





DAMIAN VALLES [1977-2005...]

to become extinct; to test the limits of the mind and be kind enough to free the soul; to conquer fear; to look to yourself and fall in love with everything; to practice beauty; to challenge perception; to question reality; to be fluid; to experience the depths of empathy; to tickle and laugh; to submerge in the moment; to be honest and compassionate; to enjoy simplicity; to unify duality; to embrace mortality and become infinite; to begin anywhere... to become ephemeral.

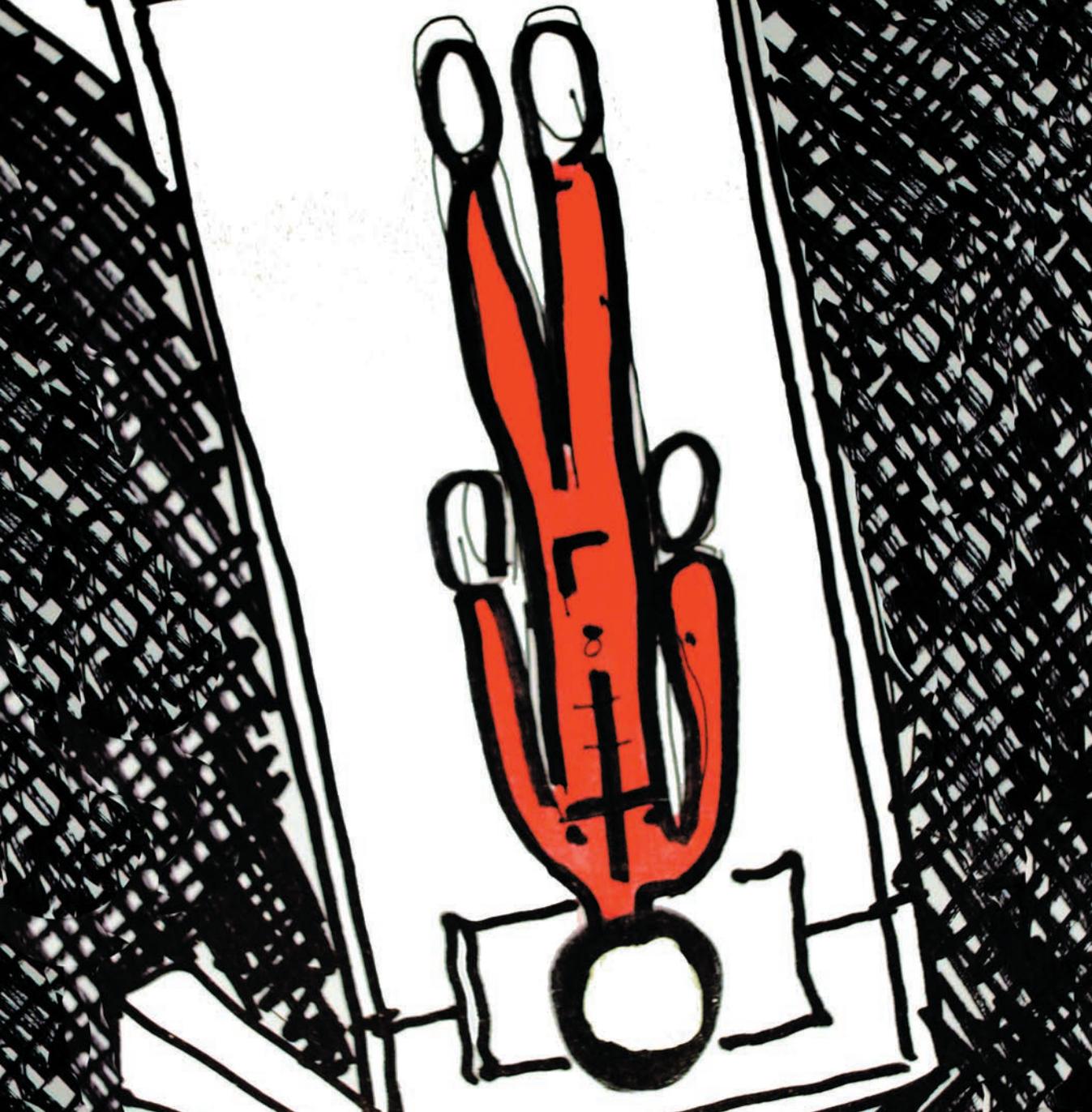
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DAMIAN
VALLES

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at the end, we all share the same destiny





DEATH. To die, to expire, to pass on, to perish, to cease existence, to vanish, to be annihilated, to be consumed, to be destroyed, to be done for, to be gone, to be lost, to be no more, to be wiped out, to become void, to fly, to go to heaven, to become extinct, to become stiff, to go home, to peg out, to push up daisies, to push up posies, to blow over, to be burn out, to do a fade-out, curtains, release, return to dust, deceased, demised, disappear, dissipate, disperse, dissolve, departed and defunct; dead as a doornail, dead as a herring, dead as a mutton, dead as nits, the last breath, total privation, paying a debt to nature, the big sleep, stretching the legs, God's way of saying "slow down", to check out, to hit a slump, to shuffle off this mortal coil, to head for the happy hunting ground, to blink for an exceptionally long period of time, to find oneself without breath, to be the incredible decaying man, to lie on the wrong side of the grass, worm buffet, kick the bucket, buy the farm, wear away, yield the ghost, take the cab, cash in your chips, the departure from life, the permanent end, the final state, the finish line, the last step...¹



The three spots [...] In Hinduism a single spot or “sunya-bindu” is used to describe the most insignificant geometrical object, a single point or a circle shrunk down to its centre where is infinite; it symbolizes the essence of the universe before it materialized into the solid world of appearances that we experience. It represents the uncreated universe from which all things can be created. This creative potential was revealed by means of a simple analogy. For, by its motion, a single dot can generate lines, by whose motion can generate planes, by whose motion can generate all three dimensional space around us.²

To put these set of philosophical and spiritual concepts into the western way of thinking, I use three points that refer to the three dots used in our written language to indicate that something will continue, is not concluded or is infinite.



PREFACE

We live in a progress-oriented society that preaches about freedom and openness to change, a society that in half a century has been able to break and question almost all boundaries in medicine, science, sexuality, engineering, technology and religion. Everything is possible nowadays, yet we still have a last taboo to conquer: DEATH.

Regardless of our big capability to adapt in the world and transform nature in order to meet our expectations and fulfill our never-ending levels of comfort, we are still not able to face our mortality. We are able to acknowledge the finite nature of every other living creature that surrounds us, but we cannot accept our own impermanence. As human beings we like to think we are on top of the world, death reminds us of our vulnerability; fear of the unknown, of change, of transformation and continuity are stigmas of our present time and culture.

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Death always has been and always will be an integral part of human existence, as natural and predictable as being born. Reason why the human mind has always been intrigued by this process, trying to solve its mysteries and depths, posing questions regarding resurrection, rebirth and afterlife.

It might be because the question of death unlocks the door of life. Imagine you are a newborn child, going out from your mother's womb, what would you see? You would see a bright light at the end of a tunnel. It might be the same light that people from near death experiences talk about. I'm not inclined by the idea of rebirth, but merely suggesting that nature shows us all the time that life is cyclical, that matter does not evaporate into thin air, but rather transforms itself in a give and take never-ending process of metamorphosis. Is this what resurrection means? Is this the kind of after-life reassurance we so desperately seek for?.

It has become really difficult to accept death in western society because of its unfamiliarity. In spite the fact that it occurs all the time, and that basically every 11 seconds somebody dies³, we never see it happen.

Our society is a youth-worshipping one. The health-care industry will do all the efforts to sustain life and will see death as a failure of the system instead of something natural; the death-care industry will try it's best to provide an "eternal resting place", to make dead people appear as if they where sleeping, to make people think that the corpse will remain still as time passes, to delay the natural process of decomposition in an absurd battle to interrupt the cycle of life; the media will sell the image of an eternally beautiful young woman, it will try everything and sell everything to blur the process of ageing and decay. This behavior is ripping away the natural character of death. And at the same time, posing a big threat to our environment due to the chemicals used for preservation of the corpse, the enormous amount of energy and materials used for the manufacture of coffins, and the urbanization and subsequent degradation of cemetery land.

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Elisabeth Kübler-Ross in her book, Death -the final stage of growth-, wrote that it is always hard to die, and it will always be so, even when we have learned to accept death as an integral part of life, because dying means giving up life on this earth. But if we can learn to view death in a different perspective, if we can reintroduce it to our life, if we can appreciate our finiteness, will help us to ease the process of dying, and enhance the experience of living.

We can face death rather than avoid it. Design can be a tool to help us make this transition.

Grant me the serenity to accept the things I cannot change,
the courage to change the things I can,
and the wisdom to know the difference.
-Alcoholic Anonymous Prayer-



INTRODUCTION

In the future I am dead, and so are you. There is nothing more universal in life than death; that is the reason why this topic has been on the table for ages, from philosophers to intellectuals, religious people, poets, painters, sculptors, scientists and the common man. They are all intrigued by the cycle of life and what appears to be the final stage.

So it would be correct to say that dying is a topic that concerns everybody that is living, and that it is heavily regulated by the government, politics, religion, ethics, medicine, science and law; in western society, or at least in America, it is not possible anymore to “just die”; everyone has an opinion about it, the politician will call it mortality rate, the government a casualty, religion an act of God, science a natural act, medicine a corpse and law a deceased. But no matter what terminology is used, we all recognize and fear it’s presence.

82 The plurality of the purpose of life and the uncertainty of what happens after death are two really powerful questions that have no real answer and that are open for interpretation. Judeo-Christian religion knows this facts really good, and has founded its routes and empowered itself by the fear that this uncertainty and lack of answers bring to the human mind. The entire complex involvement between Christian teachings and death is too lengthy to be fully discussed here, so for now let’s just say that its origin lies in the story or fable of Adam and Eve; because of Adam’s sin humankind inherited death, and with it came the fear of hell.

The topic of Death has always been and still is a big taboo in society because it confront us with the fact that we are mortal and finite, and that our time here is ephemeral and impermanent; to think of our own fragility is something that we tend to avoid, a thought we dread; but it is this volatile and exquisite character of existence that makes life so precious, random, unexpected and surprising.

The Thanatology movement and some of the most ancient Asian religious philosophies base their teachings and beliefs in the facts that it is only through a conscious understanding of our impermanence and mortal character of our being, that we can truly learn to live. In words of the Dalai Lama, “it is by accepting death as an integral part of life that we can attempt to achieve happiness”.

I know that happiness might be over rated nowadays but the thought that death is the end of existence and the fact that I lack so much information about it motivated me to research about this topic, in an attempt to understand where the funeral rites and costumes came from, and to explore new possibilities that provided me with answers that better suit my intellect, emotions and spiritual beliefs.

As a social designer, the psychology of funerary objects and practices, together with the sustainable aspects of death in American culture strike me as old fashioned, aesthetically sterile, environmentally irresponsible and spiritually empty. I see them as a reflection of a society in spiritual agony, driven only by consumerism, individualism and fear.

As a simple human being, regardless of racial, cultural, religious, educational, age, socioeconomic line and any other social etiquette, and talking only as a person who has been in near contact with death in more than one occasion, I can say that after the experience of near dying, when realizing you are safe and that you did not die, you are not happy for not dying but rather grateful for still being alive. And then it hits you in a pretty basic and primitive way that, to face death enhances the experience of living.



The aim of this project is to design a meaningful experience that challenge people's perception of death, one that enhances the liquidity, ephemeral, impermanent and organic beauty of the cycle of life. Confronting people with their mortality, shaking them till they awake to life. With the honest belief that once humanity shifts from a linear perception of life and death to a cyclical one in which death is just a transitional state of being, the relation between our selves and the environment in which we live, and the personal spiritual growth will definitely benefit from it.

Conscious about the plurality of opinions and different beliefs toward the topic of Death, It is a professional decision to approach this subject on essential basis, that being, death as a natural event that forms part of the cycle of life; trying to stay outside the boundaries and limitations of religion, and setting the context for this intervention in North America, focusing it's attention in the United States due primordially to the fact that this country was and still is a trend setter regarding the funerary industry.

