run away when faced with danger, it's now activated in situations where neither response is appropriate, like in traffic or during a stressful day at work. When the perceived threat is gone, systems are designed to return to normal function via the relaxation response, but in our times of chronic stress, this often doesn't happen enough, causing damage to the body

When you are in a stressful or dangerous situation and experience fear and anxiety, your body goes through a number of changes:

All of these changes are part of the fight or flight syndrome. As the name implies, these changes are preparing you for immediate action. They are preparing you to flee, freeze (kind of like a kangaroo does when caught in someone's headlights), or to fight.

All of these are adaptive bodily responses essentially designed to keep us alive, and because these responses are important to our survival, they occur quickly and without thought. They are automatic.

SENSES



haptic communication:
Haptic communication is the use of touch to convey information. It is a form of non-verbal communication that can be used to convey a wide range of messages, from simple signals to complex emotions. Haptic communication is used in many different contexts, including education, healthcare, and entertainment.

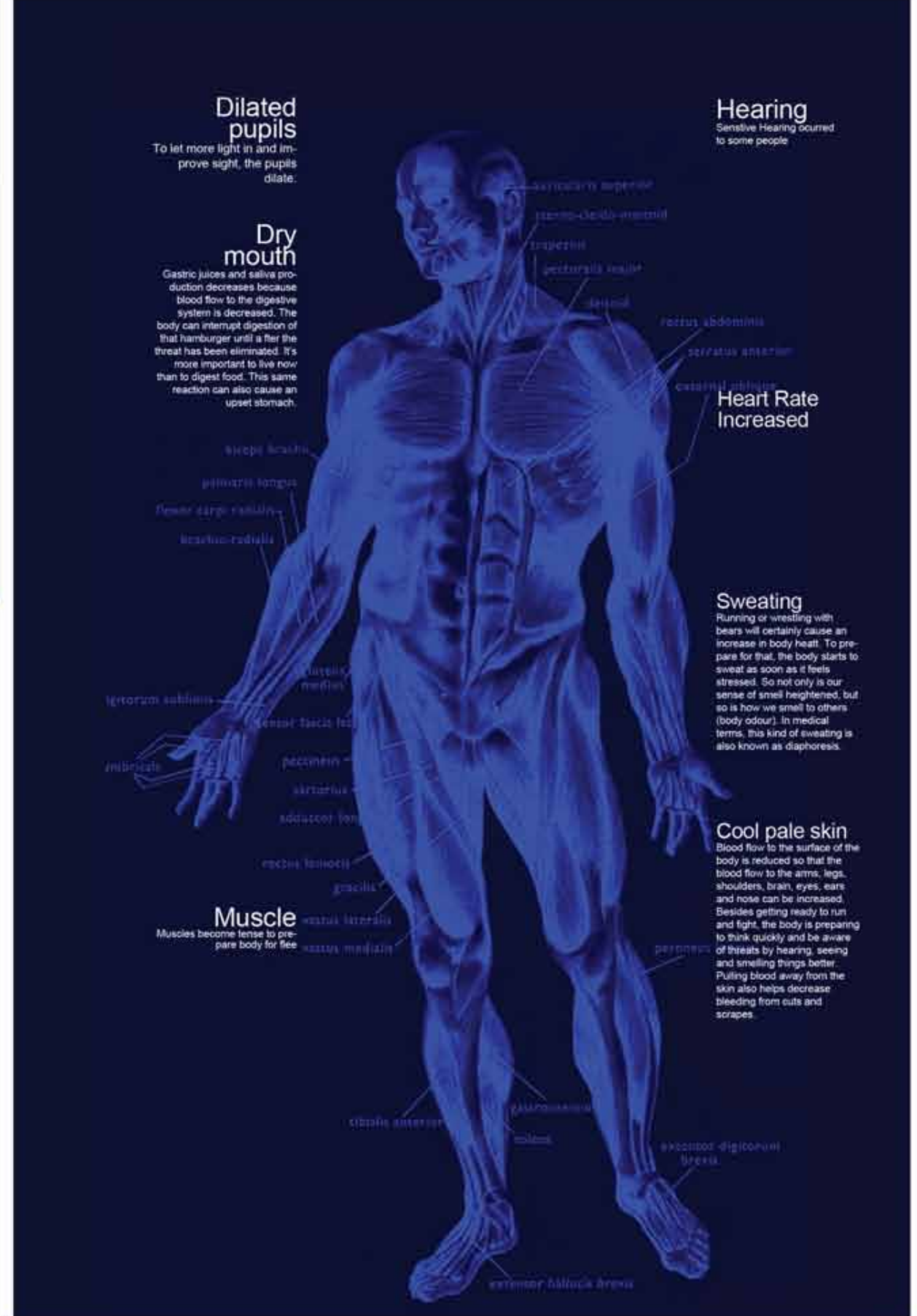
High context culture: Members know exactly when to touch and how to touch. In high context cultures, touch is used to convey a wide range of messages, from simple signals to complex emotions. The Middle East, Asia, and Latin America are examples of high context cultures.

Low context culture: A culture that communicates through words rather than touch. In low context cultures, touch is used to convey a wide range of messages, from simple signals to complex emotions. The United States, Canada, and Australia are examples of low context cultures.

MUSIC as distraction tool:
A bar chart showing the effectiveness of music as a distraction tool. The chart shows that music is most effective when used in a controlled environment, such as a hospital or a classroom. Music is also effective when used in a natural environment, such as a park or a beach.

aromatherapy - RELAXATION:
Aromatherapy is the use of essential oils to promote relaxation and reduce stress. Essential oils are extracted from plants and have a variety of therapeutic properties. Some of the most commonly used essential oils for relaxation include lavender, chamomile, and ylang-ylang.

HERBS:
LAVENDER
CHAMOMILE
YLANG-YLANG
CLARY SAGE
BERGAMOT
FRANKINCENSE
SANDALWOOD



Dilated pupils:
To let more light in and improve sight, the pupils dilate.

Dry mouth:
Gastric juices and saliva production decreases because blood flow to the digestive system is decreased. The body can interrupt digestion of that hamburger until a fier the threat has been eliminated. It's more important to live now than to digest food. This same reaction can also cause an upset stomach.

Hearing:
Sensitive Hearing coursed to some people

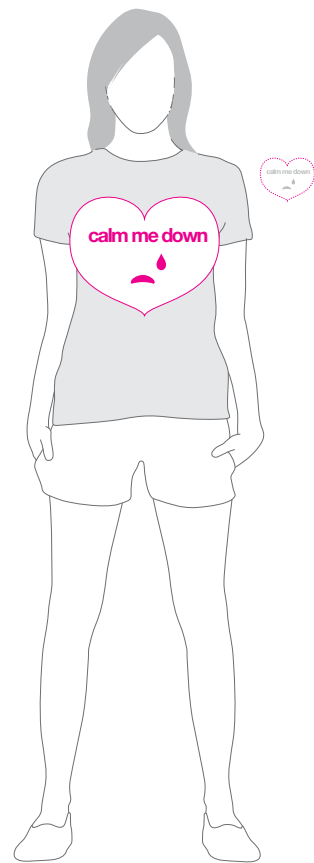
Heart Rate Increased:

Sweating:
Running or wrestling with bears will certainly cause an increase in body heat. To prepare for that, the body starts to sweat as soon as it feels stressed. So not only is our sense of smell heightened, but so is how we smell to others (body odour). In medical terms, this kind of sweating is also known as diaphoresis.

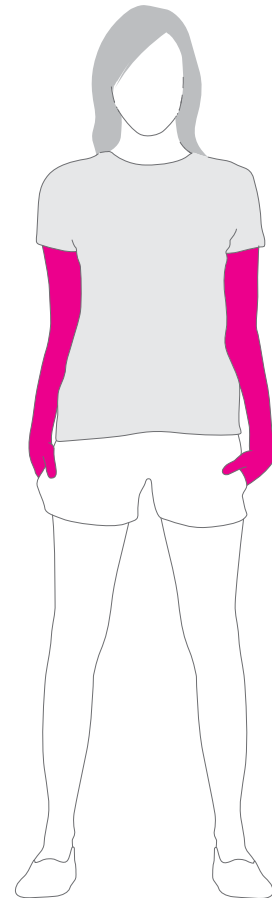
Cool pale skin:
Blood flow to the surface of the body is reduced so that the blood flow to the arms, legs, shoulders, brain, eyes, ears and nose can be increased. Besides getting ready to run and fight, the body is preparing to think quickly and be aware of threats by hearing, seeing and smelling things better. Pulling blood away from the skin also helps decrease bleeding from cuts and scrapes.

