MASTER

SELF|CENTREd
architectural harmonies parallel to the psyche

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ENTREd

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SELF|CENTRED
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When I started out this project, I had only a vague concept of what the end product should be. The subject I initially chose was vast: to find the connection between the inner space of the psyche and the architectural expression as its reflection, and also, the reverse of this connection—the role of architectural form in the investigation and understanding of the self, the assessment of the psyche. I wondered if it would be possible for architectural expression to induce that moment of absolute stillness and tension relief within the self, and if so, how could this be done.

This project is a quest of that particular architectural expression that would induce, capture and reflect this moment, so that it could be revisited again and again.
Therefore, in order to accomplish this, I decided to look into both architectural expression and the depths of the psyche, to the extent where connections between the psychological and architectural spaces can be made effortlessly.

The studio within which I started out this project - Xtra Small - was concerned with rescaling health-care facilities and bringing them closer to the human scale - of both perception and use - therefore, my concern with the scale of the human psyche and the architectural frame that would complement it, was welcomed by the studio tutor, prof. ir. Bas Molenaar.

I see this project as a personal exercise of understanding the psychological factors involved in the development of architectural design - much like a crystal prism that disperses the ray of light into a spectrum of colours, and in doing so, exposing the elements that make it shine so brightly. The result of this project should be viewed in this same spirit, as a process of dispersion and identification of the elements that make up what we perceive as the psychological scale for architecture.

It is my hope that this exercise is merely a starting point to which more directions and developments can be added later on. It could be the beginning of an open discussion on the relevance of psychology within architecture, and the reverse of this relation. In a certain sense, this would be most appropriate because even in psychology, most assessments of psychological structures are not so much confined to a strict and exhaustive definition, but rather exposed through sometimes comprehensive descriptions of needs, symptoms and signs, most of which are mainly identified through dialogue.
As for the title, I feel I owe an explanation as to why such a seemingly strange choice of words. **Self-centred** means *fixed, stationary*, but also, in relation to a person, 'engrossed in the self, with little regard for others'*¹, but seen as my goal is to instate a spirit of re-consideration for the assessment of the self within an architectural frame, and the means to achieve it. I find it also opportune to reconsider the connotations of this expression on this new background.

In his sermon on "Conquering Self-Centeredness", Martin Luther King Jr. sustains the Christian principle that happiness can be only attained through rising above the self and extending the ego into objectively meaningful channels. And self-centeredness is one with being selfish and egocentric, all of which instances will soon become the source of grief and disillusionment of the spirit. It is deemed to be the attribute of childishness and its disruptive effects could be of tragic consequences [i.e. a tragic sense of persecution when one might feel that the whole of the universe stands against them], and the way to overcome this perilous situation is to lose one's ego in some great cause, some great loyalty:

"[...] he who discovers, somehow that he stands where he stands because of the forces of history and because of other individuals; he who discovers that he stands where he stands because of the grace of God, finds himself. He loses himself in that something, but later finds himself, and this is the way, it seems to me, to the integrated personality."²

This particular view is, of course, part of the religious background on which cultural and architectural traditions developed in Europe, throughout many centuries. For this reason, it is very difficult to ignore. We can, however, reconsider it within a larger context: in the world of psychotherapy [and soul therapy more accurately] a distinction is made between **self-centeredness**, ego-

*centrism* and **selfishness**. Self-centeredness is seen as an important tool in acknowledging the world around us, and in establishing meaningful relationships with others:

"When we are centred upon the highest of within ourselves, we can see the highest within our beloved. Human selfishness, on the other hand, takes us away from that."³

Such attitudes towards acknowledging and understanding of the self are hardly new. Carl Jung was one of the first scholars who undertook the study of the psyche and introduced the idea of searching for the self as a process of understanding and gathering knowledge of both the inner and the outer world. He named this process *individuation*⁴ and pointed out that it could take a life-time of search before we reach the self. With these nuances in mind, and setting the negative connotations aside, I find that M. Luther-King's advice runs in the same category.

This is why I consider "**SELF|CENTRED**" as an opportunity for bringing focus on the importance of understanding the architectural and psychological spaces, and their connections, from this new perspective.