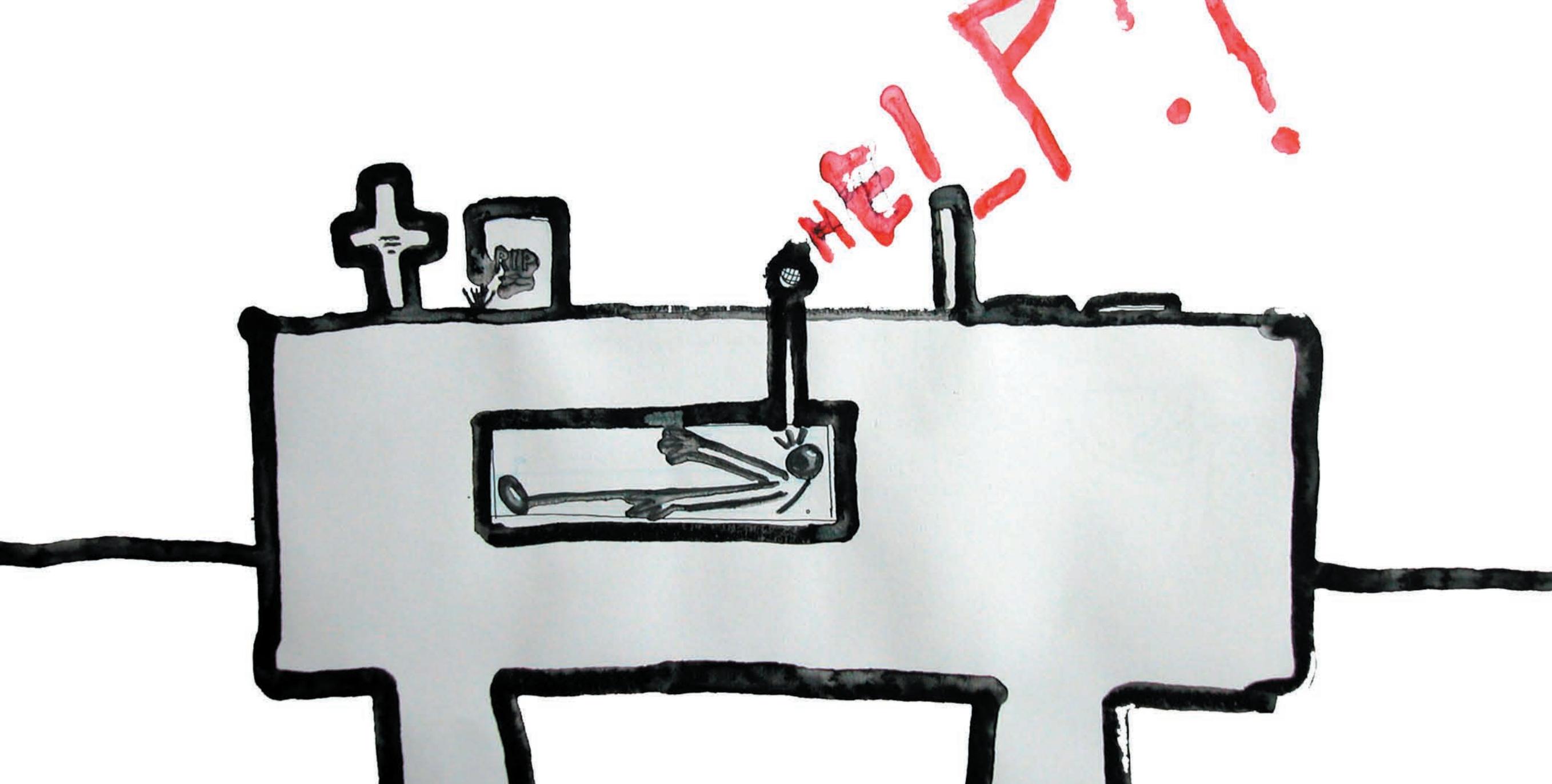
In order to judge this work for what it is: A design proposal that tends to challenge the fixated notion of death, and rituals regarding death. It is a necessity to ask the reader to open up his mind and at least play with the idea that the way we celebrate death in modern western society is not the only way to do it; that it is actually not even the way we used to do it a century ago⁴; and that even the most intrinsic behavior of human existence can be modified if the proper circumstances arise.



PROBLEM STATEMENT [ENVIRONMENTAL]

In western society, burial and cremation are the most used ways of funeral, being burial the most common practice, with 76 percent coverage of the whole deaths in the U.S.A.⁵ There are some others, only rarely applied, like the seaman's grave and the placement in open air. And in Europe two new kinds of disposal procedures are being examined, Lyofilisation and hydrolysis. Further possibilities are only variations of one of the process parts. One part of the whole funeral ceremony can be considered as a procedure, the other part has meaning as ritual. The procedural part is usually in hands of a mortician who takes care of drafting the dead notice, transport, preparation of the body for viewing, and the funeral service. With only few exceptions, the final step is the actual burying or cremation.

For a long time I wondered: How much land is dedicated to store the corpses of our dead?. I still haven't found an answer to that, but I can tell you that approximately 2 million bodies are buried in the United States each year, and if laid out head to toe, the line would stretch all the way from Los Angeles to New York City⁶. But it's not only the misuse of space that concerns me, it's also the degradation and pollution of the soil and groundwater by means of the chemicals used to embalm the bodies, such as Formalin, a 37 percent solution of Formaldehyde in water, which in the early 1980's, the National Cancer Institute reported that could be a cause for cancer, birth defects and leukemia.⁷ Maybe that's the reason why the Environmental Protection Agency listed Formaldehyde as a human carcinogen in 1987, and regulated it as a hazardous substance. In addition to this chemical, it is possible to find traces of nitrate, phosphate, ammonia and bacteria from decaying bodies.⁸ There is also a waste of energy and resources in the way corpses are handled, disposed and stored; the two most accepted solutions in our society being cremation (burning the corpse) and burial (burring the corpse in the ground), procedures that in terms of eco-practices are considered to be the last possible options for economy of resources.



PROBLEM STATEMENT [HUMANITARIAN]

Agreeing with the popular saying that, the only sure thing in life relies in the fact that sooner or later all of us are going to die. This statement is of particular interest if we overview the behavior regarding the most important social and individual events in our life: being born, religious ceremonies, getting engaged and married, birthdays, graduation, etc; they are all moments of celebration and, they are all planned in advanced and till the last detail. So I wonder why, one of the most important events in our existence, the moment of death, is not tailored with the same care and intensity. And why is it that death can't be a beautiful and meaningful experience?

There is a growing need in today's death care industry of providing families with a more individualized and personal approach to memorializing their loved ones and to improve the survivors experience. The aim of this project, regarding the social aspect of death, is to provide comfort for grieving family members and encourage positive reflections of those who have passed away, by offering a memorial product of ultimate individuality, consciousness and beauty.

With the rise of the baby boomers, consumers are making funeral decisions based on different values than their previous generation. Boomers and seniors have a strong commitment and appreciation for the value of funeral service and are seeking for a meaningful experience that provides a connection to their loved one, and a celebration of the life that was lived. Many consumers are also seeking for products, services and experiences that differ from those that have been included in the traditional funeral service. Their decisions are more event-based than product-based driven.⁹

The public has become more open to the discussion of death and memorialization. This trend is evidenced by a recent influx in funeral service and death exposure in the media; the successful HBO television series "Six Feet Under", a drama that focuses on a fictional family that owns a funeral home, and movies like: A life without me, the embalmer, what dreams might come, and even Richard Fleischer's "Soylent Green", are hints of a society that is searching for new answers and exploring new possibilities towards this topic.

Society needs to open up and embrace humanity, understanding that life is not dual, that death is the end, but also the beginning; that dying is an illusion, just as life; that nothing ceases existence. It only transforms, evolves or changes face. We need to realize that the miracle of regeneration, of the constant dance between birth and death is what keeps the Earth in motion, is what keeps us living. And that it is only through the experience and understanding of our fluidity and impermanence that we can be able to achieve a level of co-existence with people and with the environment; or as Sogyal Rinpoche wrote in -The Tibetan Book of Living and Dying-, "to practice death is to practice freedom".



PROBLEM ANALYSIS [ENVIRONMENTAL + HUMANITARIAN]

There are 6.4 billion people in the world¹⁰, each one of them is going to die in the next one hundred years • More than 56 million people in the world die each year¹¹ • Every 11 seconds somebody dies in the U.S.A.¹² • In 2003, according to the National Center for Health Statistics, there were 2,423,000 deaths in the United States • The Casket & Funeral Supply Association claims that 76 percent of the deceased in the U.S.A. were casketed and had some form of ritual or ceremony, a trend that is also true for the rest of America and other parts of the world • The burial of corpses in cemeteries, and subsequent degradation, can cause pollution of underwater¹³ • 2 million embalmments each year are made only in the USA¹⁴ • The average corpse gets an injection of 3.5 gallons of formaldehyde¹⁵ • 7 millions gallons of formaldehyde are legally buried inside corpses each year¹⁶ • Research of contaminated underwater from cemetery ground shows the presence of the following substances: formalin, nitrate, phosphate, ammonia, pesticides, fertilizers, herbicides and a range of viruses and bacteria including: faecal streptococci, staphylococcus¹⁷ • The human corpse inside a coffin normally decays within 10 to 12 years.¹⁸

To understand more about the depth of the problem and the possibilities of improvement for the funerary industry regarding its burial service, the following text will analyze each state involved separately: body preparation, burial, ritual, the container for human remains and the final disposition place and memorials.



DROP DEAD GORGEOUS [THE GENERAL PROCEDURE]

You start feeling light and your body feels heavy, it is so difficult to breathe, your eyes start to see everything blurred for a moment, but afterwards the colors sharpen and light gets brighter; the sound goes and comes like if you were playing DJ with a pair of speakers; suddenly you focus on a detail, a color, a sound, a spider on the corner of the ceiling, it doesn't matter what; what makes the difference is that you know something the rest of us don't remember; you breathe calm without breathing anymore, you step up without touching the ground, you close a door, and in an instant of time that flashes your life before your eyes... you go away. You might be in another place, a nicer place, but the fact remains, your body is still here.

Cooling

In the majority of cases the body is placed on a cooling plate or inside a freezing-room on a temperature below -0.5 , the temperature needed to freeze the blood, inhibit bacteria and slow down the decay while waiting for the body to be embalmed. This cooling requires 90 W on average and is provided by the grid.¹⁹

Preparation

When a person dies in America a physician is requested to determine the cause of death and make up the death certificate. One of the relatives informs the city council of the passing away of the person involved (this can also be arranged by the funeral director). Then the actual preparation of the body starts, involving aspiration, washing, massaging, embalming, dressing and making the corpse ready for exposure, which in some cases can mean restoration work using special modeling wax and make-up. The approximated amount of clothing is about 720g polyester fabric, 480g linen fabric and the shoes with 0.36m² leather²⁰. The embalment of the body requires an injection of approximated 3.5gal of formaldehyde, a small amount of contact glue and around 1.5m of synthetic thread to sew the body after the embalment has been finished.²¹

Covering

The body is placed in a coffin for display and transport. Such caskets are available in a variety of options. Typically however, the casket is made of wood (70-80% chipboard, 15-20% oak), has Zamak metal grips and an apparel liner, and then glued together. Conform the information provided by the manufacturers the average weight is 20kg of which 50g are for the metal grips and 500g for the linen apparel²². Alternatively one can opt for an eco-coffin, much lighter than the usual wooden coffin, that can even be made from recycled office paper like the eco-pod by Hazel Selene; but it is more likely that people go the other way around and choose a much heavier and expensive caskets made of coated steel, aluminum or cast bronze.

Ceremony

After the preparation of the body a period comes to enable relatives to say farewell to the deceased. Occasionally this may be as long as 5 days, but in average a 24 hours viewing period is used for that purpose; in an often liturgical service the family and friends say for the last time good-bye. Then the funeral service is concluded with bringing the deceased to its final destination, transferring the coffin to a crematory or cemetery. Often a mass in memory of the deceased is held in a church of the family's preference a night before or after the viewing of the body.

It has a long tradition that all relatives join the funeral cortege from the funeral house to the final place of disposition, which easily may consist of over 100 persons. They use their own car for that and travel typically 20 to 60Km for this occasion. In average 30 passenger cars are required to transport the members to the final resting place.

SLEEPING BEAUTY [BODY PREPARATION]

"Embalming forms the foundation for the entire funeral-service structure. It is the basis for the sale of profitable merchandise, the guardian of public health, the reason for much of our professional education and our protective legislation."

-From an old embalming text-

According to the funeral director's handbook, embalming is "the art of disinfecting dead bodies and thereby slowing the process of decomposition". The sole purpose of embalming is to present the body in the most pleasant way possible, so that enables friends and family to be better able to accept the death of a loved one and say farewell.