Muscle:
Muscles become tense to prepare body for flee

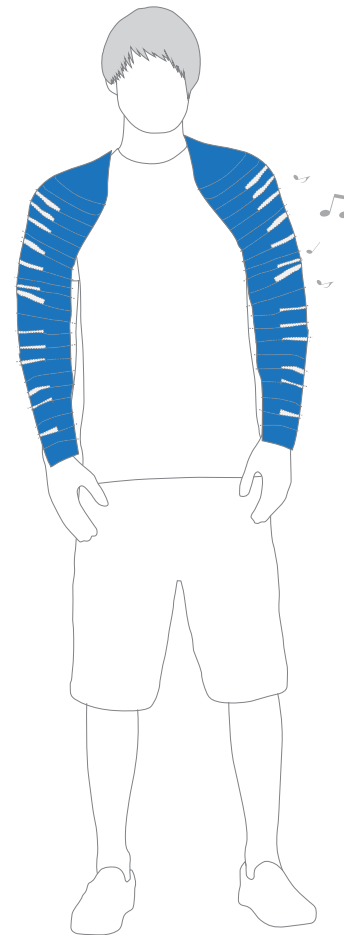
Pick Your Sense



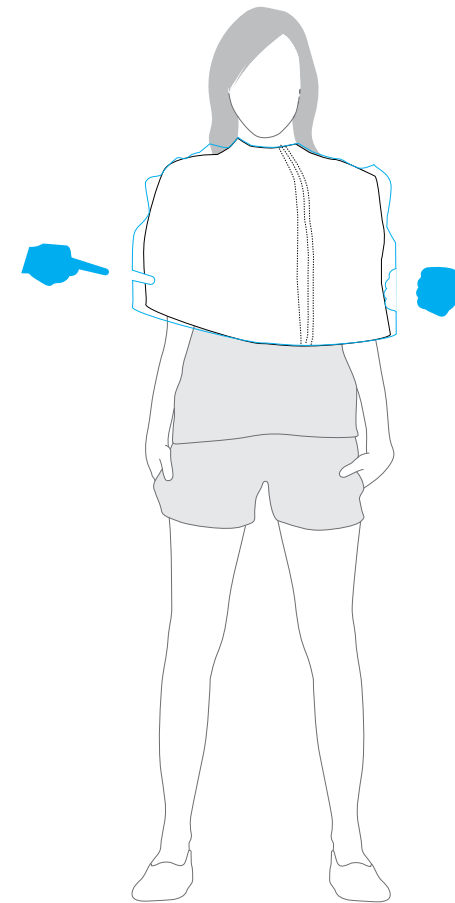
Sense 01
Sight



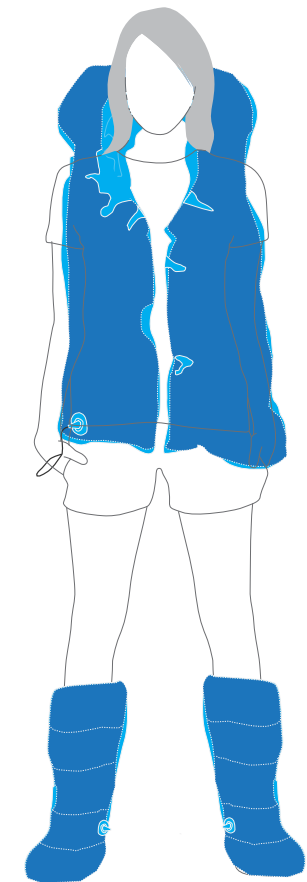
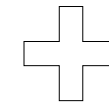
Sense 02
Touch/ Scent



Sense 03
Hearing



Sense 04
memory



Basic

Basic

inflatable vest + Hacking/Combinations

Specifications:

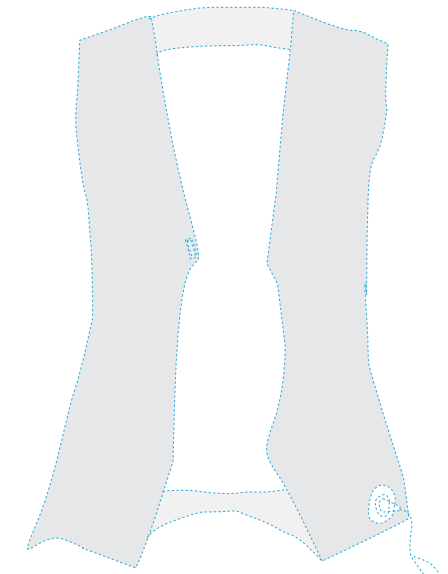
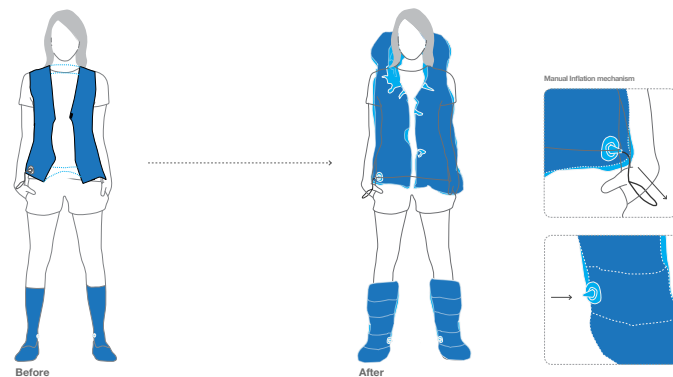
Function: Protection of Physiologically Sensitive Areas

Sense: Basic in all Packages

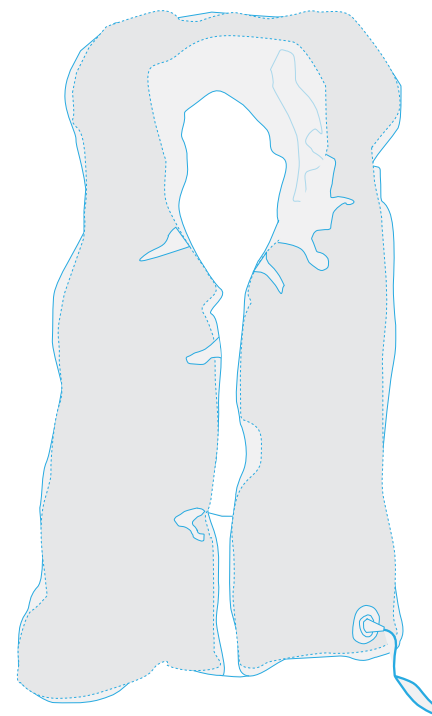
Material: Inflatable Plastics

Control: Manual and Automatic

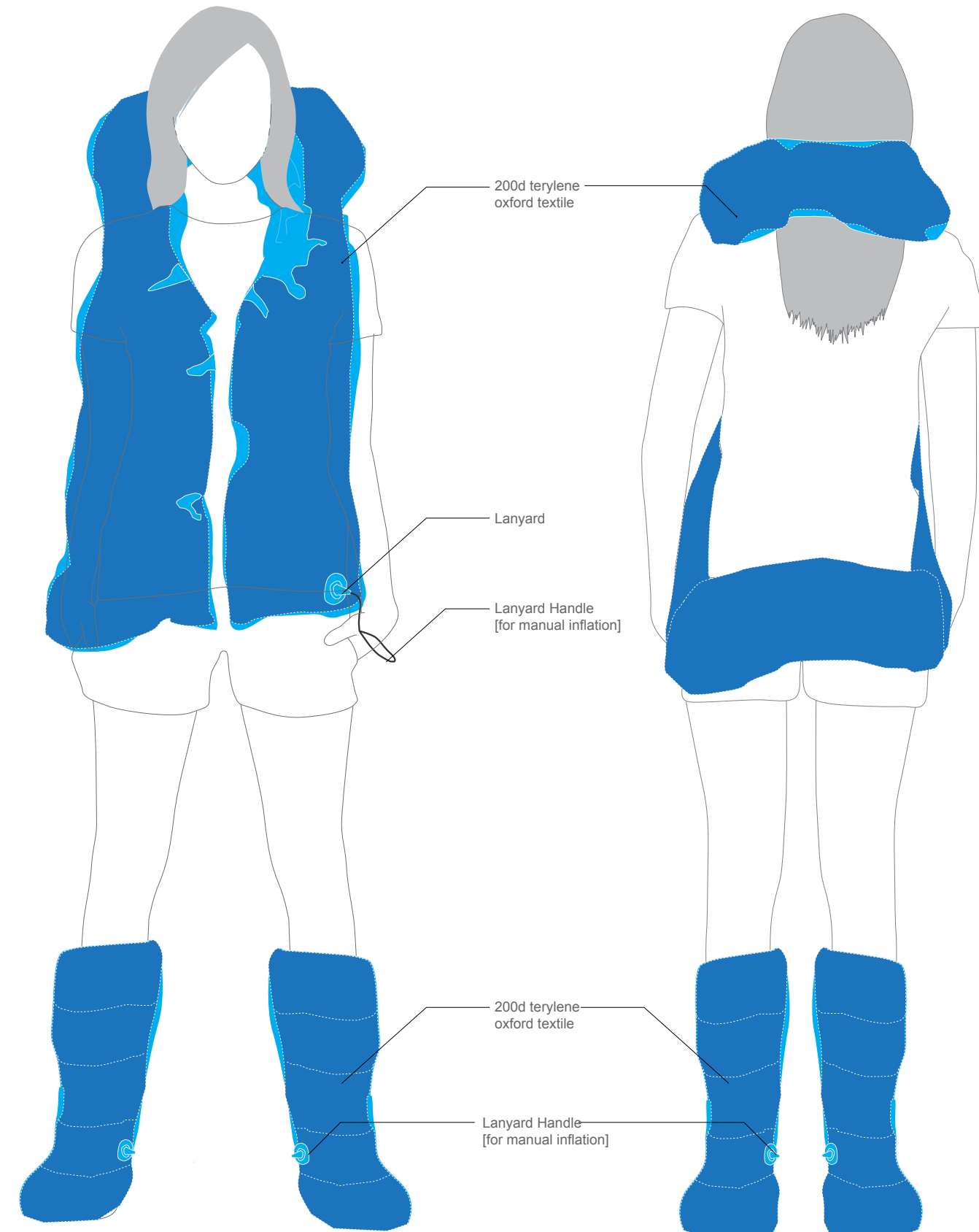
Principles: Some areas on the body are particularly subject to the pressure of a crowd, especially the neck and the base of the spine. This garment can be inflated into a life jacket with a small hand-pump, providing cushioning and protection. This basic unit is included with all of the other Sensory packages.