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¹ Source: online etymology dictionary www.etymonline.com
² From "Papers of Martin Luther King Jr.; vol. IV - Symbol of the Movement January 1959 - December 1960, as published on www.stanford.edu/
³ "The Difference Between Self-centeredness and Selfishness", by Joyce and Barry Vissell, from the "Divine Selfishness" article on www.support4change.com/
⁴ See annex item A1
diagramatic representation of the project's structure and storyline
PROJECT DEVELOPMENT

The main part of this project is represented by the theoretical research on the psychological functions of architecture, and it is concretised in the present dissertation. In the pages to follow I will identify these functions and attempt to establish them as the connections between the spatial frames of the psyche and architectural expressions.

Further more, three case studies will be undertaken in order to connect these theoretical findings to particular design concepts. This part will also take on the role of connecting the theoretical considerations with the design component of the project.

The final step of the project is to concretise and illustrate the functions discussed throughout the dissertation into an architectural object. The tasks of the design process are to illustrate the theory that led up to it, to provide an experience of the psychological functions of architectural expression and to enable the appropriation of these concepts, regardless of the prospective visitor's level of awareness.
CONCEPT

SELF|CENTRED
- architectural harmonies parallel to the psyche

"The Science of Architecture, followed out to its full extent, is one of the noblest of those which have reference only to the creations of human minds. It is not merely a science of the rule and compass, it does not consist only in the observation of just rule, or of fair proportion: it is, or ought to be, a science of feeling more than of rule, a ministry to the mind, more than to the eye. If we consider how much less the beauty and majesty of a building depend upon its pleasing certain prejudices of the eye, than upon its rousing certain trains of meditation in the mind, it will show in a moment how many intricate questions of feeling are involved in the raising of an edifice; it will convince us of the truth of a proposition, which might at first have appeared startling, that no man can be an architect, who is not a metaphysician."5

To continue with the metaphor of dispersing light, the psychological functions of architectural expression are, in this sense, similar to the colours of the spectrum. Not only do they come together to create what we perceive as 'sensible' architecture — expression of the human needs and desires — but much like the colours who can be perceived when light is reflected, the psychological functions are activated when the human element is present within the architectural frame, to perceive and validate them.

The starting point for the project concept — both in theory and design — was the experience of various architectural frames through movement and perception. This notion is recurrent in the key points of the development process — it has been the trigger for choosing this line of theoretical investigation after visiting the Interfacing Space exhibit, it is a significant part of one of the case studies I chose for the illustration of how the psychological functions of architectural expression can be experienced, and it is also the main 'function' for the architectural program of the design.

5 John Ruskin, 'The Poetry of Architecture' — from Project Gutenberg
http://www.osterholztentuils.nl/projects/InterfacingSpace.html
**INTENT**

The project intends to emphasise how these psychological functions are articulated through architectural expression and bring awareness to the visitor on the influence such an architectural frame has on the psyche.

This will be achieved through the use of the parameters specific to each psychological function in the design of an exhibit-pavilion. Its main concept will be to express the psychological functions through the use of spatial planning, movement, light, materials, texture, views and context, with the main focus being on the individual experience of the architectural frame.

**STRATEGY**

The main functions of the building will be determined by the six psychological functions, as listed below, and their spatial parameters.

The functions are as follows:

For the ID:
- Protection, Privacy and Shelter [F1]
- Identity and Positioning in the world [F2]

For the Superego:
- Order and Control [F3]
- Memory Vessel [F4]

For the Ego:
- Compliance/Deviation Indicator [F5]
- Abstract Conceptualisation indicator [F6]

Once the functions were validated through the three case studies, the abstract types that would be associated with the functions could be implemented in the design of a showcase-pavilion - where these psychological aspects of architectural expression could be materialized in a simple, yet eloquent structure, much like in the manner of haiku poetry-writing.
concept sketches: visitors’ trajectory
plan view and sectional view of the pavilion and its premises;
OVERVIEW

The seed of this project was planted while visiting an art installation at the Overslaag gallery in Eindhoven, entitled 'Interfacing Space' (2006), by Wouter Osterholt & Elke Uitenhuis. The installation was a labyrinth of spatial concepts, emphasizing the quality of the spatial frame and the user interaction with it, rather than materialization or details - a cross between sculpture and performance art where the viewer would be at the same time the performer, and the sculpture would be viewed from inside, making the viewer aware of the relation he has with the sample-spaces in the labyrinth-like installation.