The funerary industry will claim that embalming is a necessary procedure because a corpse represents a potential threat to public health, while in fact this is only the case when the corpse presents a communicable disease or when a natural disaster occurs and the amount of dead bodies is enormous, in which case disease due to the massive decomposition process can occur. The truth is that a corpse represents practically no infectious risk, since it no longer breathes, excretes, or perspires, the primary means by which contagious diseases are spread²³. And according to the U.S. Centers for Disease Control and Canadian Health authorities embalming provides no public health benefit. Hawaii and Ontario even forbid embalming if the person died of certain contagious diseases.

Embalming has been practiced through out history by different cultures in different times, Babylonians, Persians and Syrians preserved their dead by placing them in jars of honey or wax, Aboriginal tribes from the Canary Islands practiced mummification by 900 BC, and the Peruvians did the same one thousand years prior to being conquered by Spain; but maybe the most sophisticated and elaborated practice was the method used by ancient Egyptians 6000 BC to 600 AC. The Egyptians practiced three methods of embalming based upon the wealth of the individual.

The procedure lasted several days and consisted in the removal of the brain and internal organs which were placed in separated burial vases called canopic jars; the body was then immersed in natron (sodium salt) for about 20 to 70 days, afterwards the body was cleansed and set in the sun for dehydration, the last step of the process consisted in wrapping around the body with about 1200 yards of 3 1/4" bandage. This practice had its roots in the religious belief of the "circle of necessity", which consisted on a 3,000 year journey the soul had to make before returning back to the body and live with the gods forever.

The majority of the embalmings in America today are of those of the Christian faith, although in earlier times, embalming was prohibited by the Christian church. The embalming procedure as we know it can be traced as early as the late 1800's, when undertakers used to preserve bodies prior to burial by cooling them with ice, and applying in some occasions embalming solutions only to the surface of the corpse. As recently as the 1950's, embalming was still routinely done at the deceased home using arsenic or mercurial salts, often with family members present. But modern embalming really got its start during the American Civil War, when it was used to allow the return of the soldiers to their hometown for proper burial. Dr. Thomas Holmes saw its commercial potential and began offering embalming to the general public for \$100 USD.²⁴

Embalming is a physically invasive process in which special devices are implanted, and chemicals are injected to the body (a mixture of water and about 37% of formaldehyde), with the intention of retarding the natural process of decomposition for a few days, and give the corpse the appearance of a restful repose. Rather than prevent the body from returning to its natural elements embalming allows the body to decompose by oxidation and dissolution rather than by putrefaction or rotting.

The normal steps to prepare the body consist of:

- Placing the corpse in a proper position on a stainless steel or porcelain table, then the body is washed with a germicide-insecticide-olfactant. The insides of the nose and mouth are swabbed with the solution.
- Rigor mortis (stiffness) is relieved by massage. (Rarely but sometimes, tendons and muscles are cut in order to place the body in a more natural pose if limbs are distorted by disease, e.g., arthritis).
- Massage cream is worked into the face and hands to keep the skin soft and pliable.
- Facial features are set by putting cotton in the nose, eye caps below the eyelids, a mouth former in the mouth (cotton or gauze in the throat to absorb purging fluids). The mouth is then tied shut with wire or sutures. (Glue may be used on the eyelids and lips to keep them closed in an appropriate pose.) Facial hair is shaved if necessary.
- Arterial embalming begins by injecting embalming fluid into an artery while the blood is drained from a nearby vein or from the heart. The two gallons or so needed is usually a mixture of formaldehyde or other chemical and water. In the case of certain cancers, some diabetic conditions, or because of the drugs used prior to death (where body deterioration has already begun), a stronger or "waterless" solution is likely to be used for better body preservation. Chemicals are also injected by syringe into other areas of the body.



- Cavity Embalming, is the second part of the embalming process; in which a trocar -a long, pointed, metal tube attached to a suction hose- is inserted close to the navel. The embalmer uses it to puncture the stomach, bladder, large intestines, and lungs. Gas and fluids are withdrawn before “cavity fluid” (a stronger mix of formaldehyde) is injected into the torso.
- The anus and vagina may be packed with cotton or gauze to prevent seepage if necessary. (A close-fitting plastic garment may also be used).
- Incisions and holes made in the body are sewn closed or filled with trocar “buttons.” The body is washed again and dried.
- Nails are manicured, any missing facial features are molded from wax, head hair is styled, and makeup is used on the face and hands.
- The body is then dressed and placed in the casket (fingers are glued together if necessary).²⁵



SIX FEET UNDER [THE BURIAL]

The word “burial”, also called, internment or inhumation, comes from the Anglo-Saxon word “birgan”, meaning to conceal.

The earliest archaeological evidence for the deliberate treatment of the dead is in the form of ancient burials. Homo neanderthalensis.

Burying in a graveyard has been for centuries the preferred way to bring the last honor. The burial process can be divided into Grave digging, Ornamentation, Decomposition, Clearing of the grave and Burial of the remains.

Grave digging

The corpse, which is normally placed in a coffin, is buried in soil at a depth of between 1 and 2 meters, often in stack with previous buried coffins. This grave is excavated and closed with a shovel. It is estimated that this requires an average soil displacement of 2 m³. Most of the times the grave walls are reinforced with cement or wooden liners, in other cases a metal vault is used to prevent the grave walls from collapsing.

The custom of burying the corpse so deep is an answer to burial space rather than a safety or sanitary reason. It is also a really bad practice regarding sustainability because the matter of which the body is made takes really long to decompose at that ground level due to the lack of air and bacteria.

Ornamentation

To mark the grave, usually a gravestone is placed on top of the grave. This kind of memorial's normally weight around 80 to 115kg a piece²⁶, and are made of sandstone, marble or a mixture of white cement with granulated marble; they are usually brought to the place with a truck over a minimum distance of 400km. For the extraction of this materials heavy explosives are used. The shaping is done using electric tools and hand finishing.

Decomposition

The corpse remains in the grave for at least 10 years to enable disintegration. The local conditions, the amount of formaldehyde and the kind of materials used in the coffin are determining how long the decay will take. Important factors are oxygen, type of the soil and the distance to adjacent graves. In particular the ground water level has a strong influence on the availability of oxygen. Partly this can be improved by drainage and raising ground level by adding soil layers. There is no concern about a particular environmental impact although the quality of the ground water is probably affected. A hint in that direction is the observation that in cemeteries the soils are contaminated with organic matter. It is feasible that traces of that may drain to the surroundings. A more serious emission to soil however is the mercury content of the teeth that will come free and the 3.5 gallons of formaldehyde buried with the body.

Clearing

Eventually, long after expiring the time of grave rest (10 to 15 years), the grave will be exhumed, together with a whole area of graves, by specialized people. Usually this is performed with a shovel that must at least remove the same amount of soil as at digging the grave, hence 2m³. This is certainly conservative as sometimes a whole area is cleared instead of one particular grave (only in public cemeteries). One collects all the arte-facts that are not degraded. The metallic parts, like coffin grips, artificial limbs and other metals, are removed and recycled in the respective recycle systems. In average this amounts up to 50g Zamak and 50g of valuable "orthoscrap" per deceased. These metals are recycled via the usual recycling routes (In several cases recycling does not happen).²⁷

Burial of remains

The other parts like bones, skulls and other organic material are collected and reburied collectively in a bone pit until complete decomposition. For that a shovel digs a cavity, of which 0.5m³ is allocated to one grave, and closes it later. This is seen as the last step of the entire funeral process.

COME TO MY PARTY [THE RITUAL]

A funeral is a ceremony that marks a person's death. Funerary customs comprise complex beliefs and practices used by a culture to remember the dead, express grief, and comfort the living; going from the funeral itself, to various monuments, prayers, and rituals undertaken in their honor. These customs vary widely between cultures, and between religious affiliations within cultures, but nearly all religions include the belief that human beings survive death in some form. For many people, a funeral symbolizes a passage from one life to another, rather than the end of a person's existence. Such a ceremony, which is associated with the completion of one phase of life and the beginning of another, is called a rite of passage.

The word, funeral, comes from the Latin funus, meaning, "torch" or "furnace", because of an ancient belief that light could guide the spirit of the deceased into its final destination. Funeral rites are as old as the human race itself, and one can trace it all the way back to the Shanidar cave in Iraq, where Neanderthal skeletons have been discovered with a characteristic layer of pollen, which suggests that Neanderthals buried the dead with gifts of flowers; it has been interpreted as suggesting that Neanderthals believed in an afterlife, and in any case were aware of their own mortality and were capable of mourning.

Within North America, for most cultural groups and religions, the funeral rituals can be divided into three principal parts:

- A "viewing" or "wake" in which the embalmed body of the deceased person is placed on display inside a coffin. At the viewing, the friends and close relatives greet the more distant relatives and friends of the deceased in a social gathering with little in the way of a ritual. The viewing often takes place on one or two evenings before the funeral. The only prescribed aspects of this gathering are that frequently the attendees sign a book kept by the decedent's survivors to record who attended, and that the attendees are expected to view the deceased corpse inside the coffin.



The decedent's closest friends and relatives who are unable to attend frequently send flowers to the viewing as a token of condolence and support. The viewing typically takes place at a funeral home, which is equipped with gathering rooms where the viewing can be conducted. The viewing may end with a prayer service; in the Catholic funeral, this may include a rosary. The viewing is either "open casket," in which the embalmed body of the deceased has been clothed and treated with cosmetics for display; or "closed casket," in which the coffin is closed. (This step in the mourning process is a part of Christian tradition, but foreign to Judaism; Jewish funerals are held soon after death, and the corpse is never displayed).

- A memorial service, which is sometimes referred to on its own as a funeral and is often officiated by a member of the clergy of the bereaved's religion. In this service, the person officiating, and on occasion the decedent's close friends and relatives, may read eulogies concerning the life of the deceased. Religious rituals, prayers, readings from the Bible or other sacred texts, hymns, and similar rites are often conducted at this service. (In some religious domination's, for example, in Roman Catholic and Anglican, eulogies are prohibited or discouraged during this service).
- A burial service is conducted at the side of the grave, tomb or mausoleum or at the crematorium, at which the corpse is buried or cremated at the conclusion.

Generally speaking, the number of people who are considered obliged to attend each of these three rituals by etiquette decreases at each step. Distant relatives and acquaintances may be called upon to attend the viewing; the decedent's closer relatives and local friends attend the memorial service; if the burial is on a day other than the funeral, only the decedent's closest relatives attend the burial service.

Excluding the open-casket viewing practice, for which the use of formaldehyde is required by all funerary homes in the United States, I don't see a major threat to the environment concerning the

funeral rituals; although research from Dr. Han Remmerswaal at the University of Technology in Delft regarding the lifecycle study between different methods of disposing human remains in the Netherlands, suggest that: "substantial environmental improvement can be achieved by the minimization of the funeral cortege"; this of course regarding the CO2 emissions coming from the combustion of gasoline driven cars. This observation can be perceived both, naïve and interesting, because it challenges the preconceived idea of how things should be. Meaning that in order to undergo any kind of structural change one must question if all parts of the structure are needed. The funeral industry estimates that the cost of a funeral is the third-largest expenditure, after a house and a car, in the life of an ordinary American family.²⁸

¿Ask yourself WHY? ¿ why does it cost so much to die? ¿why does the ceremony takes place in the funerary home and not directly on the resting ground? ¿why do we have the need for memorials that mark our existence? ¿why do we need an open casket? Or even better, ¿ why do we need a casket at all?

As a designer my task consists of pin-pointing and communicating these observations, find better ways to serve the same purpose, or propose a complete new approach that challenges the existing one.

Funeral rituals can be redesigned to help us understand our place in life and in the world, becoming a catalyst for the survivor's spiritual growth, and awakening.

Frederick Turner's on: How Performance and Rituals can generate inner transformation says that in death's rite of passage there is a separation stage from the everyday world, which makes transformation possible, in which the mental construction of the self identity and society weakens or break's down, opening a way for new understanding to build-up and flourish.

Death is one of the most powerful and disruptive realities of our mortal life; a moment of emotional fragility and vulnerability; a time in which we look for comforting words and compassion; it can also be a moment of reflection and introspection, a point to measure and reshape our perception of the world and behavior. Religion knows those facts, and uses the opportunity to reinforce religious beliefs in the community. So it is possible to take advantage of this moment of openness and introduce new values to society, by creating rituals that communicate about coexistence between humans and nature; helping people achieve awareness and peace of mind, instead of fear and alienation.