Before



After



Front

Back

Sense 02 Sight

Specifications:

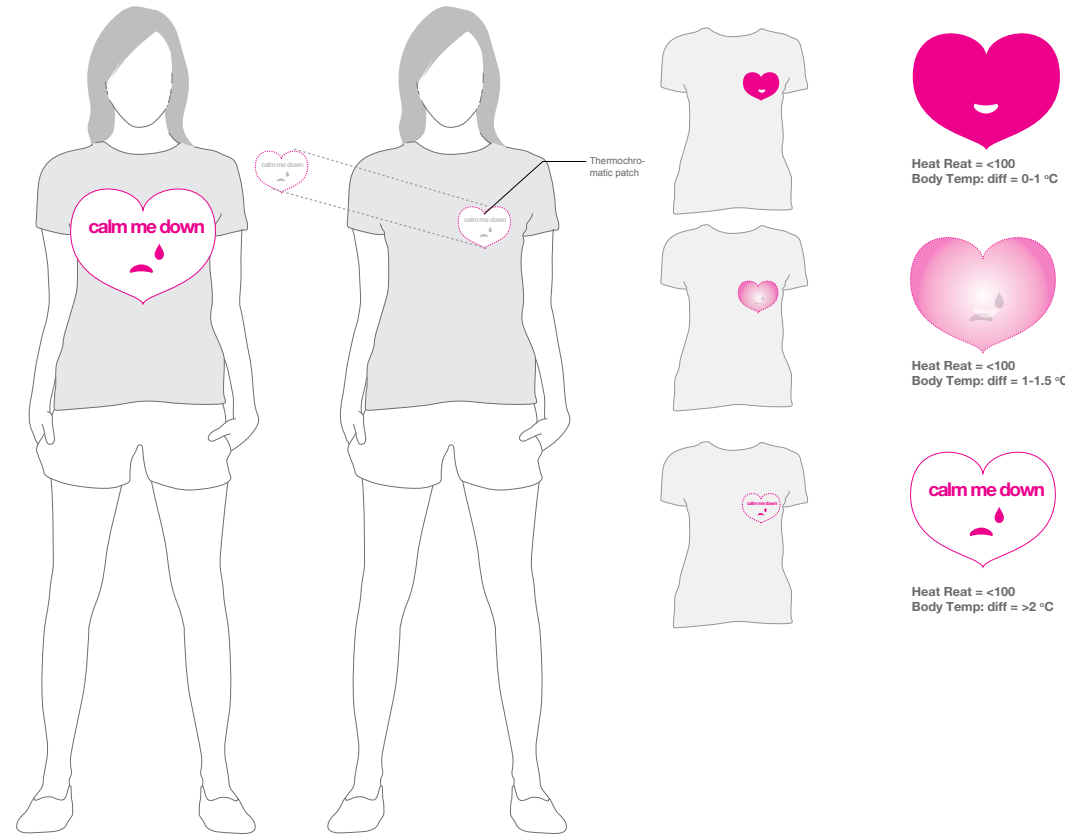
Function: Protection of potential danger area at body (e.g. neck, end of spinal cord)

Sense: Sight

Material: Thermochromatic Patch

Control: Automatic

Principles: This garment implements research in physiological indicators of stress as a visual signal of discomfort. As the wearer grows nervous or agitated in a crowd, their heart rate speeds and their body temperature increases. This is when the patch reacts to the rising temperature and changes color to display the words "Calm Me Down!" This will help others in the crowd see the agitation of the person, which will prompt them to not only offer soothing words or gestures, but also reflect on the emotional and physical state of the crowd as a whole.



Sense 02 Touch/Scent

Specifications:

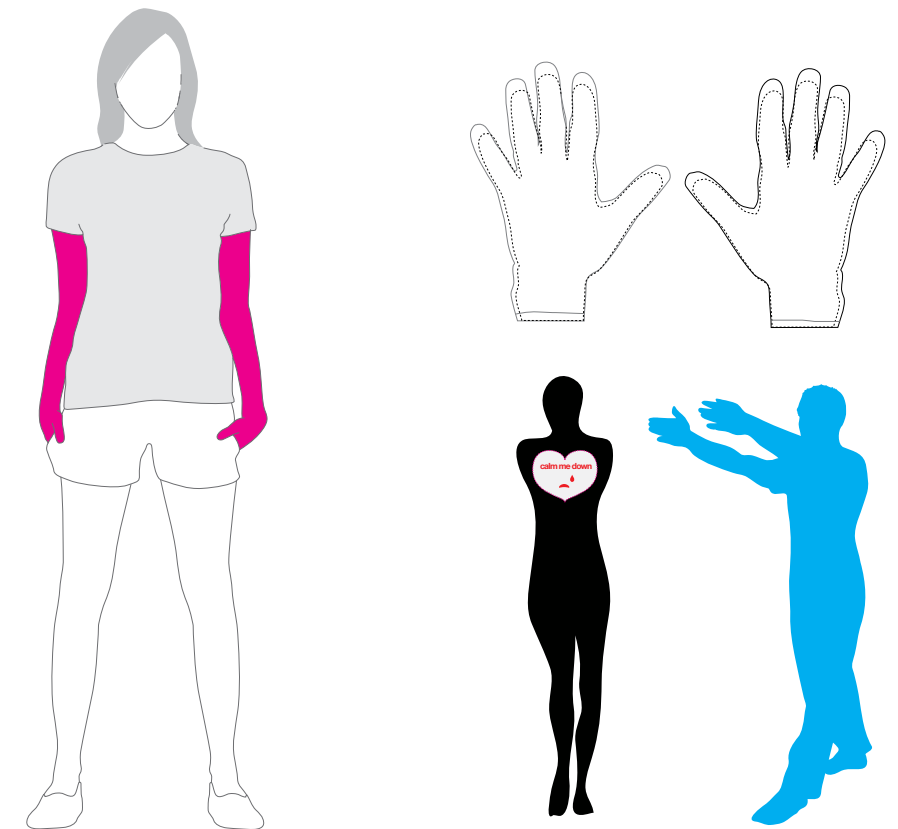
Function: Soft Gloves Emit A Calming Scent, Prompting Soothing Human Contact

Sense: Touch and Scent

Material: Cotton terrycloth gloves, chamomile

Control: Manual

Principles: These gloves are made of soft terrycloth, which can be used to facilitate the calming and soothing power of human touch on an agitated individual. Touching a stranger with bare hands can be construed as unusual or threatening, but the use of soft fabric helps to dispel such fears and provide extra comfort for the person receiving the soothing pat on the arm. In addition, packets of chamomile tea are embedded in the gloves, so a calming scent is emitted whenever someone is stroked or squeezed.