This experience of spatial instances brought to my attention the subtle influence space has on the psyche and how it can resonate with the psychological space of an individual. It inspired me to consider the potential of space as more than a cultural and technological expression, but also as an expression of the self, of the particularities of one's psyche.

It also prompted me with various questions on whether there are any connections between the spaces we create and use and the self, the particular structure of one's psyche, and if these connections can be identified in the architectural frame. Although I was able to answer a few questions intuitively, it was necessary for me to go much further, and investigate this relation.

The literature I turned to for more insight varied from texts on human psychology (neuropsychology, evolutionary psychology, psychological dysfunctions) and psychoanalysis to philosophy and phenomenology of space, and architectural theory and history. This part of my research created a theoretical base on which the relationship between the self and the architectural frame could be analysed.

As the research went further into the subject-object relation, it slowly transformed into a theoretical platform for determining and defining the psychological functions of the architectural frame and their subsequent architectural expressions.
defining a method - diagramatic representation of the project structure
METHOD

This project is as much theoretical as it is a design question: faced with considering more than functional demands in an architectural design, one looks for a concept outside the specifications of the building brief. Where can an architect turn to? Now that the technology at hand provides us with endless possibilities of expression, what would be the ground for choosing the direction for concept development?

The relation between the psychological and the architectural space can provide a sensible filter for these options, and this filter can be instrumentalized for a more systematic approach.

During the preliminary research I have found confirmation of the fact that we can talk about a deterministic relation, and that there is evidence of spatial dispositions to be considered as mental projections - whether we talk about the organization of a house, or a city, in relation to the environmental levels or the materialization choices. Moving further on from these possible parallels, the issue of agency and intent came forward and steered me towards identifying and exploring the psychological functions of architecture.

Is the architect/designer a conscious or unconscious agent of the self? Is there a particular design that can be considered as a projection of the self? What kind of architectural types or spatial patterns can be defined as the direct results of these projections?

If there were a certain method to the determinism between the psyche and the architectural structures we produce, what would it be? How is it structured, and what are its mechanisms?

All these questions were subsumed to the main question of the research: how are our basic psychological needs embodied in the architectural expressions we create?

The hypothesis is that we can speak of psychological functions in architecture, equivalent in their influence on the design as any other category of functions considered in any given program, and that these functions generate specific architectural types and spatial patterns.

The emerging theory was tested through design research of chosen case studies, and illustrated through the design of a themed pavilion - “Architectural Harmonies Parallel to the Psyche”.

The case studies provided the architectural expressions that could be correlated with the psychological functions, mainly due to either their explicit representation of the self, or psychological space – or their programmatic intent to focus on psychological impact.

Theoretical finds on the psychological functions were filtered through the case studies and observations made on what could be considered as spatial patterns or types for the psychological functions.

The resulting types provided the instruments for the design phase, where the concepts, functions and architectural expressions came together to illustrate the thesis of this project.

The subject of this project provided a great opportunity for investigating the less obvious details of architectural design and for understanding the underlining causality for the choices and decisions we make in terms of concept, composition and architectural design. My aim is to define and establish a method to sustain my future design concepts, something to justify the design decisions so that they will closely relate to the end user of the architectural product.
The aesthetic gratification that results from this moment - the recognition of the self in the other, the self as part of, at one with the whole - induces the 'nirvana principle' [...]

The self is the 'aware subject', the thing that thinks feels and wills - above all it is the subject as one experiences as one's self. Jung's theory was that this knowledge of the self was a journey of the psyche.

The Psyche Mind includes physical and non-physical aspects, the brain, consciousness, the unconscious, the subconscious and the soul. It encompasses all aspects of rationality - understanding, intellect, conception, abstraction, and reasoning, as well as the cognitive skill of perception and insight.