STRONGER, BIGGER, HEAVIER AND MORE EXPENSIVE [CONTAINER FOR HUMAN REMAINS]

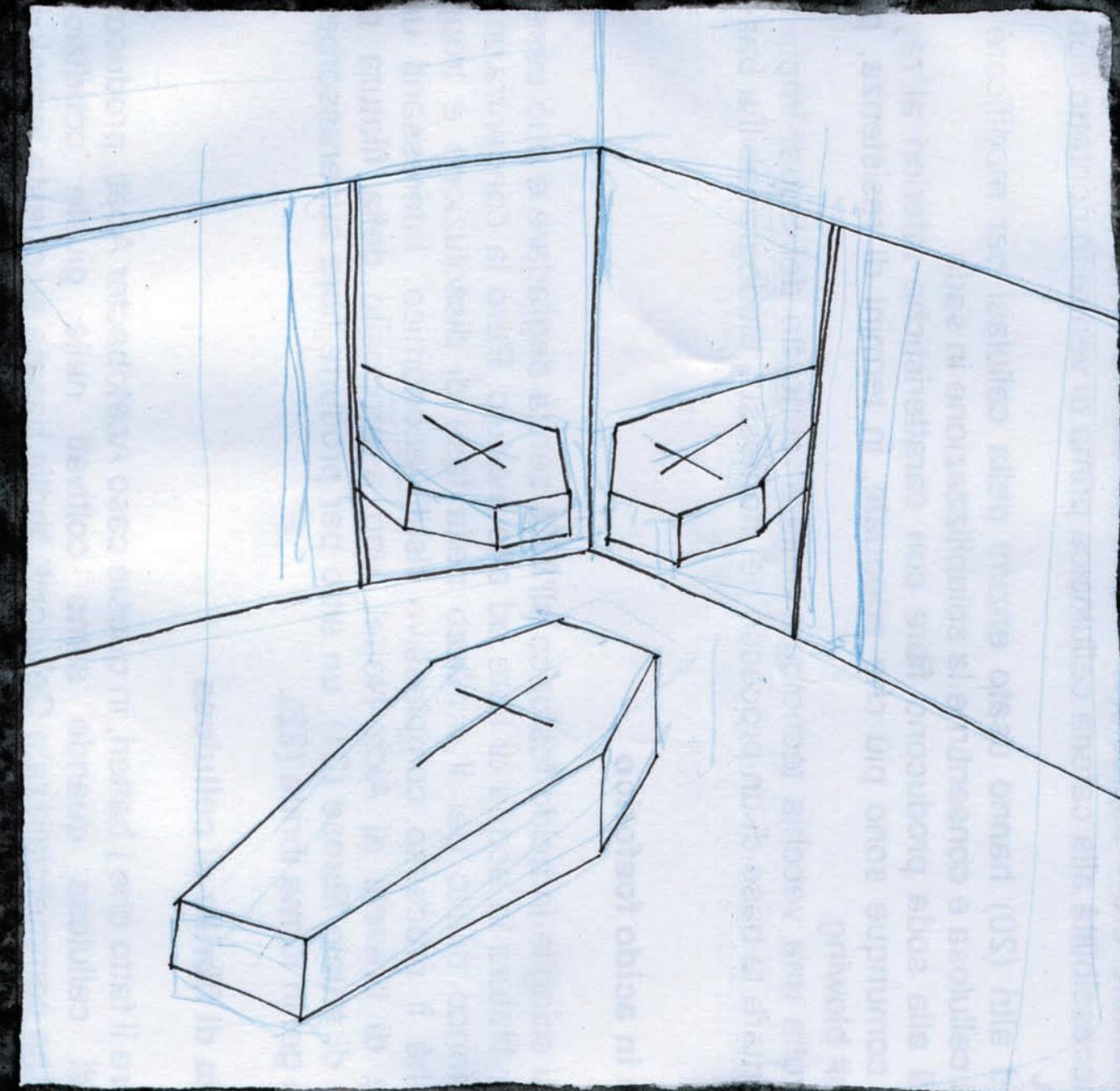
The use of a burial container for everyone is pretty much a new “development” in Western culture, dating back less than two hundred years. Until the eighteenth century, only the rich were buried in coffins. The “casket”, and particularly the one made of metal, is a phenomenon of modern America, 54 unknown in past days and in other parts of the world.²⁹

Many people use the terms coffin and casket interchangeably, and they are basically correct; but to the funeral industry, however, and for the sake of marketability, funeral directors would say they are two different things. A casket they will argue is different from a coffin in that it is a rectangle shape that is not tapered to the body, and that the lid of a casket is usually hinged so it can be opened.

In fact a casket or a coffin, which ever you prefer, is nothing more than a box, a container in which to bury human remains. Caskets are big business and provide the highest profit margin to the funeral director of all the goods and services they provide.

They come in basically one shape that fits all, this being a rectangular volume of 84” long by 28” width and 23” height³⁰. What will make the price differ between models concerns directly to the type of materials and finishing’s used in the making, which can range from the cheapest pressed particle board cover with cloth, normally used only for transportation or cremation purposes, the simple pine box or the more expensive caskets made of mahogany, oak, walnut or cherry hardwood with lacquer finish; the ones made with coated steel represent nearly three-fourths of all caskets sold in the USA³¹, and are measured in gauges, being the most common the ones ranging from 20 to 16-gauge. Steel coffins are welded, spray or electrostatic painted and then burnish-finished. (In some cases the bottom of this kind of caskets is of a smaller gauge and is merely spot-welded). Plastic and fiberglass receptacles are the ones that have the longest life span of all and thankfully they are not very popular in the United States because of the association of plastic with a cheap material. At the end of the price range spectrum we find the ornately bronze or copper sarcophagus, they are normally cast-molded although you can also find welded ones that should be less expensive. 53 There is a recently new trend that seeks for a more environmental alternative. The eco-friendly options offer a range of coffins made of wicker, bamboo, papier-mâché, cardboard and the newest alternative in the market, the Eco-Pod, a biodegradable container that weights only 14 kilos, and is made of 100% recycled steam-pressed paper office, that also uses fabric straps instead of metal hardware.

Other things to consider in the design and environmental impact of caskets are the adornments, metal or plastic hardware used in handles, locks, screws and hinges, the mattress and pillow, neoprene gaskets used for sealing the casket and interior linings normally made of velvet, crepe or taffeta.



When talking about the wholesale versus the retail price for these “none-desirable” items, you immediately understand why the funerary industry is both, a Huge moneymaker, and a really closed-loop business. IFIC, a consumer oriented and non-profit agency publishes an annual report in which it stakes the high markup prices regarding caskets, and advises the general public which is the best deal for their money, and Who are the more honest and fair providers of products and services in this line of business.

IFIC, has found for instance, that the best deal people can get in the USA is the 16-gauge bronze casket wholesaling for \$6,550usd; being the lowest retail price \$6,750, while most of the funeral homes sell the same casket in a range between \$16,375 to \$19,650. The profit made for coffins is enormous; ranging from 199 percent for the really simple: particle-board covered with cloth coffins; to 1,930 percent in the solid Copper caskets; wholesaling for \$1,625usd and being sold even for \$33,000usd.

The vault in the other hand had its origins in the late 1800's, as a response to the problem of grave robbers that stole and sold corpses to medical schools for anatomical dissection; situation that our society does not face anymore, yet vaults and liners are required by almost every cemetery in the USA and Mexico.

A vault is a completely closed container made of concrete, reinforced with steel, and coated with asphalt mix to make it waterproof; there are also vaults made of polypropylene, fiberglass or 10 to 12-gauge steel.

A grave liner is a four-sided reinforced concrete, plastic or fiberglass box with no bottom and a loose-fitting lid that is lowered together with the vault into the grave before the burial ceremony.

Some cultures on another hand, do not allow for the corpse to be placed inside a coffin, like the Zoroastrian people from India that practice an open-air burial, or the Jewish which prefer to wrap the corpse around a white blanket called shroud.

From an environmental and design perspective, the present solutions to the necessity of conceal and contain human remains are not just really polluting and heavy for the environment, but also quite boring, monotonous and without any evolution regarding the form and use of materials. If one is an outsider to our culture, can easily judge by looking at funeral artifacts and cemeteries that American culture is a society of uncreative conformists, devoted to machine-made and mass-produced objects of bad quality and taste; and that its dominant cosmic-vision is an strange mix of primitive superstitions and superficial attitudes towards death that doesn't keep up to its fundamental basis.

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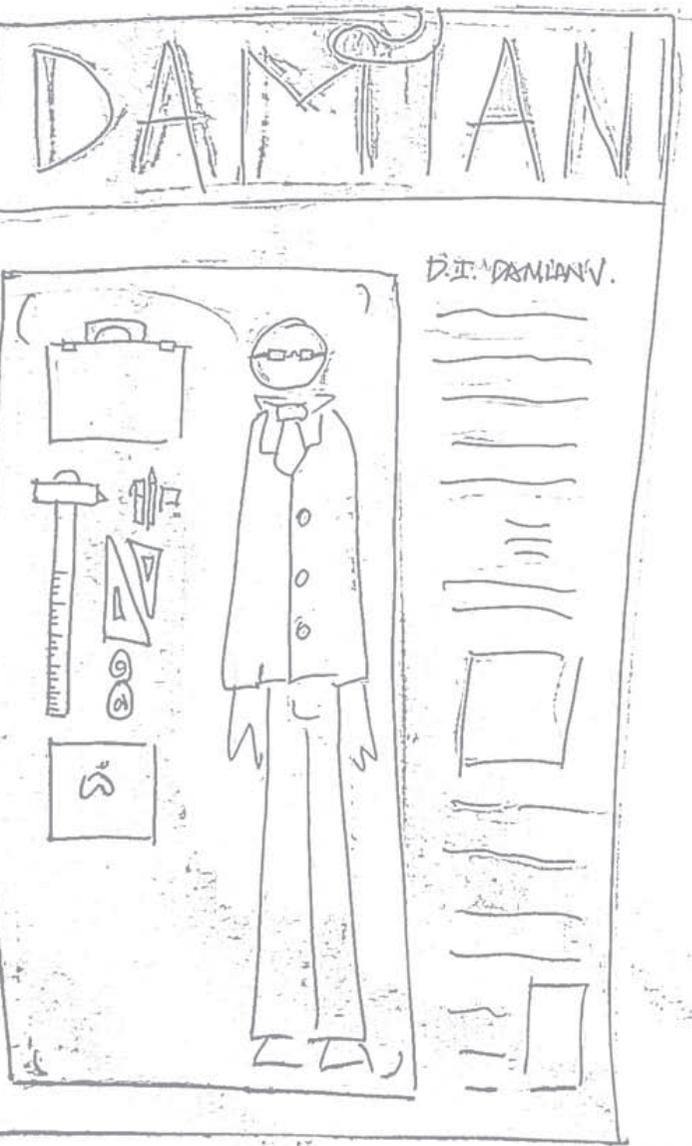
It is absurd to put so much effort in energy and materials to make a brand new coffin that is going to be useful for only a couple of hours and then forgotten and buried for eternity. The thoughts that are behind casket and funerary supplies are those of trying to preserve and keep the body forever, but this is nonsense and impossible to our nature, since we are build of organic matter, so the natural thing to happen after death is to decompose and gracefully merge with the environment. But modern funerary practices try to go (without succeeding) against natural laws, and will sell the idea of an eternal resting place, water and insect proof coffin, a vault that will maintain the corpse "safe" forever, and some other gadgets designed to help prevent the corpse to dissolve into its basic elements.

When talking about a coffin or vault, the word "packaging" always pops to my mind, maybe because of the professional baggage that I carry with me; but if you are able to detach from the emotional connotations this objects are charged with, you would see the same as I do: a throw-away package, a container for human remains that is so badly designed in terms of functionality and sustainability that you can hardly believe nobody has done anything to change it.

Regarding the environmental debate, packaging has received a lot of attention because it generates around one-third of the average household's rubbish and half of all items in the litter stream.³² Most packaging is design for disposal after a single use (the same happens with coffins). This is highly wasteful of resources and energy and a very unsustainable practice in the long run. It also contributes to the volume of solid waste that must be either recycled or sent to a landfill or "nearest cemetery" for disposal. As said earlier, the burial of human remains have the potential to contaminate ground and surface-water by means of heavy metals like mercury and other toxic materials like embalment fluids; also degrading the land and contributing to the global warming effect due to the emission of methane, which is a by-product of organic degradation.