Sense 03 Hearing

Specifications:

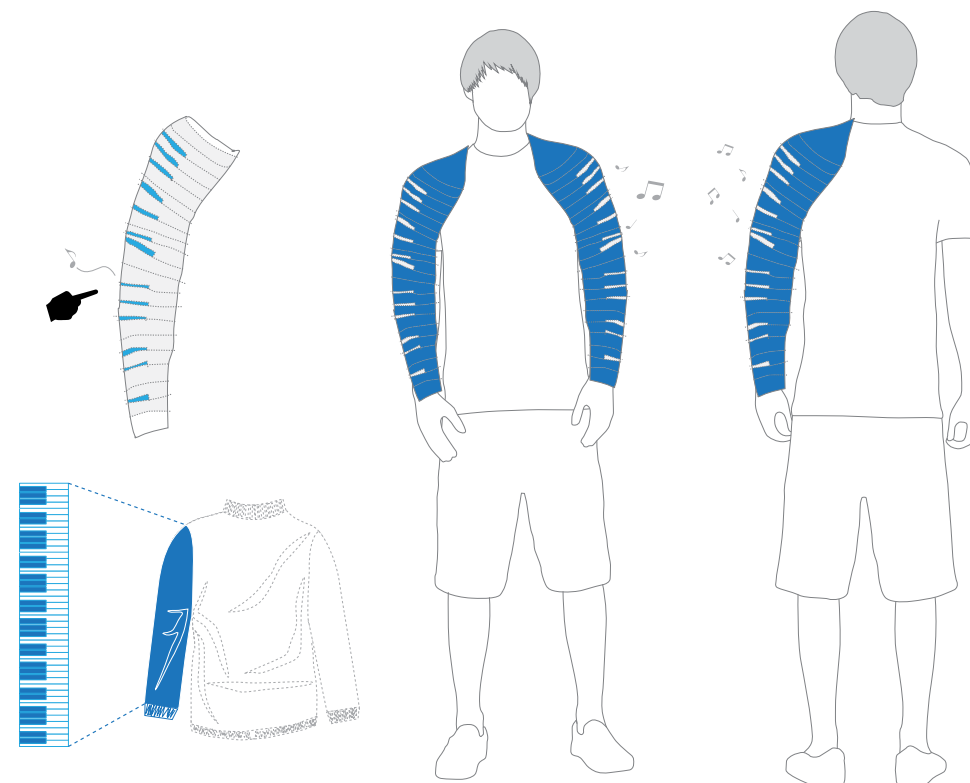
Function: Piano Keys Embedded into a Jacket Can Facilitate Playful Physicality and Nonthreatening Interact

Sense: Hearing

Material: Jacket, foldable electronic keyboard

Control: Manual

Principles: Songs and music have long been used to unite demonstrators and encourage peace and harmony. Piano keys embedded into the fabric of a jacket can only convert close physical proximity (the pushing and bumping that comes with being in a condensed crowd) into a playful experience, and dispel agitation and panic. In addition, the keys can also be played to calm down an already nervous crowd, and bring a sense of harmony to a tense situation.



Sense 04 Memory

Specifications:

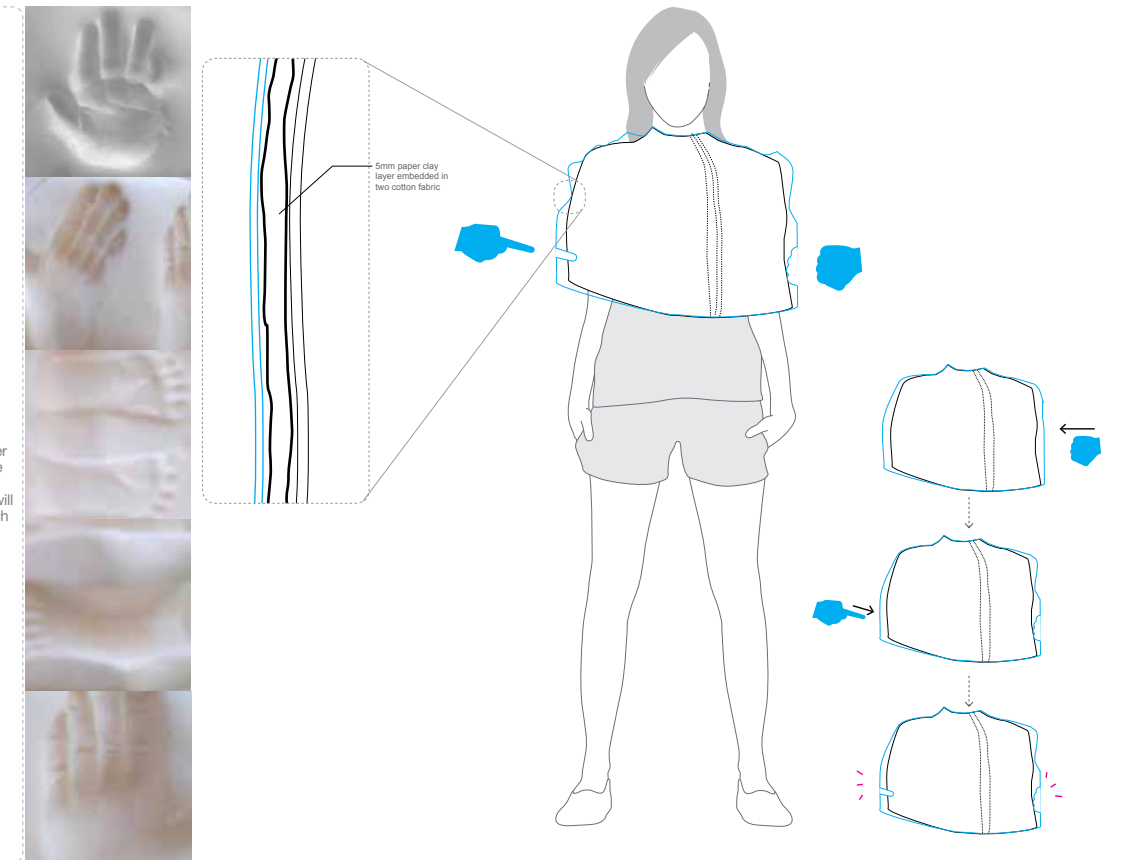
Function: To Memorialize and Transmit the Experience of Extreme Crowding

Sense: Memory

Material: Paper Clay

Control: Automatic

Principles: Being in an agitated crowd can be a dangerous experience. Memories of the occupation of this environment should be documented. This short garment is filled with a layer of paper clay, which can preserve the physical shoves, pushes, pokes and pressure of a crowd. Hopefully, this will provide an new understanding of such occupations for those who have not experienced it.

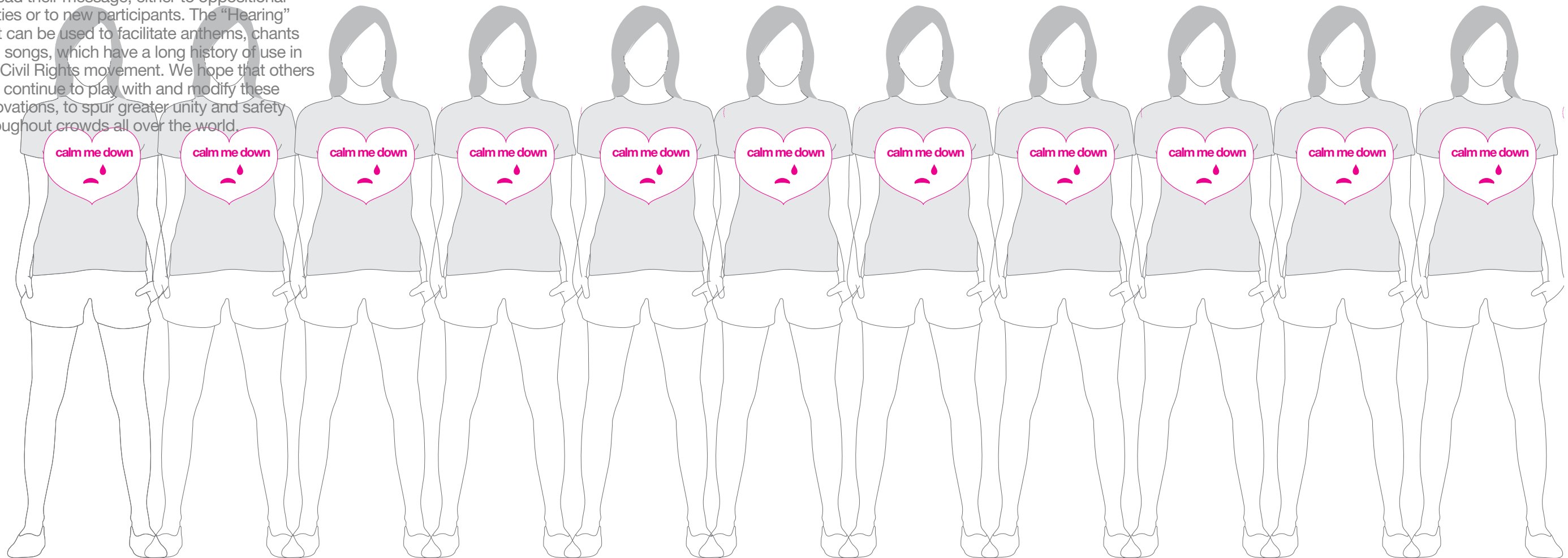
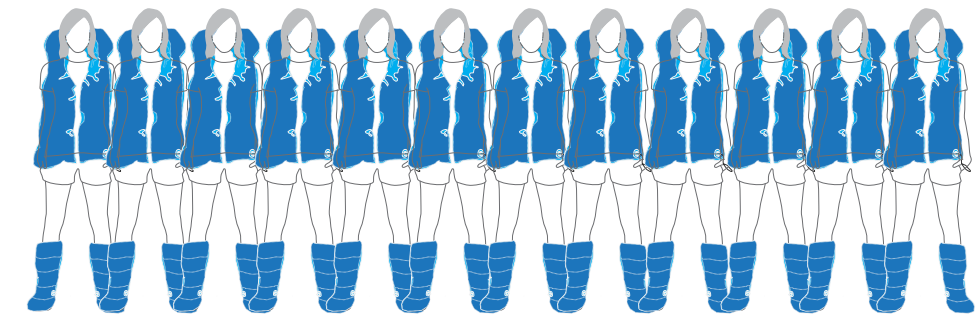
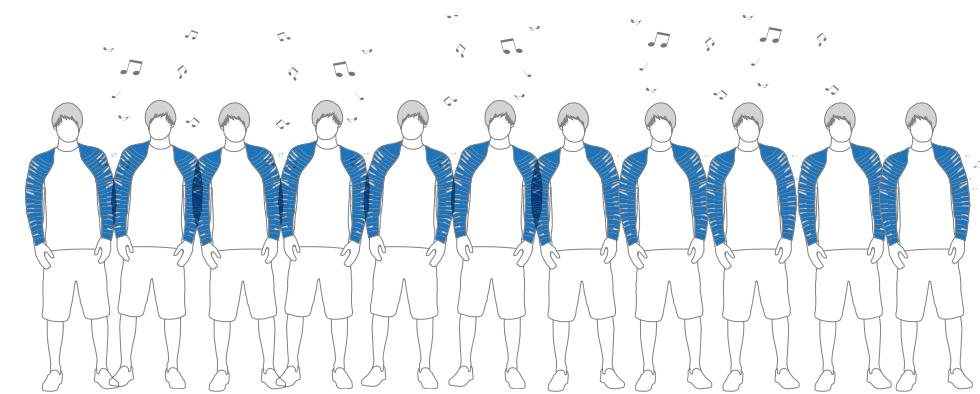