From a psychodynamic point of view it can be described in terms of dynamic processes - the mental activities of response and adaptation, connected together in sequences.

The conclusion that can be drawn from the above definitions is that one's self is the knowledge and experience of one's mind/psyche and the process of individuation is the very process of acquiring that knowledge and experience.

The importance given to the 'narcissistic' dimension within ourselves lead me to consider the self-oriented drive significant enough to be represented and representative in our cultural artefacts, architecture included. It is not simply a matter of eccentricity or deviation from the norm, but rather an inherent fact of the human psyche, likely to have permeated the creational activities of man.

According to S. Freud, the structure of the mind/psyche can be broken down into layers, 'divisions' and drives. The layers he identified are the conscious, the subconscious (or preconscious) and the unconscious, and they provide different levels of activity for the 'divisions'. These layers are differentiated through the degree of cognition the 'self' can exercise on them.

In the theories of evolutionary psychology, the belief is that psychological functions, or psychodynamic processes, have formed a certain pattern of behaviour [action and reaction] to ensure the survival of the individual - in terms of protection and perpetuation of the species.

Psychoanalysts have grouped these psychodynamic processes in psychological divisions, based on the type of trigger/stimuli for a particular action/reaction: ID, Ego and Superego. The psychodynamic processes themselves are far too varied and far too many to be tackled individually, but their grouping in divisions of the psyche can offer a clear picture of what their common characteristics are. Their description is enough to provide the key for identifying the base categories of psychological functions in architecture. What I mean with this is that looking at the description of the divisions of the psyche, we can easily relate their main 'function' with 'reasons' for certain architectural concepts:

The Superego activates in the convergence area of the preconscious and conscious, and it represents the internal symbolization of authority and cultural regulations, acting as a 'conscience'. The external symbolization of the same authority and cultural regulation, as recognized by the individual can be in a person, group of people, laws and the architectural frame that represents them.

From the three categories of external representation listed above, the architectural frame has the most sub-
stantial and tangible/material and accessible form. We can define a culture and society through its architectural expressions/endeavours; we can understand the social dynamic and the artistic/spiritual sensibilities of that culture. When we talk about the representative function of architecture, the 'architecture of power' or monumental edifices, it is this division of the psyche that demands and makes use of such an architecture.

Opposite the Superego is the ID – the primal, instinctual division- it activates in the realm of subconscious, and is responsible for the basic drives. Its prime motive is self-survival and pursuing whatever necessary to accomplish that goal. Basically, the ID is coordinated by three main and powerful drives - the death drive, the pleasurable instinct and the narcissistic drive. They make up the base of our survival as a species and they rule on our actions throughout our lives.

In his book Camouflage, Neil Leach draws a very interesting connection between the death drive and the pleasurable instinct, or the Eros. According to him, based on Herbert Marause's own observations on the subject matter, the link between Eros and Thanatos is the myth of Narcissus, meaning that orienting the desire of gratification, derived from the pleasurable instinct, towards the self will also feed the death drive, including the need for its own sublimation, enabling thus an enhancement in the level of perception of the self, as well as of the environment in which the self is perceived.

When we talk about survival we think of basic biological needs such as food, water, warmth and procreation, and these needs triggered humanity's architectural endeavour to begin with: building the first shelter, the archetypal hut was for no other reason than providing shelter next to food and water supplies where procreation was favoured. The basic need for protection against the elements, in intimate moments or for isolating a certain space of potentially harmful or sacred character has generated the beginnings of what we consider today architecture.

Balancing the two opposites is the Ego. It is the mediator between primitive drives, morals and reality, and because its task is so demanding – Freud noted – it is also the one division that can elaborate complex psychological defence mechanisms, such as denial, displacement, projection, rationalization, fantasy, etc. It seems this division has the hardest and most complex job of all divisions: controlling the instincts and obeying the collective rules, providing satisfaction and safety and tapping into the unknown, finding the way out from conflicting situations.

This degree of complexity in dealing with such situations has led to a degree of complexity in how we imagine and build our world. For all intents and purposes, the Ego is the one division that brings the focus onto the Self as a particular combination of character traits, need and affinities. It is the individualizing element between the common denominator of instinctual human behaviour and the depersonalised and abstract sphere of social rules, and therefore it can generate a large variety of interpretations and representations for cultural artefacts: objects, tools, artworks, texts, music, rituals, dress codes/clothes/fashion and architectural articulation.