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From an eco-design perspective, the aim of rethinking casket and vault design should be to minimize waste and material use by avoiding unnecessary components, using recycled materials instead of raw one's, designing for degradability, lower the energy and material used for production, cancel the use of metal-based paintings or polymer finishing's, designing for disassemble, designing for safe disposal, reconsider the lifecycle of the coffin (maybe the coffin can have a previous use as a table or cabinet), make it lightweight, and reduce the number of different materials used in the design.



The choice of materials in order to make a casket have a strong impact on the environment at every stage of the product life-cycle, taking into consideration: functional requirements (transportation, logistics, retail, display and use), emotional needs, market acceptability, energy used for transformation of raw materials, cost and manufacturing issues.

One of the main problems when talking about modern coffin design is the fact that they are built for durability and ostentation, when in fact they should be design thinking in in-materiality, impermanence, simplicity and economy of resources.

Over-packaging is also something to consider while thinking in funerary-design. Ask yourself the following question: The body serves us as a container during our entire life; ¿Why isn't good enough to contain us at the moment of death? ¿Why do we need a package to pack a package?

Taking this thought a step back, one can ask the following questions: ¿Why is it needed for a casket to be made of virgin materials? or have neoprene gaskets for "sealing", a pillow so that the deceased can rest while lying dead, external Zamak adornments and handles that are used only once, or expensive linings that will rotten together with thze hole coffin, making it one of the most expensive throw-away packages ever manufactured.

Another way to go would be to re-think the life cycle of the coffin. Making a time line would help to visualize that basically the useful life of this particular object is pretty short in terms of function and really long in terms of environmental damage. In this manner the suggestion would be either to think a way for the coffin to have a previous life and then be re-used as a casket, or to thing in terms of biodegradability and ways in which the environment can benefit from the container, ¿How to design a coffin that would nourish the soil instead of polluting it?

When talking about designing so that the coffin can be recycled, what is meant is that you have to choose materials that can be easily separated or recycle-compatible, making sure that if you use adhesive this are water soluble, avoiding non-recyclable laminates or multi-material films. The best scenario being a design made from only one material that can be biodegradable and eco-friendly.

Degradability is an environmental advantage if the coffin is designated to end up underground, and if you take into account that the corpses coffins are carrying inside are basically organic material which can easily become a nutrient for the soil if the required preparations for composting are arranged in the cemetery; meaning that in order for biological compounds to biodegrade you need to have a resource of oxygen and water so that bacteria and microorganisms can flourish. Which in some graveyards this is not possible because of several reasons: Corpses are buried too deep into the ground, the soil composition makes it too compact for air to come through or because the design of the coffin or vault are air and water-proof.

KNOCK, KNOCK... ¿WHO LIVES HERE? [FINAL DISPOSITION PLACE AND MEMORIALS]

The word cemetery comes from the Greek koimeterion and the Latin coemeterium words for sleeping chamber. A cemetery is basically a space designated to store the remains of human corpses, for the sole purpose of remembrance, and psychological comfort to the thought that no life is lived in vain. On the other hand the concept of a cemetery evolved from the sanitary necessity of early civilizations for separating the dead from the living in order to keep disease from spreading in a community.

The earliest of the modern cemeteries, or what is referred to as a “garden” cemetery, began in Europe in the 1800’s. Such cemeteries are common today, but in past times, graveyards were sometimes hellish and frightening places.

Before the beginning of the Garden cemetery, the dead were buried strictly inside the churchyards. For the rich and notable, burial within the church itself was preferred. For those who could not be buried inside of the church, the churchyard became the next best thing. Even here, one’s social status depended on the section of the ground where you were buried. The most favored sites were those to the east, as close as possible to the church. It was the common belief that in such a location, the dead would be assured the best view of the rising sun on the Day of Judgment. People of lesser distinction were buried on the south side, while the north corner of the graveyard was considered the Devil’s domain, and it was reserved for stillborns, bastards and strangers.

The Churchyards were overcrowded, unhealthy places where bodies and tombstones were placed literally on top of one another, practice that still now remains; due primarily to the limited space of cemetery land, but mostly to the misunderstanding of the decomposition process of the body and the tendency for deep burials.

During the late Middle Ages, the pressure of space finally “exorcized” the Devil from the north side of the churchyard to make way for more burials. It soon became nearly impossible for the churchyards to hold the bodies of the dead, and as towns and cities swelled in population during the 1700’s, a chronic shortage of space began to develop. The first solution to the problem was simply to pack the coffins more closely together. Later on, coffins were stacked again on top one another and the earth rose to the extent that some churchyards rose six meters or more above that of the church floor.

Another solution was to grant only limited occupation of a grave site; however, it actually got to the point that occupancy of a plot was measured in only days, or even hours, before the coffin was removed and another was put in its place.



Nothing much has change from those days; at least in the essence of how things are done. Maybe now the procedure is more “civilized” and socially correct to our time and culture, but the main problems with space and degraded land prevail; probably even more nowadays, when the contact with death is so neglected by society.

Perhaps the only attempt of a revolutionary vision towards the way we deal with death in western society has been the Woodland burial movement, that together with the Natural Death Centre in the UK, has been pushing legislation and people’s preconception of funerary rituals into a “greener” and at least less material manufactured way of disposing human corpses.

Inside cemeteries, and as integral part of their constitution; dating back to primitive ways of memorializing when all came to a couple of rocks on top of a bump of earth, we can find the memorials or “markers”. Edifications built on top of the grave to identify the remains that lay beneath, and can take the form of: Mausoleums, tombs, chapels, sarcophagus and sculptures. These markers are symbols, material representations that communicate into some extent not only the name and timeline of the deceased, but also something about it’s culture, religion, ethnicity, occupation, thoughts on the afterlife, social or political context. A comprehensive study of symbolism and iconography of cemeteries can be found in the work by: Douglas Keister -Stories in stone-, which goes to detail describing the analogies and meanings of the flowers, animals, insects, mythical creatures, and religious symbols found engraved in stone.

On an overall view of the cemetery situation nowadays, one can state that a problem of space can be found in some urban cities around North America, although the spatial problem is more a concern in European cities. The major problem with cemeteries today, involves the degradation of land due to urbanization of the area; pollution due to the chemicals used for embalming, pesticides and herbicides; the routine and archaic tendency of burying the body so deep that it can’t naturally decompose; the saturation of monuments erected (making the land unusable for other purposes); and the fact that burial grounds, although must of the times in the middle of the cities, is not integrated to them.

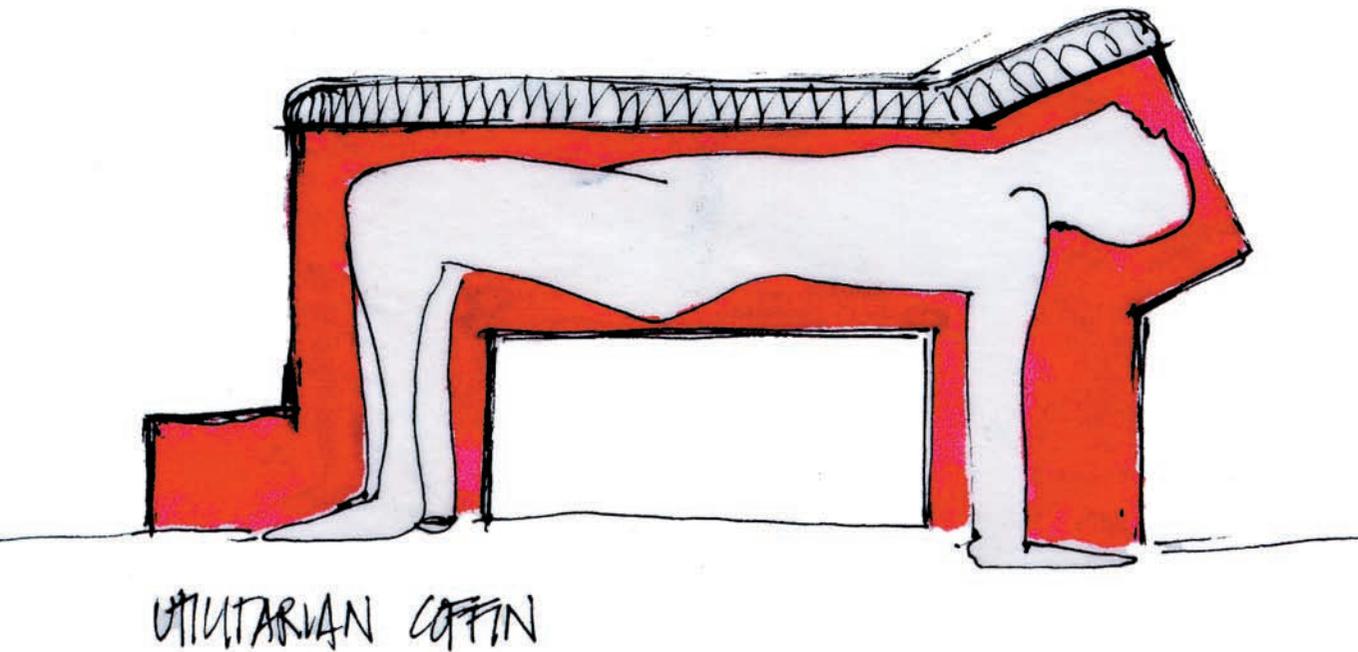


The Woodland burial is, till now, the only alternative of a conscious and nature-including approach to this subject. Searching for a more natural and environmentally friendly way to end a life, by using only shrouds, biodegradable or no coffin at all for internment, replacing the tombstone with a tree-marker, avoiding the use of pesticides and herbicides in the burial ground and shallow grave digging. The aim being to make the site look as much as a park as possible, in order to integrate it to our social and recreational activities; a though that might strike us as odd, but that actually was a common practice at the ends of 1800th America.

I have been inside several cemeteries in my life, and in some occasions I have been there without the intention of attending a funeral or visiting a grave; just out of pure curiosity, and I have to say it is not a pleasant place to visit. It doesn't have to do with the fact that there is dead people beneath the soil, but mostly because of the way these places are planned and landscaped: The lack of trees that provide no shadow, the absence of benches or places to sit on or hang around, there is no water to drink, the pathways are filled with asphalt or concrete and there is rarely anyone to talk with. So I think it is not a problem of what lays underneath, but more likely about what lays above.

IDENTIFYING THE NEEDS AND BUSINESS OPPORTUNITIES

Everyone is going to die. So prove me wrong when saying that death has a huge market for profit. According to the 1997 USA Census of Service Industries, there are about 21,528 funeral homes in the United States; employing 103,258 individuals that provide a service to the 2,423,000 deaths reported in 2003, the most recent reporting period. Three-quarters of those deaths resulted in earth burials and the rest were cremations. Add it all up and the average price for a funeral, as of July 2004, comes to \$6,500usd (not including cemetery costs); generating about \$20 billion dollars in revenue each year.



In a survey conducted by the National Funeral Directors Association (NFDA) targeted to evaluate the consumer choices, decisions and future trends, it was found that the most frequently chosen reason for selecting a funeral home was location (chosen by 78.1% of respondents), followed by reputation (70.8%), previously served family (69.8%), pre-arranged funeral (41%), price (35.6%), recommendation by a friend (23.1%), advertising (10.9%), and recommended by clergy (6.9%).

This gives the idea of how big the business opportunity is, and also how poorly developed in terms of design is the situation for this line of business. Or can you tell me, you choose which club to go partying at night because it is the nearest to your home, or that when people get married they choose a church without even seeing it first.

The thing is that the interior design of all funerary homes is sterile, anonymous and basically non-existing. ¿Why is it that funeral homes look more like a hotel lobby, an old leaving room at your grandmother's house, then a place of introspection, spirituality and reflection? There is a big opportunity for designers and architects to develop scenarios that communicate and evoke these moods. That reflect people's thoughts and preconceptions of after-life; that enhances their beliefs and gives them comfort, reassurance and peace of mind.

Nothing to say about the design of the coffin and memorials, which have not gone to any significant change since the shift from the eight sided box, to a more simple one of six faces.

But the atmosphere is changing, and people are starting to demand more options; to be aware of the environmental consequences of funerary practices, and the best off all, they are willing to be more creative than the funeral directors, and are starting to make their suggestions out-loud.