Hacking for conscious crowding

All of our prototypes were designed to facilitate calm and efficiency in densely crowded areas. However, they have also been designed with the Conscious Crowd in mind: those people who gather together in large numbers purposefully, to affect change.

Many of our prototypes can be “hacked” and converted into tools of unity, political agency, and aesthetic cohesion to facilitate a message’s spread through media outlets. the Basic Inflatable Unit can be used as a movable billboard, to display written messages and/or political slogans.

The “Sight” Unit can, when worn by a large number of people in a crowd, be used to convey a cohesive front that is so important for demonstrations that depend on man power to spread their message, either to oppositional parties or to new participants. The “Hearing” Unit can be used to facilitate anthems, chants and songs, which have a long history of use in the Civil Rights movement. We hope that others can continue to play with and modify these innovations, to spur greater unity and safety throughout crowds all over the world.



ELIZABETH

Anne Watkins



Elizabeth Anne Watkins, born in Los Angeles, holds a BA in Studio Art with concentrations in Digital Arts and Art History from the University of California, Irvine. She has widely exhibited her video and installation work, published art and film criticism both in print and online, and staged public performances around the globe. In addition, she guest lectured on post-modern narrativity in the Critical Studies department at the California Institute for the Arts and clerked in intellectual property law, maintaining a freelance practice in patent illustration. She also founded the cross-disciplinary art gallery Informatics Projects at the School for Information and Computer Sciences at UC Irvine.

She is currently working to investigate relationships of cognition, pain, memory and identity in public space as a Master of Science in Visual Studies candidate in the Art, Culture and Technology Program at MIT.

She is acutely interested in the operation of the public monument as a container for myth and narrative, and how these stories translate into notions of unified national identity for generations of citizens, the world over. She wishes to understand how these groups of citizens self-identify in public space, and how they navigate both within that space and with each other.

KIAN

YAM Hiu Lam



Kian is a Graduate student of MIT MArch Program. Kian received her bachelor degree in University of Hong Kong in Architectural Studies. The previous past five years of architectural design training equipped her with solid foundations of design skills, especially in graphic communication. She has proficient knowledge on 2D graphic programs: Photoshop, Illustrator, InDesign, Flash, AutoCAD. 3D modeling softwares such as Rhino, SketchUp and 3DstudioMax. She is also trained with basic programming language such Processing, rhino-scripting and Aduino.

Having participated in various exhibitions about architectural and media design before her graduate studies, Kian developed keen interest in interactive communication between human behavior and architectural spaces. She takes ExtremeCrowd as a good opportunity to explore further on interactive design between people and space. Under extreme Crowd condition, clothings becomes a dual-nature medium; while it is a medium between human body to the environment, it is also a media for people to advertise personal interest, especially in protests or mass gatherings. Therefore, Kian takes such spatial quality as design potential for interactive designs. Under such tension in ExtremeCrowd condition, she believes clothings could become an interesting interactive spatial generator in urban environment.

MAVIS

YIP Ho Kwan



Mavis is currently studying in Level 3 (MIT MArch program). She studied her undergraduate degree in Hong Kong University also in Architecture which shaped her interests toward exploration of spatial relationships and interactions between human activities and spatial configuration. She is proficient in 2D drafting programs like Autocad and photoshop, 3D modelling programs like Sketchup and Rhino. She also learned sewing and knew basic patterning.

Studying Architecture for more than six years, she has been learning how to create space and shelter for human to inhabit. She wants to explore how the primary shelter for human which is the skin functions and challenge the weakness of the primary shelter through designing the second skin. Our primary skin has many systems to regulate our bodies and provides a suitable environment for us to survive. It functions pretty well under most of the circumstances. However it is not as strong as we thought, it can be easily cut and damaged. Its malfunction is fatal especially under extreme conditions. She wants to use her expertise in spatial relationships to investigate the spaces between the first skin and the second skin, the spaces between people who have the second skin. Through this investigation, we can find the potential of the second skin as a strengthened shelter and also as the mean to understand and regulate the spaces separating people. The extreme crowded condition is very interesting to her as it describes the precise urgency for understanding these spaces.

JAE

JAE Kyung Kim



Jae is an architect and the reader of Architecture CODE, which is the architecture and urban design team based on South Korea. His interest in architecture and urbanism is the urban in-between space; the relationship between a street and a building, a building façade and urban flows. He has got numerous awards like Korean Architecture Awards. Moreover, his recent project, Urban Openness, manipulated his architectural ideas and proposed the new typology in Seoul to have highly dense urban condition. In Urban openness, he not only tried to create the intermediary space between the street and the building but also provide the visual opening in-between buildings to people. This work will be published soon in magazines in Korea. He keeps doing his architectural and urban research at MIT; also got B.Arch. Engineering in Hanyang Univ. in Seoul, Korea. He has been trained as both an architect and a construction engineer for 4 years, and established his own office in 2009. Currently he is trying to expand his research, in-between relationship, to smaller scale such as wearables, which is the reason to take the class of Ute Meta Bauer's "The Second Skin" class.

EXTREME : CULTURE CRISES

CONCEPT

PROJECT:

Introduction

SECOND SKIN

Skin is the outer covering of an animal or human and consists of various layers, each fulfilling a specific function. Skin is essential for survival and can adapt to the environmental factors in which a population functions. The color of skin, the composition of skin layers determining, for example, an individual's eye shape, and the texture of hair on the skin can all provide an individual an advantage over another in a specific climate.