Since our 'divisions' of the psyche are 'directly responsible' for our actions (and reactions) it is correct to assume they also represent categories of interface with the outer world, and most likely the sources of the categories of psychological functions we concretize in architectural structures.

Therefore, the following psychological functions were defined, corresponding to the division of the psyche, in order to illustrate specific spatial patterns recurrent throughout the long history of architectural articulation.
THE FUNCTIONS

The starting point for this identification of psychological functions in architectural expression was the consideration of basic human needs, on an individual level: survival and affirmation of existence.

Protection, Privacy and Shelter [F1]
Identity and Positioning in the world [F2]

Next were considered the needs of continuity and purpose within a larger scheme of things, inherent to the Superego. These can be identified within the social and cultural organization of various societies, the continuity of traditions and the structure of collective authority; therefore the psychological functions considered are concerned with the representation of authority and the preservation of the past.

Order and Control [F3]
Memory Vessel [F4]

Once the survival needs and the needs to have and understand the context we find ourselves in are addressed, the needs for individualization needs come forth. They can be recognized in the form of likes, dislikes, aspirations and insecurities and our responses to them belong both to the intellect and the affect, and contribute to the make-up of our personal identities. With this in mind, the focus is on the ability of architecture to give expression to both our affective and intellectual choices and abilities.

Compliance/Deviation Indicator [F5]
Abstract Conceptualisation indicator [F6]

Further on, each function will be explained and discussed in terms of name - naming the psychological function and possibly investigating the linguistic fundament of the given name; domain - indicating its domain of validity; parameters - identifying the elements playing a significant role in the function; equation - the relation between parameters, and finally, representation - the architectural type(s) the function generates.

conceptual icons for the psychological functions
The Latin word *aegis* can subsume all the aspects of the psychological needs that make this function necessary: it can signify patronage, support or sanctuary. The root of the word is the Greek word for shield – *aigis* and its latter use has generated various meaning, all strictly related to its root function of protection – especially in the Latin languages.

The psychological function responds to the basic need of shelter and protection, concurrent with the instincts of survival (individual and of the species), but occurring at an individual, close level.

Here, the shelter is the "second skin", an individual protection device that allows a separation of the body from the surrounding environment, in times of vulnerability.

The parameters it controls are **scale** and **centrality**: the shelter needs to be scaled to an appropriable size for the human proportions, while the volume orientation is defined by either a vertical or horizontal axis. Centrality is defined by the presence of the human being within that space, through the validation of the axis (the use of the shelter dictates the choice of vertical or horizontal axis, but it only becomes expressed when the shelter is used by the human).

The architectural type most easily associated with this primordial function is the **archetypal hut** – a basic shaped shelter, either circular or rectangular, with a vertical or horizontal axis of structure.

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"... a mediation between the intimate sensation of their own bodies and the sense of the great unexplored world around. [...] Not as a shelter against the weather; but as a volume which he could interpret in terms of his body and which yet was an exposition of the paradisal plan, and therefore established him at the centre of it."^a

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^a Joseph Rykwert, *On Adam's House in Paradise*
The types to subscribe to this basic concept can be easily identified beginning with Neolithic settlements, where shelters were built either in a circular or rectangular shape. Variations of these basic plans can also be observed where the square is elongated, and sometimes combined with circular elements, creating oval or semi-oval plans of enclosure.

These basic shapes of the floor plans are closely related to the individual's understanding of orientation using the self as the centre: in front, back, left, right – and the spatial translation reflects these orientation references in the rectangular shape, while the circular shape emphasizes the human presence as its centre.