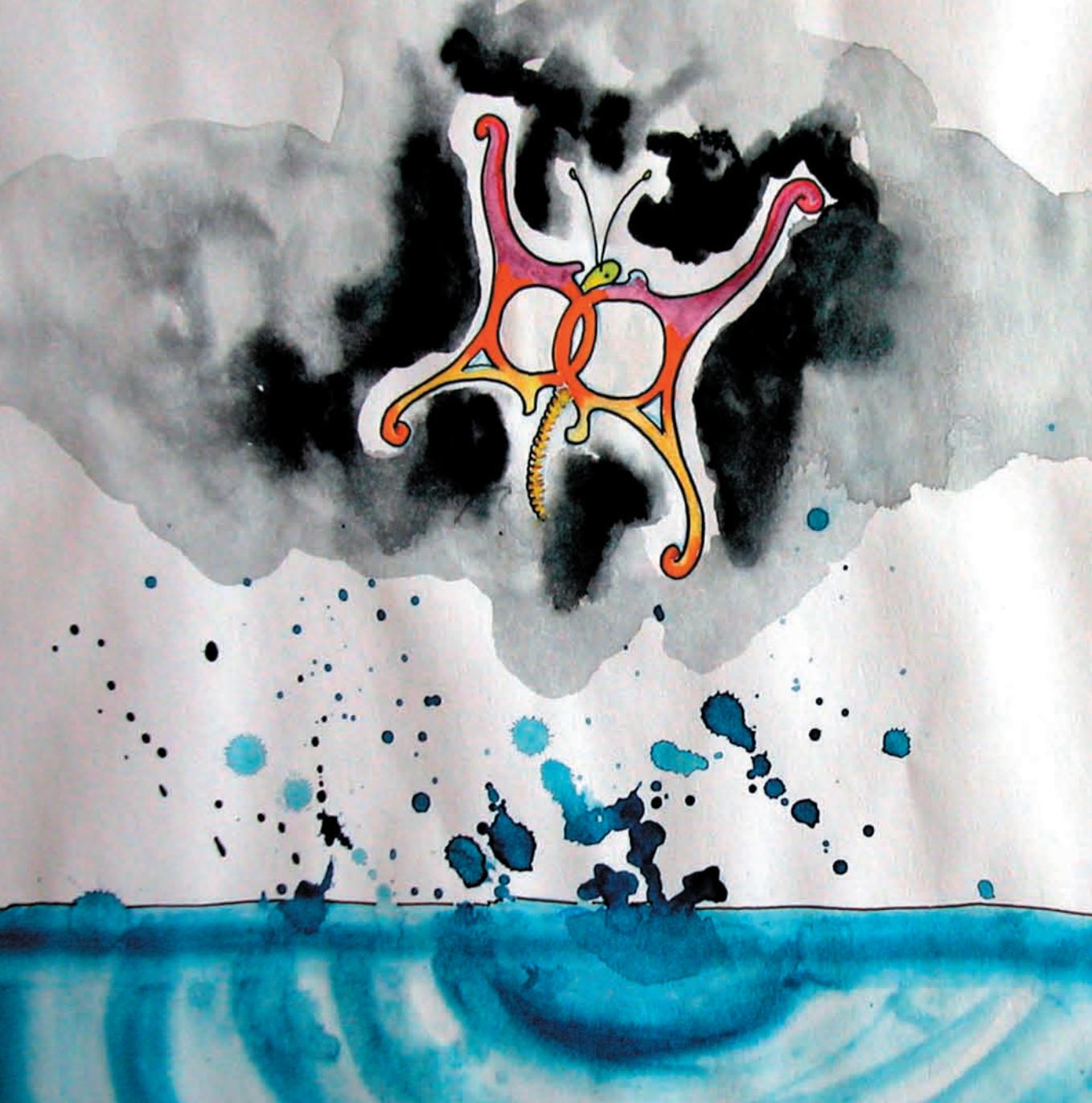
According to the NFDA the consumer funerary trends show the following:

- The Baby Boom generation, which includes 78 million Americans born between 1946 and 1965 and representing 29.4% of the USA population (US Census Bureau, 2004) are unlikely to choose “off-the-shelf” options when it comes to funerals, preferring customized products and services. This segment of the market is looking for new options of disposing and remembering their loved ones; reason why the funerary industry has respond with some creative solutions like: Houston based, Celestis, which launches cremains to space, or Eternal ascent which aims a bit lower and sends a helium balloon to cruise the sky. If you are afraid of heights you can choose to go the other way around and submerge deep into the blue sea; Eternal Reefs will mix your cremains in a concrete sphere and sink it to make artificial coral reefs; and Eternally Yours, will incorporate cremains into artwork; but surely the company that has come with the smartest and most beautiful solution is, LifeGem, which by means of high temperature and tons of pressure is able to transform ashes into diamonds.

- An increase in preplanning and prepayment of funerals.

- More personalized service to suit the differing ideas of what it is a traditional funeral and the desire for various methods of disposition. Recent immigration trends mean funeral directors now serve people with differing funeral customs from all parts of the globe.

- Funeral service consumers are seeking a service that is as unique as the person who died. The idea of personalization has resulted in an explosion of individualized and meaningful services being held. Families want the funeral ceremony to no longer focus on death, but rather the celebration of life. Indicators of this trend are the constant use of memorabilia in the coffin, the shift from gospel or church music to blues or jazz, the use of audio-visuals to make a compilation of the life of the deceased, live performances among others.



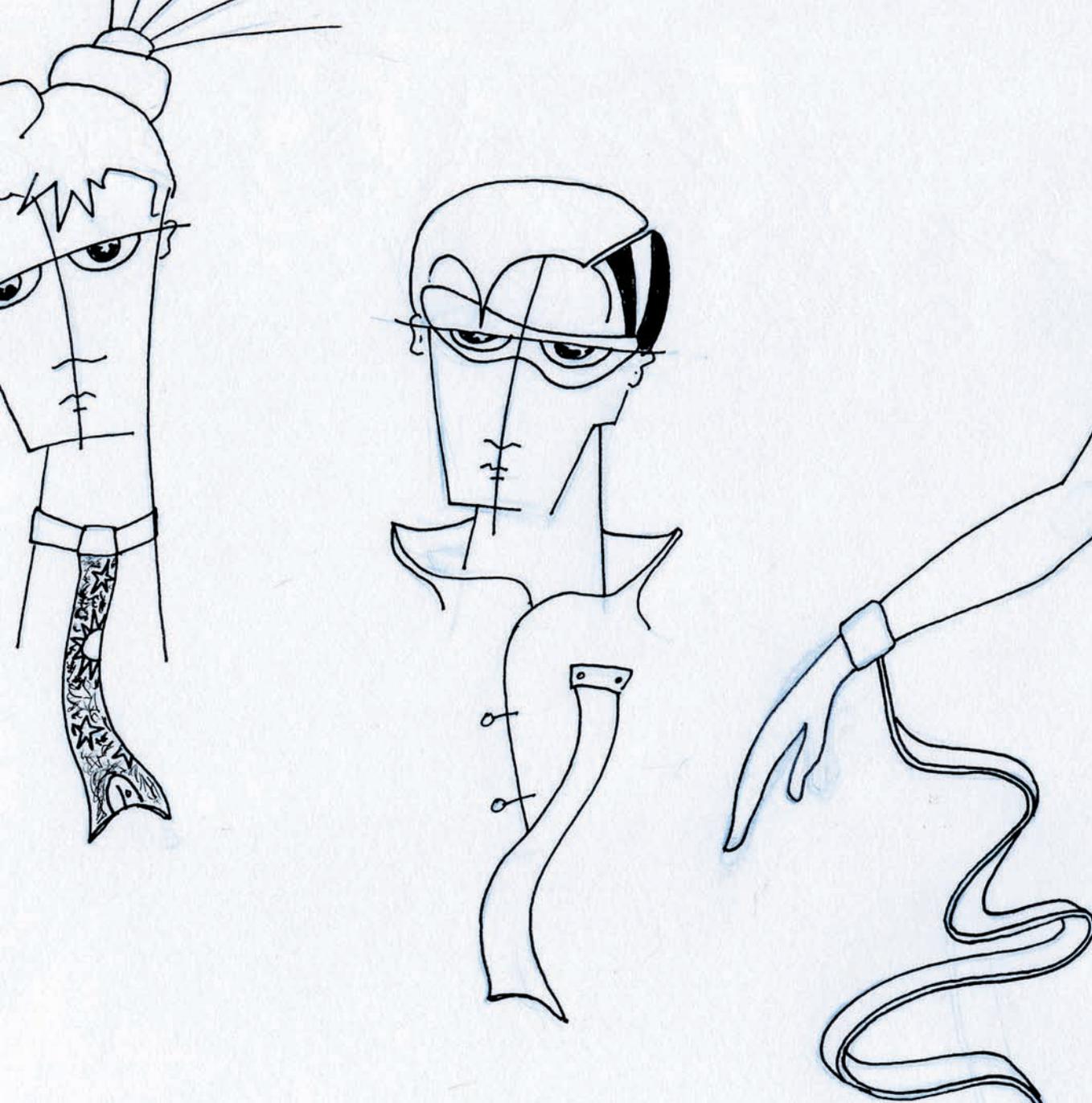
DESIGN PROPOSAL

The concept spins around the idea of a “watermorphosis”. Water is the symbol of abundance, life and transformation; it has connotations with transparency, clarity, flow, absorption, silence and beauty; it can be link with purification, healing and cleansing of the soul (e.g., baptize and holy water). Water is inclusive and non racist, it receives contrary matters, sugar and salt, with equal facility, it becomes permated with all colors, all tastes, and all odors; it becomes universal, tolerant and merciful. But best of all, water mixes the ambivalent images of birth and death; It talks directly about the cycle of life, and it’s the best material to help people understand the link we have with nature and its rhythms. Frozen water, ice, is the only none polluting substance that can delay the process of decomposition, and because of its transparency, allows us to view the body for ritual purposes.

I have chosen watermorphosis to create a scenario in which one can be closer to spirituality at the moment of death; working with words like: ephemeral, impermanent, continuity, transformation, incomplete, flow and movement; designing an atmosphere that shifts from a celebration and understanding of death as a linear and final stage, to a celebration of life, a perception of death as a transitional state of growth.

Re-thinking the whole funeral ceremony and giving to it new and improved meaning; paying attention to the details that are more important and sometimes neglected, like the expression of emotion that people go through in the process of mourning, and which till now no attempts have been made to help improve the quality of this experience. ¿How can design help people mourn better?, let go of their pain, communicate their feelings in a more profound way that just some writings in a signature in a book.





One of these neglected details at funeral ceremonies, are the tears of the mourners. These tears are exteriorizations of feelings and emotions, and they play an important role in the process of letting go. They are a primal reaction, one that is embedded in our nature as a release mechanism for emotional stress. This natural way of dealing with our feelings and emotions must become a tool to ease the mourning process, and to help people become aware of their true feelings and fears.

The **Tear-Catcher**[®], aims into that direction; it is an accessory made of a natural based material that dissolves in the contact with water; designed to hold-on to the mourner's tears, changing or dissolving the pattern imprinted on the surface of this ephemeral object, which can take the form of different interpretations of the cycle of life and death (page 28-25), words of compassion, thoughts on the afterlife, a poem, emotional expressions or whatever suits the person better.

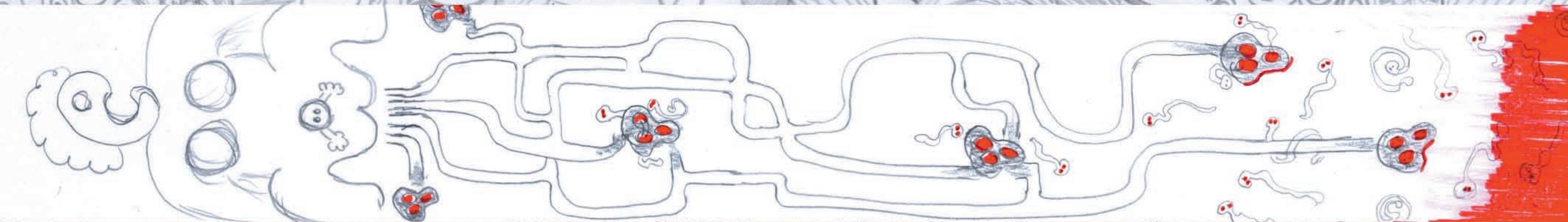
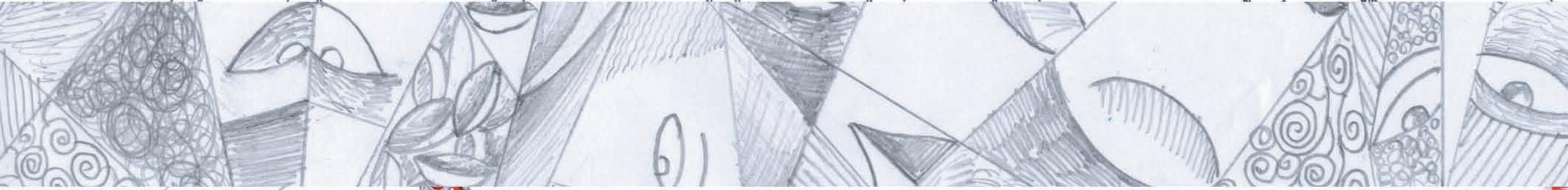


The inspiration for this object came from the image of old black and white mute movies; the farewell scene where you have this men getting on a train, and a beautiful woman staying behind waving a handkerchief to say goodbye. This visual indeed needs no words, because the poetic play between the air, the piece of cloth and the delicate movement of a dancing wrist have created an almost cliché image of a nostalgic memento.