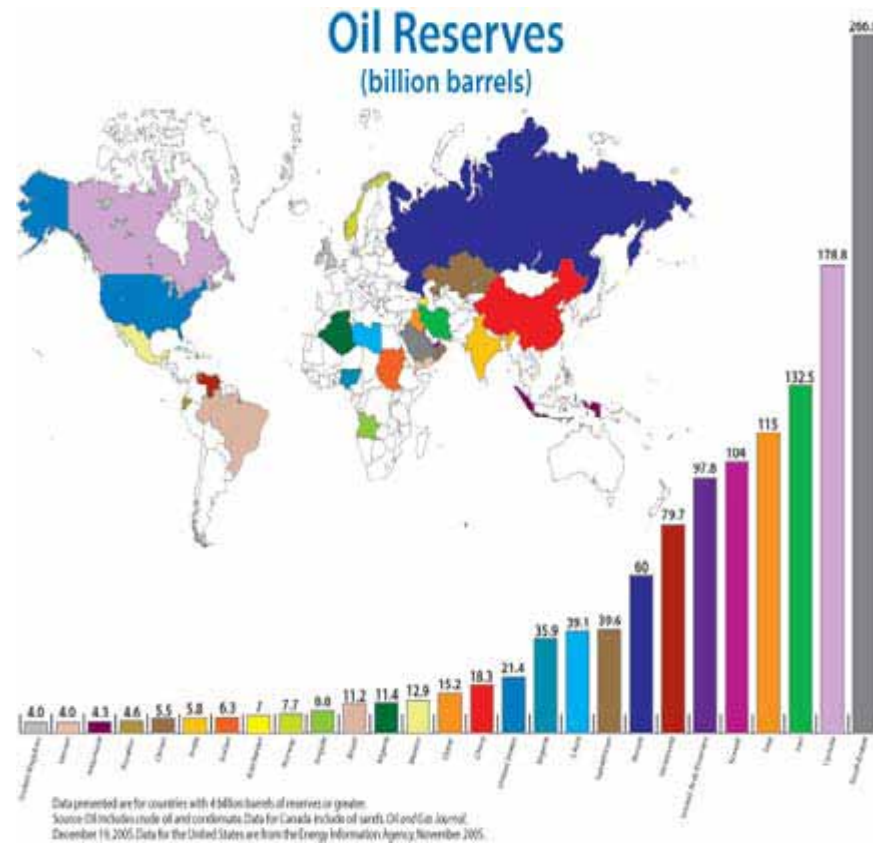
In climates where changes on the biological skin are insufficient, a second skin, in the form of clothing is applied. This second skin, together with the first biological skin, has historically been the primary determinants and indicators of cultural identity.

The notion of a second skin in an extreme environment can be interpreted through many methods. However, the theory of developing a second skin, of whatever material, nonetheless is always in use of "Oil". Whether it might be, whether sewing a canvas, the notion of a sewing machine, and the crude material that the machine is made out of, plastic, resonates in the use of oil. Nevertheless, our extreme environment is always determined by and concludes one way or another through the use of oil. We need oil to survive and oil is the cause of our extreme conditions. Our notion of second skin, has developed through a timeline of the last two decades, following the Oil crises of the 1990-present.

DEFINING EXTREME ENVIRONMENT:

EXTREME ENVIROMENT

Through the notion of development, we isolate and reposition ourselves in extreme conditions that we are not familiar with, and when we are not able to adapt to the cultural aspect of a certain environment, we are then engaged in survival mode to configure others of their extreme cultural environment to observe the norm. As Samuel Huntington's clashes of civilization continues to develop on the notion of cultural practice and the disengagement of extreme culture, one has to ask what is the base and the cause of our inert reaction to preserve our culture, when the current situation that we are living in, is based on the "oil culture" and the root of our extreme cultural environment, in the past decade, has been the obsession with an extreme natural resource: Oil.





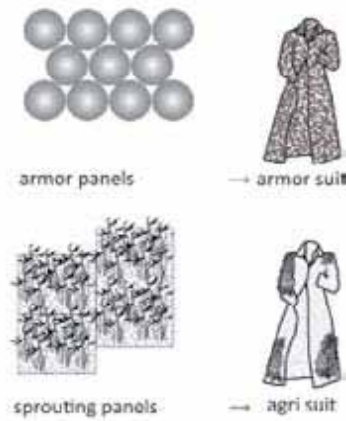
2nd SKIN

URBAN CHALLENGES

- 1 WEATHER** Heat
Cold
Rain
Radiation
- 2 VIOLENCE** Projectiles
Knives
Camouflage
- 3 NATURE** Animals
Insects
- 4 SURVIVAL** Food
Water
Shelter
Storage
Healing
Hygiene

AVAILABLE MATERIALS

- SCAVENGING**
Bottles and cans
Styrofoam
Dirt/dung
Plastic bags
Tires
Glass
Scrap plastic
Scrap metal
Billboard vinyl
Clothing scraps
- FABRICATING**
Aluminum sheets
Ceramic disc
Kevlar sheets
Fibreglass
Steel casts



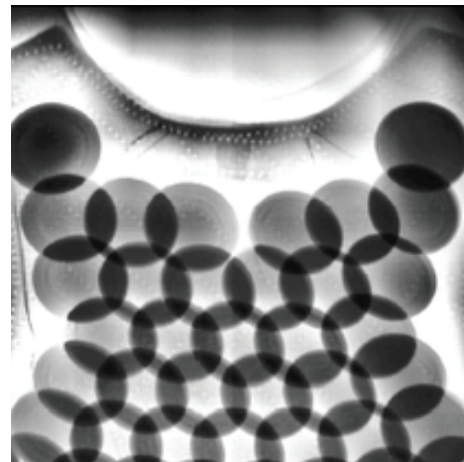
RESEARCH MATERIAL

DRESS

KELVAR

- A. Basis of Design: spunbonded polyolefin, non-woven, non-perforated, weather barrier is based upon Du Pont™ Tyvek® ThermoWrap™ and related assembly components.
- B. Performance Characteristics (Values listed are nominal values measured by an accredited third party lab.):
1. Effective R-value: R-2 (including 3/4" minimum airspace), as designated on ASHRAE tables, ASTM Handbook of Fundamentals, Chapter 25- Table 3.
 2. Air Penetration: 0.001 cfm/ft2 at 1.57 psf, when tested in accordance with ASTM E 2178.
 3. Water Vapor Transmission: 36 perms, when tested in accordance with ASTM E 96, Method B.
 4. Water Penetration Resistance: 210 cm when tested in accordance with AATCC Test Method 127.
 5. Basis Weight: 2.6 oz/yd2, when tested in accordance with TAPPI Test Method T-410.
 6. Air Resistance: Air infiltration at >1000 seconds, when tested in accordance with TAPPI Test Method T-460.
 7. Tensile Strength: 29/27 lbs/in., when tested in accordance with ASTM D 882, Method A.
 8. Tear Resistance: 12/7 lbs., when tested in accordance with ASTM D 1117.
 9. Surface Burning Characteristics: Class





RESEARCH MATERIAL

ARMOR:

KELVAR

Nihon Uni first looked at the tough aramid fiber (often referred to by DuPont's brand name, "Kevlar") used in military body armor, then reduced the thickness and density of the ultrahigh molecular weight polyethylene fiber so that it could be flexible enough to serve as everyday clothing. The resulting T-shirts are about three times as strong as those made from cotton fibers, yet are still light enough Stahlhelm to be comfortable and machine washable.

KNIFE, BITE & SLASH RESISTANT CLOTHING

ASEO is a specialist manufacturer of high quality knife, bite and slash resistant clothing using Spectra® - pound for pound a material 15 times stronger than steel and 40% stronger than Kevlar.

Ballistic Plate / Bulletproof Plate

Ballistic plate (BP-1) Material: PE and ceramic composite Level: NIJ standard III Size: 25cm x 30cm x 20mm Weight: 2.4 kg/pec . Ballistic plate (BP-2) Material: PE and ceramic composite Level: NIJ standard level IV Size: 25cm x 30cm x 21mm Weight: 3.0 kg/pec.

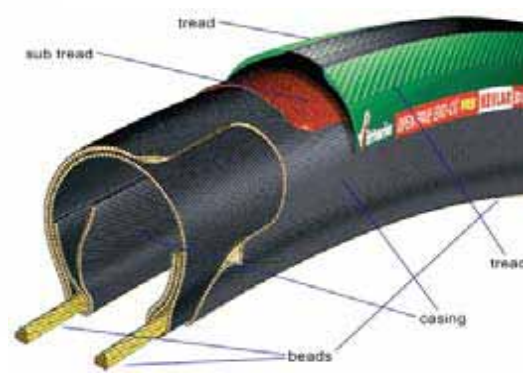
DYNEL

A popular laminate fabric used for museum-quality restoration work on wooden boats. It's strong and yet supple like a true woven fabric, with no fibers to irritate your skin.

Dynel fabric has very high abrasion resistance but swells in the resin such that it works better if vacuum bagged or pressure molded. The most common uses of dynel are for wear patches on boats, edgings on paddles, and the like. It has also been used as a deck covering on wooden sailboats. A good choice anywhere that abrasion is a major issue. (This material is similar in its abrasion resistance to the original Dynel made by Union Carbide, which has been unavailable for many years, but it may be chemically different and have different properties in aspects other than abrasion.) Please note that it retains a milky appearance when saturated rather than turning clear in the resin like fiberglass. 5 OZ 54 in. WIDE PLAIN WEAVE.

DRAGON SKIN

Dragon Skin is a type of ballistic vest made by Pinnacle Armor. It withstood a grenade. It is currently produced in Fresno, California. Its characteristic two-inch-wide circular discs overlap like scale armor, creating a flexible vest that allows a good range of motion and can allegedly absorb a high number of hits compared with other military body armor. The discs are composed of silicon carbide ceramic matrices and laminates, much like the larger ceramic plates in other types of bullet resistant vests.