Such matters of orientation and position are addressed in the design of shelters almost for as long as the need for shelter and protection, therefore it is important to consider them together, as primal examples of psychological needs reflected in spatial structures. The following function is concerned with precisely the issue of positioning and its implications.

archaeological traces and reconstructions of neolithic dwellings: circular dwelling foundations in Filicudi, Italy (left); neolithic settlement in Khirikita, Crete (first - top); neolithic megaron-type dwelling, Boian culture, Romania (second - top); neolithic house in Athens, Greece (third - top)
Identity and Positioning in the world – *Id Posit Sinere*

The origins of the words identity and position lie in the Latin nouns *identitas* and *positionem*. *Identitas* – ‘sameness, same as’ – comes from the abstraction of *identidem*, which means over and over (*idem et idem*), where *idem* comes from *id* – meaning ‘it, that one’, where *positionem* – the act of placing, position, affirmation – comes from the root *ponere*, which means ‘to put, to place’. Together, they designate the function of affirmation of existence, of indicating the belonging to a place, of being part of (the same as) a larger context – *id posit sinere* – ‘it, put and left’.

Affirmation of existence and identifying the character of the existence are basic psychological needs that determine the course of future progress – individual and collective. They provide the foundations for later, more complex psychological needs, and express the basic drive of seeking ‘recognition of the self in the other’, of common ground or possibly oneness with the surrounding world – the narcissistic drive.

The function of identification translates into the separation of the known from the unknown, a delimitation of known territory, of used territory, from the unknown world, and assigning it with particular character, identity, or central concept. The existence of a centre provides the territory with a point of return, but also a fixed place – the origin – from which one can “measure” the extent of known territory and determine if this has increased or decreased.

In terms of built structures, this translates into defining *perimeters*, creating enclosures and positing a point of reference, or a *centre*, within that perimeter, allowing for the “positioning” part of this function to be addressed.

Put together, these two concepts allow for this function to be recognized in the combination “*perimeter with a centre*”.

The spatial type concretizing this psychological function can be identified mainly in the planning of settlements, towns – a tradition established in Antiquity, inherited in the medieval configurations, and geometrized in Renaissance town planning of either real or ideal settlements (utopias).

Discussing the spatial types thus generated can be reduced to discussing possible geometries of perimeter and the level of permeability it enables. The geometry of the perimeter can vary from the basic circular or rectangular shape to more complex, polygonal shapes, or irregular shapes determined by the site relief.
The permeability of the perimeter is determined by the amount of crossing points, or thresholds, from the outside/unknown to the inside/known. Their number, position and ratio to segments of enclosure can vary, and can also determine the general character of the enclosure: this can be continuous, (symmetrically) perforated, fragmented, or punctual.

The centre defined for a certain perimeter can also vary in shape and signification. It can be the intersection of the main access routes within the perimeter/territory, a monument of an ancestor, the tomb of a king or hero, a sacred place, like an altar or totem, or a focal point of activity that serves the entire community around it. Therefore, we can talk about types of centres for a delimited area: planar, terminal, axial or punctual.

Whatever the type or symbolic value of a centre, its main role is to focus interest and consideration from all the members of its surrounding community. It establishes a common ground, a common point of reference that can be unanimously recognized. When such a centre is accepted and adopted within a community, it becomes part of the daily routine, part of the community life, and the life of the individual, focusing cohesion and symbolizing the character of the community.

This combination of perimeter with a centre is not restricted to grounded settlements, but can also be recognized in the spatial organization of nomadic settlements.

One such example is the dwellings of nomadic tribes in Central Asia – from the Caspian Sea to central Mongolia: the yurt (or kherga, kabitka or ger⁹). Here the function of representing the known world is included in the layout of the shelter itself. The dwelling takes on the cosmogony of the community. Shelter, perimeter and centre – all come together in one space.

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⁹ source: Paul Oliver – Dwellings, p. 170

**Various approaches to defining a settlement perimeter:**
- Yanomano communal jungle house, the Amazon basin; road signs in USA (photo Eric Souten);
- Boundary stone marking the limits of the Aubrèville abbey’s forests until 1789, France.
"The transition from exterior to interior of the yurt is symbolically important, while inside a clockwise path must be taken. The interior is divided into quadrants; the southern, or entrance zone is of the lowest status, being that of the herders; while the position opposite, in the north quadrant, is for the shrine and for distinguished guests. The quadrant on the left-hand side of the entrance is that male domain of the family head, with saddles, weapons and hunting gear; the women and children sleep opposite with cradle and churns. [...] 