The way to use the Tear-catcher is quite a simple one; first to let the emotions go. When the tears start to come out of your eyes, use the Tear-catcher to capture them. The tears will then begin to dissolve or change the pattern imprinted on the surface of the object. Once the tears are contained in the Tear-catcher, the mourner can approach the Ice-pod and say the last goodbye to the deceased; at this moment the catcher must be placed on the surface of the pod; merging together with the ice; transferring the pattern to the surface of the Ice-pod; sharing and letting go of your tears and emotions.

An alternative way to use the Tear-catcher, and thinking on the signature book used in most of the funerals is, the Book of Tears, which is a solution for those people that prefer to have a physical reminder for the life that expired. Instead of merging the Tear-catcher with the ice in an ephemeral and metaphorical action of letting go, one can opt to collect these emotional tokens and place them inside this book, which is a compilation of biological and human expressions materialized in an object of emotional comfort.

The idea is to have a more individualized, personal and truly sincere imprint of the feelings and meaning that the deceased evoke in the people he knew.



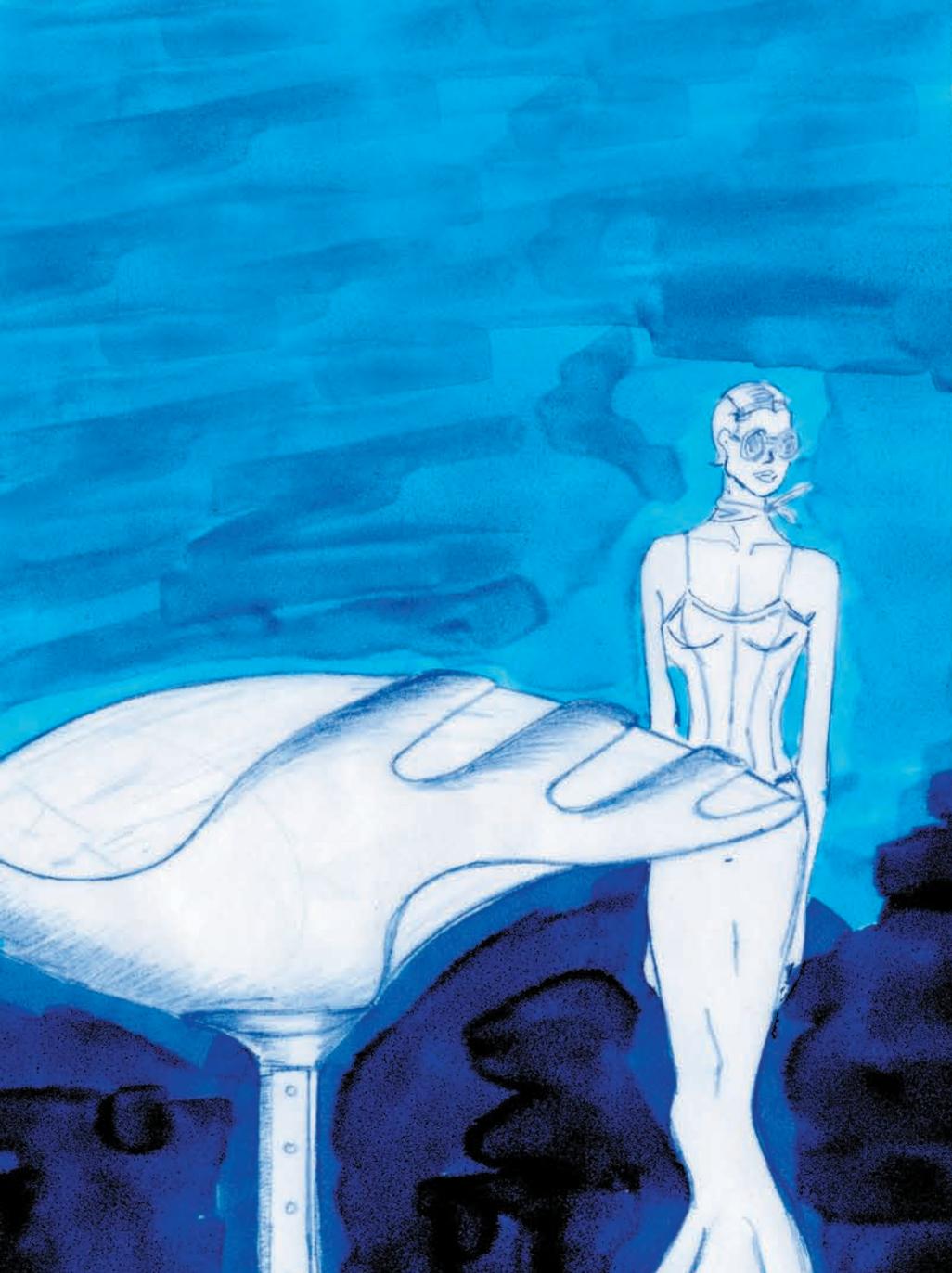


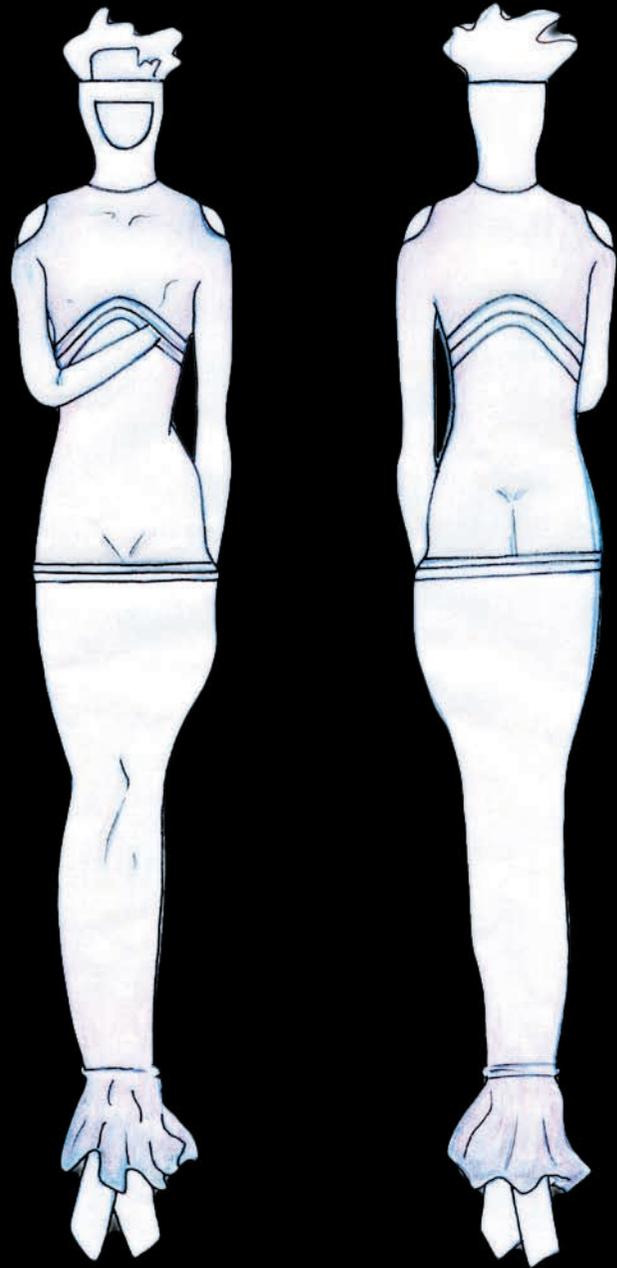


Ice-pod[®], is the name for a container of human remains made completely out of frozen water; it is inspired by the process of metamorphosis of a caterpillar; it has a cocoon like shape that follows the outline of the human body when laid down in a semi-fetal position, thus economizing in material use.

The transparency and opaqueness of ice can be controlled by the purity and quality of water. The container can be lighted to change its colour in order to create a particular mood for the funeral. Specific arrangements and compositions inside the ice can be made in order to personalize the ceremony, or tell a bit more about the deceased life or preferences.

The environmental qualities of this ephemeral container are based upon its building material. Water is one of most abundant materials in our world, 2/3 of the planet's surface to be exact³³, and is one of the most renewable and recyclable materials. It is in a sense ephemeral, and when thinking of it as a constructive material for a container of human remains, it's just the best you can think of: Is not polluting, you use only one building material, it's design for natural degradability, it helps to avoid the use of the chemicals involved in body preservation, its lightweight if you consider that it would dematerialize after a few hours, and its beautiful.





Embrio®, is the name for the funeral suit that dresses the deceased inside the ice-pod. Also inspired by the transformation process of metamorphosis; It is made of 100 percent pure natural latex, which adapts and follows the body shape without the feeling of being trapped or restrained of movement. The material of which the suit is made of will decompose completely together with the corpse after burial. The suit is confectioned in only one piece that suits all sizes, and is both for men and woman. It is opened on the bottom so that the body can enter easily without the need of a zipper or any other kind of closing mechanism. The suit is styled with a look that enhances the design of the ice-pod; showing particular details that explore in a fashionable way, two of the most old costumes regarding the positioning of a dead body: the closed eyes, and the disposition of the hands.

Ancient Greeks had the custom of closing the eyes and mouth of the deceased and place silver coins either inside the mouth or on top of the eye-lids; this practice was also a pragmatic one, due to the fact that sometimes the eyes would not close and something must be placed on top to close them shut. The belief behind this ritual was that the soul of the deceased had to cross a lake in order to get to heaven (Elysium), and the only one who could ferried the soul across was: Charon, who is illustrated like a man in a small boat; the coins were a kind of fee for his service.

I have always wondered why is it that when somebody dies, the first thing people do is close their eyes; I have researched about the subject without finding a substantial answer; maybe is just a symbolic way of bringing closure; or a reflect to avoid the fact that the person has passed away; to pretend he is sleeping. Or, ¿does it have a deeper meaning?.

Is not possible to force people into accepting mortality; it is a process of spiritual growth and awareness, but it is my professional ethical decision not to encourage the elusion of reality. Reason why I searched for a solution that conveyed the psychological need of covering death without reinforcing the false image of a deep sleep.

I have chosen a blindfold approach because it has already a close link with the common practice of covering the body, bringing at the same time deeper connotations of facing fears, trust, changing reality, and when set in this context it reaffirms death in a poetic way.

The other novelty of the design, consist of hand positioning-pockets, strategically located to accommodate the arms in the traditional crossed-arms or fetal position. This feature, together with the blindfold has the practical function of avoiding the use of the synthetic glue used to keep arms, fingers and eyes in a fixed position.

To reaffirm the bound between the mourners and the deceased, an ephemeral object made of ice; that resembles the shape of a rosary, has been designed in order to communicate the idea of transformation, fluidity and impermanence; key-point elements when transmitting the message of a cyclical understanding of death.

This ritual-enhancing object is build to dissolve in the hands of the griever, while he or she gently caresses the object and prays for the soul of the deceased. Hot and cold, life and death will come together in a loving and nostalgic touch. Just as the container and corpse will dematerialize, so will this object, a metaphor for the liquid quality of life.

TECHNICAL REQUIREMENTS

To generate a complete picture for this new method of disposing human remains, one must think about the infrastructure, energy requirements, transportation, manufacturing process, environmental impact, marketing campaign among other considerations. In order to bring this idea as closer to our present reality as possible, I have decided to forget, at least for the time being, about the interior and exterior design of the funerary home and cemetery that would be the optimal environment to integrate the whole scenario for this proposal. I will though, give a visual image of how

the atmosphere of this place would be; but will not go into detail of the construction aspects of it; instead the focus point will be on the essence of the watermorphosis concept; trying to fit it as best as possible to the existing funerary infrastructure, in order to prove that the proposal is feasible, economically profitable, environmentally sound and not as far from reality as people might think.