STORY

On January 23, 1990, Iraq dumped 400 million gallons of crude oil into the Persian Gulf, causing the worst and largest offshore oil spill at that time. This tactic was deliberately executed to keep the U.S. marine forces from invading the area. Nevertheless, in January of 1991, the Iraqi military set 700 oil wells on fire creating a health hazardous environment to the area. The fortunate Kuwaiti people were able to leave the country as the fire burned out of control. Land mines had been placed in areas around the oil well, and the danger of sending in firefighting crews. This continued until November of 1991, where somewhere between 6 million barrels of oil was lost each day. Not everyone was able to leave the country. The people that were left behind, particularly the Muslim women who were left behind of which were not of Kuwaiti decent, rather of other practicing Muslim countries had to survive.

The implementation of culture and survival was essential. Taking the concept of the veil and using it as a survival method, is a response to the extreme environment that was created in the Middle East at that time. Through the space of the veil and the obscuration of the sexuality of the body, and the use of a recyclable material, of which is oil based, is the response to the Gulf War. The pocket dress made out of woven plastic bags is snug fit to the inner layer of a woman's body. However, the profile obscuration happens when the pockets, of which are filled with survival needs such as rice, beans, and etc, are tied creating another layer of profile to hinder the original formation of the body.



STORY

EXTREME CULTURE

For the west, the long obsession and fantasies that penetrate behind the veil, often through the misinterpretation of the oppression of Muslim women having to hide their sexuality behind clothing is often alluded to a man made condition (in relation to our invasion of Afghanistan and Iraq) . For an environment that is male dominated, demanding that the women have to obscure the feminity through a garment whose meaning cannot be contained is of the most extreme cultures. The notion of obscurance is often fought over by adherent and opponents of many who claim that there meaning and understanding of the "Islamic modest dress" is one of the true meanings. However, the acceptance that the culture of modesty cannot be contained with a single truth, rather it is rooted in specific historical moment and locations and its depiction, adoption, adaption and rejection is always relational. Through the interaction with the West, the emergence of forms of modernity and post-modernity, in particular the liberation of the bourgeoisie spirit of the Freudian sexuality produces a shift in the perceived local and international significance of the veil. Standing the in beacon of the "western" concept of the veil, and liberation of women, through our traditions and culture or an emblem of progressive modernity is articulated. A response to an extreme condition of culture, pressurized by both the east and the west, obscure the sexuality and liberating the feminity, the vagina dress, not only obscures the women's figure, rather celebrates the female body outwardly.



TEAM

EMILY TOW

Emily Tow is an undergraduate student of Mechanical Engineering at MIT. As an engineer, she is most interested in fluid mechanics and heat transfer and their applications to energy conversion. She is also pursuing a minor in Art, Culture and Technology in response to a compulsion to document her observations and make things. She works daily in her sketchbooks and creates inhabitable and interactive fabric sculptures. Emily is a self-taught seamstress who has been making her own clothes for six years. Emily's research will address clothing for environments in states of crisis, where fluctuations in climate, location, resources and infrastructure will push humans to the limit of their innovativeness and will to survive.

GERHARD VAN DER LINDE

Gerhard Van Der Linde is currently in his thesis semester of the MArch program in the Department of Architecture. He found his way into Architecture by way of Psychology, a discipline that continues to inform his work. He has an interest in the human factors relating to architectural design and is currently focusing on designing urban housing for the aging baby boomer generation as well as individuals with dementia. He believes that everybody should care about this kind of design since the only reason one would not care, is if one is planning to die young.

JEREMY GREEN

Jeremy Green is a student of the GSD at Harvard University. He has received his bachelor of design from the University of Florida. His current thesis is to focus on the idea of the Exoskeleton. He likes to think of this as a possible extension of the physical human condition. In what ways can this condition be improved upon and how can we get more mileage out of typical joints and structure presented by the human body. Also the conventional exoskeleton presents itself, as one of the smallest most discrete forms of space in which walls (Skin) are deflated to the point they rest upon the occupants skin and the lines between wall and skin become blurred which is a topic that he also finds highly interesting.



MARYAM ESKANDARI

Maryam Eskandari is SMArchS Candidate in the Aga Khan Program in Islamic Architecture at Harvard and MIT. Her thesis focuses on Modern and Contemporary Islamic Architecture in the West. In particular, she focuses on expanding the margins and creating contemporary, yet symbolic Islamic Architecture. Blurring the boundaries of Design and Architecture to create a new expression for architectural design and exploring different ways to modify the current urban setting. Her research work has been on the development of western firms working on campus projects in the Muslim World. Ms. Eskandari is an editor for Architecture Week Magazine, and Elan the Magazine in New York City, New York, as well as a contributor to Alt Muslimah Magazine based in Washington DC.

EXTREME: COLD



BARE IN A SNOW:

HOW CAN A TECHNOLOGY BECOME A NATURAL
EXTENSION OF OURSELVES AND HELP US FEEL
FREE IN THE EXTREME COLD ENVIRONMENT?

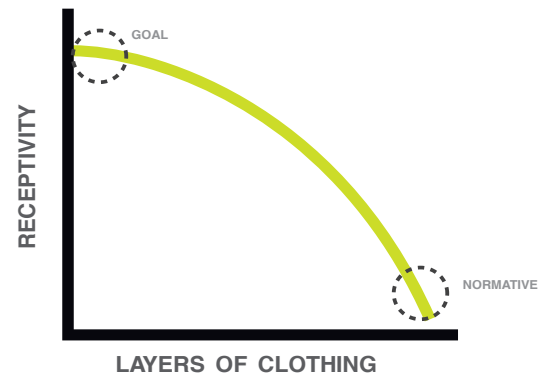


B[E]AR[E] IN SNOW

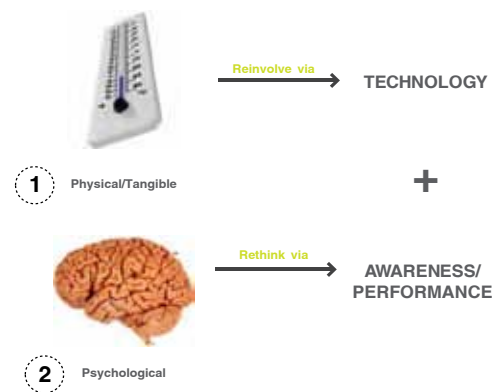
A reevaluation of how we interact in extreme cold environments