At the centre of the Mongolian ger is the fire, regarded by many Mongols as a protective deity who must not be disturbed. The ‘square of the hearth’ within the circle of the ger follows Buddhist symbolism, the square and the circle being representative of male and female; the five eastern elements of Earth, Wood, Metal, Water and Fire are symbolized respectively by the earth floor, the wooden hearth frame, the iron tripod and the kettle of water over the fire in the hearth. Above, the roof of the dwelling symbolizes the sky, the open smoke hole being seen as the ‘Eye of Heaven.’[10]

Similar spatial organizations were also found in other nomadic (or with nomadic ancestry) populations across the globe, such as the dwellings of the Navajo tribes in Northern America, the Inuit tribes, Turkomen tribes in Iran, the Berbers in Morocco or Tuaregs in South Central Sahara.[11]

These stances bring forward a more succinct and human-scale level of representing the positioning and identity function within built structures, and they do so while being completely integrated in the shelter structure.

Regardless of the scale, we can read the same parameters in settlements, towns or nomadic dwellings, therefore

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the perimeter with centre were considered as the key parameters for the representation of this psychological function in architecture.

As the scale of the spatial frame moves from the individual (shelter) to the collective (settlement), what happens in the space between the centre of the settlement and its perimeter becomes the domain of collective organization. In this respect, the transition from basic individual needs the basic social needs is not only pertinent, but necessary.

Once the known is separated from the unknown, its content and structure must be represented and celebrated, and the following two functions are concretizing these particular aspects of collective behaviour.

examples of settlements presenting a 'perimeter+centre' type configuration:
Old Sarum - 500 BC, near Salisbury, UK (above)
Adamclisi - Roman castrum, 105 AD, near Constanta, Romania (left);
The Golden Section - understanding the natural world by means of mathematics and its application in architectural expression:

the Vitruvian Man by Leonardo DaVinci represented as the ideal of human proportions through geometrical means (above);

the Parthenon and diagrammatic analysis of its facada proportions - knowledge about the natural structures incorporated into architectural expression (right);

Order and Control - Ordo & Contrarotulius

"Architecture depends on Order, Arrangement, Eu-rhythmly, Symmetry, Propriety, and Economy."

The etymology of the name chosen for this psychological function will reveal that the word 'order' has its origins in military terminology, while the word 'control' originated from financial terminology. The root of 'order' is the Latin ordo which designates a row, rank series or arrangement of military units. 'Control' is the contraction of the Anglo-Normandic term cotreroller - 'to exert authority' - and has its roots in the Latin 'contrarotulus', designating a counter or register. This term originated from a medieval method of checking accounts by means of duplicate registers.

Put together, these two terms encompass the prerogatives of authority and the central areas of civic life it regulates: the financial and military institutions.
The psychological needs that require such regulations are those belonging to the Superego, concerned with manifestations of authority that can bring individuals together under the same set of rules. They usually contribute to the defining of a social and cultural identity for a collective, which is validated by the number of its adherents. Though more visible in large collectives, the social and cultural regulations can have independent developments on smaller scales as well - within clans, families, or even for individuals. Nevertheless, the essence of this psychological function remains the need for representing authority and regulation of life and daily activity, so that it transcends the individual and his particular needs.

One of the earliest manifestations of this psychological need is the creation of mythologies in order to explain the mysteries of the world, to bring some sense - sense of purpose and order within a threatening environment. Myths explaining our mortality, the presence of grief, sorrow and sickness in our lives represent our primary attempts, if not to control them, then at least to understand such notions.

In its essence, the function deals with generating patterns: of activities, of movement, of spatial structures - generating a visualization of collectively accepted performance, and setting up the rituals of the community. Such collectively recognizable and appropriable patterns contribute to making a clear distinction between what is ordered and what is random, what is under our control and what is a question of hazard. Therefore, this function is often an expression of our understanding of 'higher authority', a superior logic to the natural and instinctual flow of events, and is consequently is expressed in more abstract terms and concepts. As far as architectural expression is concerned, these abstract notions involve the concepts of symmetry, geometry, hierarchy.
Order can be expressed through symmetric spatial configurations, repetition of geometric elements and configurations, often with the intention of representing a deliberate hierarchy of the structural and compositional elements. Such spatial metaphors have a clear purpose – to emphasize the difference between what is governed by instinct and what is governed by reasoning.