Only a century ago, ice was hard to come by in most parts of the world. In hotter climates you had to buy your ice from a delivery service, which imported hefty blocks from a colder climate or from an industrial refrigeration plant. The price of ice was relatively steep, but if you wanted to keep your food cold, you didn't have much choice. In the hottest parts of the world, ice was a rare luxury. In an equatorial country, you might live your whole life and never even see a piece of ice.

To convert water into ice using an artificial method; one would need an insulated place that can lower the temperature bellow 0 degree Celsius, this environment can be provided by a refrigerator or a freezer. The basic idea behind a refrigerator/freezer is very simple: It uses the evaporation of a liquid to absorb heat. So basically one needs, energy to pressure and evaporate the liquid, and of course, a liquid. In order to get really low temperatures one would need a liquid that evaporates at a very low temperature, like ammonia that evaporates at -32 degrees Celsius, or other kind of commercial refrigerators like Hydrofluorocarbons (HFC's) or Chlorofluorocarbons (CFC's). The problem with these substances is that they are destroying the ozone layer and contributing to the greenhouse effect. However a greener solution has been developed in Germany that replaces these kind of refrigerants for a mixture of propane and isobutene gases; reducing the amount of energy used up to 38 percent and a promising zero Ozone deplating potential.³⁴

When thinking about the drawbacks of making an ice-pod from an environmental point of view, the first thing that comes to mind, is the consumption of energy needed in order to solidify water. But when looking closer to the already existing mortuary infrastructure, one would notice that freezers are already installed and working at funeral homes, hospitals and morgues. So the proposal is neither far away from reality, or making a bigger energetic impact on the environment than the already existing one. This of course is not an excuse for avoiding the fact the energy consumption levels might be high; that's why the best solution would be to redesign the whole infrastructure in order to close the energetic loop; which is not impossible, and can actually be quite interesting and environmentally sound. In my vision of a perfect scenario regarding the infrastructure needed; I ponder the idea of merging the cemetery to the funeral home; in these way the transportation of the ice-pod and of the funeral cortege, both benefit from it by means of reducing the CO2 emissions from the automobiles used for transportation. But what's even more promising in terms of energy and efficiency of resources is the fact that when the body decomposes it produces Methane gas, which is generally lost, contributing to the global warming effect. This Methane gas has been successfully collected in different landfills and cattle farms, making a good source of profit, reducing air pollution, and generating an alternative source of energy; and can be used as a side solution to power the freezers used to make the ice-pods; creating a closed-looped situation in which the corpse is actually generating it's own energy to produce the coffin.

The second obstacle towards the development of the idea, consist of the container's weight, which will be of approximately 450kg³⁵; making the transportation and normal maneuvers of the pod a bit complicated. The use of special lifts used for handling ice sculptures are probably the best suited for the job. It would also help to shorten the transportation process, so in an ideal scenario the ceremony would take place directly on the final resting place. The form of the pod resembles that of a cocoon, which is one of the most efficient shapes in terms of minimizing the use of material, an important thing to take into consideration in order to lighten the container.

The positive side effect of a container made of a massive block of ice is that will grant the proposal with at least 8 to 12 hours on normal weather conditions before starting to lose it's shape³⁶. Giving enough time for a ceremony. Regarding the manufacture of the ice-pod, the most important thing to consider is the time that it would take a volume of water of this size to freeze. In a minus 10 degrees Celsius environment (the optimal temperature for cast-ice constructions), the pod would turn into ice in about 14 days, which is just too long. The solution to this problem is to make an upper and a lower mold, in order to have prefabricated parts already frozen. These prefabs also facilitate the shore of positioning the body inside the pod, also making it possible to achieve the transparency required; the corpse is then placed on the lower part of the pod, and then positioned in the desired posture; the upper part is then fixed on top, leaving a much smaller space to be filled with water, the solidification process will join the two parts together, reducing the frozen time to 48 hours. Another technique that could be used in ice sculptures to speed-up the freezing time is to use crushed ice mixed with water. It is also necessary to mention that the quality of water has direct influence in the transparency of the pod; so a water purifying plant is needed in order to get the impurities out of the water. A suggestion has been made to base the price range of the ice-pods based on the purity and location from the water. Imagine having your ice-pod made from water blessed from the Pope, an Antarctic glacier or the lake where you used to go fishing with your grandfather. This can actually be a reminder to society of the undergoing pollution to this resource.

In conclusion, the proposal is not only feasible in the long run, but can actually be implemented right away without much structural change to the existing funerary infrastructure. The material and design improvements of having a 100 percent biodegradable solution would have major repercussions to the environment, and can be best visualized in the following charts.

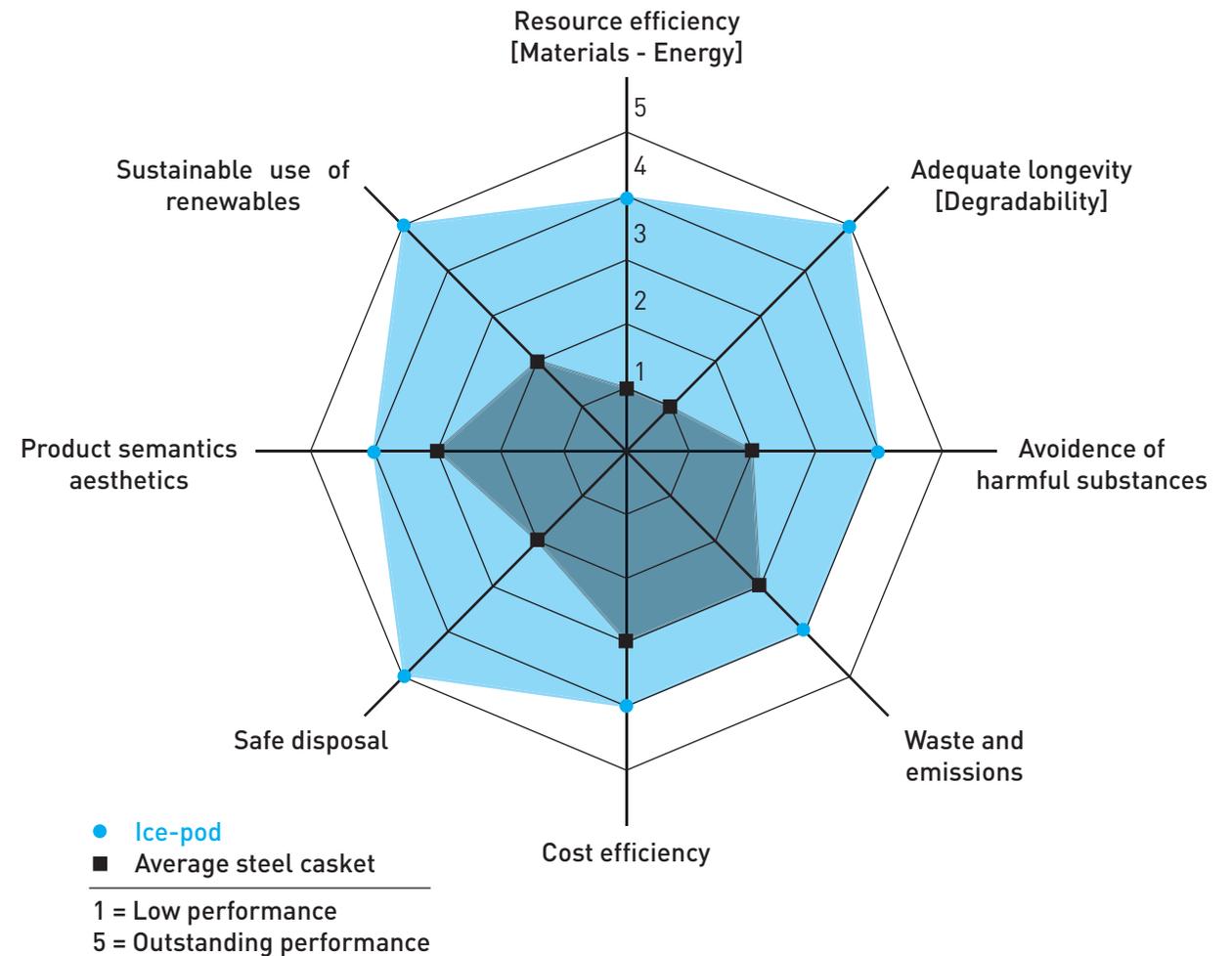
ECO-DESIGN ANALYSIS CHECKLIST: ICE-POD

Assessment:

+ [well met/solved] - [not well met/solved] +/- [in part well, in others, less well met] • [not relevant]

Production Phase	<p>Low material input Low energy input</p> <p>Low scrap rate High productivity/output</p> <p>Low material diversity</p> <p>Low transport intensity Low packaging intensity Minimized appropriation of land area</p> <p>Minimized use of harmful substances</p>	<p>+</p> <p>-</p> <p>+</p> <p>+</p> <p>+</p> <p>+</p> <p>+</p> <p>+/-</p> <p>+</p>
Use / Consumption Phase	<p>Low material input, energy input</p> <p>Minimized appropriation of land area</p> <p>High aesthetic value</p> <p>High multi-functionality</p> <p>High opportunity for repeat use</p> <p>Designed for degradability</p> <p>Minimized use of harmful substances</p>	<p>•</p> <p>+</p> <p>+</p> <p>•</p> <p>+</p> <p>+</p> <p>+</p>
Recycling Phase	<p>Easy disassemblability, separability Low cleaning effort</p> <p>High possibility of disposal Continued use, reuse</p> <p>Recycling of component parts</p> <p>Possibility of collecting and sorting</p> <p>Low material input, energy input</p>	<p>+</p> <p>+</p> <p>+</p> <p>•</p> <p>+</p> <p>•</p> <p>+</p>
Disposal Phase	<p>High compostability, fermentability Positive combustion characteristics</p> <p>Low environmental consequences of landfilling</p> <p>Minimized appropriation of land area</p> <p>Minimized use of harmful substances</p>	<p>+</p> <p>•</p> <p>+</p> <p>+</p> <p>+</p>

SPIDERWEB COMPARISON DIAGRAM: ICE-POD [WATERMORPHOSIS] / AVERAGE STEEL CASSET [BURIAL]



END NOTES

In order to visualize and understand the way our society operates and behaves, it is necessary to look for the only apparent static point in life, the moment of death.

With the firm belief that in order to change the way we live, we must first change the way we die.

As a designer I have always perceived objects as an integral part of a culture's language, they reflect and communicate, they have the ability to summarize different aspects of culture and bring them together in a tangible form. They present an excellent tool for introspection, and a way to visualize the present, the past and possible future of society.

Designer Bruce Mau in his book, *Massive Change*, said: "¿now that we can do anything, what would we do?" Now that we have the possibility, knowledge and comfortable position to manipulate objects as we please, ¿what do we want them to say about our culture? ¿about our time?

¿Can a product represent the pinnacle of mankind's genius if it is made using polluting methods and materials? ¿If it is being socially corrupt?

I started this project thinking of: ¿how to create a more sustainable solution to bury human remains? But in the process I realized that is not a product or a service what I am looking for, it's a mentality. It's about the way we perceive death in our society; about the fear we have to talk about this topic; to plan in advance for it; to get close to the dying; to work with our emotions; to be compassionate; to make a celebration out of life, and to realize that death is the reason why life can be sustained; to understand that in order to live, every cell of our body has to die, to regenerate in order to give continuity to the cycle of life.

The farther the research goes, the bigger the challenge, and the opportunities for knowledge. The doors are open, the funerary industry is searching for new alternatives, but it hasn't even scratched the surface of things; it is too big, too old and too blind to see their business with fresh eyes.

But apparently is not deaf, so there is a chance to start building up the scenario for the future; and it's in the hands of society to dream about it, and our job to make it real.

To change the way we die, it's not an easy task; it's not only about making a nicer coffin, even if it is a thousand ways better in terms of design and sustainability than the previous one. To challenge people's perception about death and their mortality it's not about an end solution; but about the mental process of transformation one undergoes when starting to think about our own impermanence and fragility. It is not my intention to make people believe my proposal is the best and more beautiful solution to the problem; that the ritual involved in watermorphosis will fit everyone's emotional and spiritual needs. My quest is a rather humble one: to make you aware about the possibilities, to question you, to tickle you, to challenge you into thinking about the moment of your death; and if you let me, inspire you to come with the solution that fits the best for your personal needs.

Change the end and you will change the story.

SKETCH THE FUTURE

SKETCH THE FUTURE

08

07

change the end... and you will change the story



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