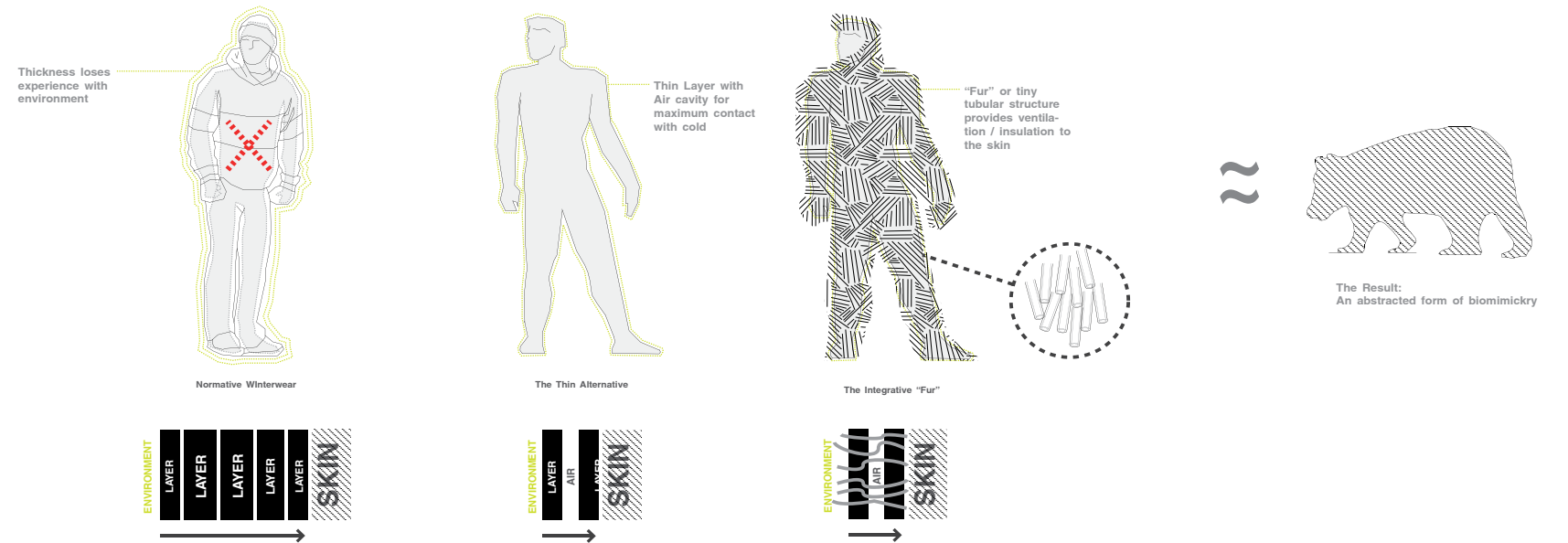
RELATION TO COLD ENVIRONMENT



2 COLD DETERRENENTS



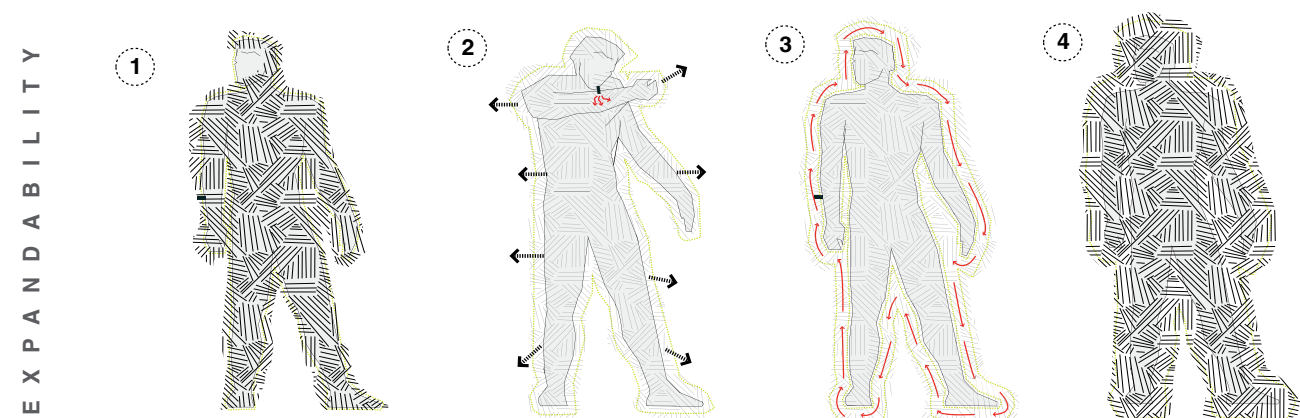
MINIMUM THICKNESS / MAXIMUM EXPOSURE



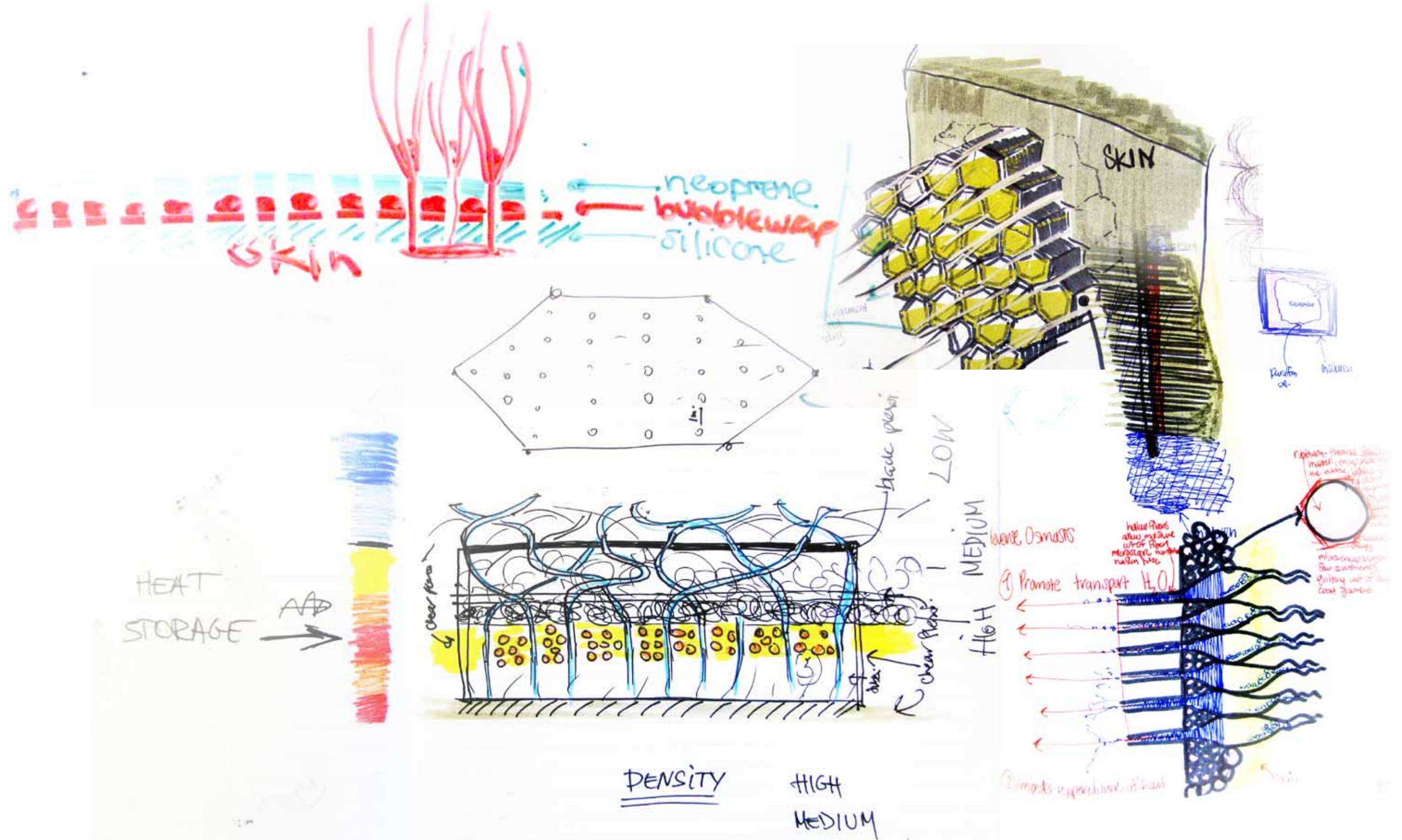
CONSTRUCTABILITY



SUIT DYNAMICS



SKETCHES







BIOS

Sarah Hovsepian is a new graduate student in the Design and Computation Group in the Architecture Department at MIT. She graduated with a bachelors in Architecture this past June from California Polytechnic University of Pomona in Los Angeles. Her undergraduate thesis project this past year, explored soft mobile self-reconfiguring matter that illustrates the potential to be able to build structures in harsh environments such as Mars. Sarah studied ants for a year, and extracted a better understanding of concepts such as self-organization and self-replication, to understand how designers can utilize these concepts to affect and change physical manifestations of our artificial environment. What does it mean to create architecture that is intelligent, robust, flexible, and dynamic, utilizing both top-down and bottom-up concepts in achieving global solutions, to meet our everyday needs? Her immediate goals for this class are to explore the boundaries between the physical and digital, how information is represented in both media, and investigating how a skin can become a new medium which not only functions to protect us from our environment, but also functions to capture, translate and transfer data between user to user, user to second skin, user to environment, and second skin to environment.

Chris Malcolm is currently a graduate student pursuing a Masters of Architecture at the Massachusetts Institute of Technology. He recently received his undergraduate degree from the University of Florida and interested in how the utilization of theory, design, digital technology, and socio-cultural can contribute to a positive change in society. During his final Undergraduate year, he participated in a digital architecture installation for the Beyond Media Spot on Schools international architectural exhibition in Florence, Italy. This exhibition was about collaborating to create an installation with artists, visionaries, and architects all together from around the world .hat was more than just an architectural object, but also a piece that works at a humanistic and experiential level as well. Since then, the integration of multiple disciplines within the fields of design and technology has been a fascination of Chris's, which is what led him to take the Bodywear/second skin class. He hopes to learn more of how we can design for the body within our harsh surroundings and contexts, through the crossover and interweaving of disciplines. His goal for this class is to attain a deeper sense of the relationship between the body and environment through the research and collaborative efforts done in this class.

Katia Zolotovskiy is a SMArchS student in the Design & Computation group, Department of Architecture. She holds two degrees, B.Sc. in Biology (1997) and B.Arch (2006) from the Technion - Israel Institute of Technology. Katia's initial interest to computation evolved during her final project in T_CODE, Technion Computer Oriented Design. The project was dealing with the relation between the digital and the craft tools in the architectural design methodology. During the last year, Katia has participated in the international workshop "Architectural Knitted Surfaces" (http://www.shenkar.ac.il/english/download/files/ArchitecturalKnittedeng_6.pdf), a unique collaboration between Shenkar Institute and CITA: Center for Information Technology and Architecture- Copenhagen. During the workshop she was modeling textile surfaces computationally, using parametric tools such as Paracloud and Grasshopper, at a level that takes into account both the performance of the surface as a whole, and the condition of the individual stitch, as well as the pattern, texture and shaping. By embedding conductive wires in the knitted pattern, the knitted surfaces were manipulated via sensors and actuators, to achieve desired behavior.