Control comes once a comprehensive understanding of the subject has been achieved. In terms of architectural expression, control is omnipresent: from manipulation of materials and mechanical forces within the structures, to the manipulation of psychological impact on those who use the building. It has to do with deciding on issues of accessibility, visibility, and segregation, of manipulation of natural elements and phenomena, or – in some cases – a straight on confrontation of their properties [working the water, light, airflow, gravity, etc.]

It is quite possible that, out of all the aims of the architect, control is by far the foremost aspect of the profession. Control of creativity, control of materials, spaces and behaviours, and ultimately - control over time and legacy.

This professional ambition becomes most visible in the utopian projects of the renaissance ideal cities – where the form of the city plan, its geometric harmonies and proportions were believed to secure the perfect background for a perfect life. This line of reasoning was reiterated along the centuries to follow – from the geometric designs of the Baroque, to the ideal urban spaces of the modernists. Yet for all the idealism behind such endeavours, the social organism and its culture would always generate new challenges, new needs and new levels of ideal. In order to bring a sense of balance to the abstract authority required by a function of the Superego, the authority of the individual would need to be re-established, and we will discuss this in the last two functions.
When Vitruvius laid down the foundations of architectural theory in his *Ten Books*, he first discussed the principles of architectural education and described them as all-encompassing: the knowledge required to produce architecture should cover a large array of skills and interests, from art to medicine, from masonry to philosophy. It is only natural that all this information should permeate the architectural expression thus generated; complementary to the intended subject for the architectural creation, information about the skills and sensibilities of its creators is also captured in its configuration. When this occurs continuously over centuries, or even millennia, we can talk about architectural expression as a memory vessel.

*Mnemosyne* is the personification of memory in ancient Greek mythology - also known as *Memoria* in Roman mythology - and sometime confused with *Mneme*, one of the earlier, Boetian version of the Muses. She was the titan mother of the nine muses of art and creation, and her name is often associated with the powers of oracles and skills of statesmen.

Recording and representing our memories has been a continuous activity of the human kind from its early days, and this is achieved on various levels of experience - from the individual to great collectives. In terms of architectural expression, the function of memory is best engaged when it is addressing a larger audience, when it speaks to the majority, and does so from a position of authority. Therefore, if we were to choose a domain where this function becomes activated, it would be the Superego.

From a historical and social point of view, architectural expression can provide clues on knowledge and skill levels of the culture producing it, traditions and system of beliefs, as well as social dynamic, which varies from...
one culture to the other, from generation to generation, from one technological age to the next. Such clues are found in the representation of certain aspects, where meaning is captured and projected in architectural articulation, and this indicates that the main parameter of the memory vessel function is the symbol.

Nevertheless, symbolization alone is not sufficient to describe the essence of the memory vessel function of architectural expression. As we shall see later on, Norberg-Schultz identified the three main tasks of architectural expression as visualization, symbolization and gathering of meaning. It is from this thought that I draw inspiration, together with the phenomenologist view of Gaston Bachelard. In his view, architectural structures also provide the skeleton/base for our organizing and storing of memories. Bachelard pointed out the mechanism of how we accumulate our memories in various corners of our home, and how the memories of various homes can combine and become the structure of our life memories. Taken together, these two views on the function of memory within the architectural frame can help describing the equation for this function – the gathering of symbols.

And what sort of spatial frames would the gathering of symbols create? What is the architectural expression of memory?

Perhaps the most obvious of answers would be the monuments, memorials and museums we build – these are all programs specifically design to remind, commemorate and preserve memories we once had – yet memory is celebrated in architectural articulation in many other ways: by perpetuating vernacular architecture traditions, reinterpreting styles of the past, and now – in the age of globalization – by disseminating local artefacts of memory on a global scale, as means of consolidating cultural identity.
The following two functions we are going to discuss are the functions activated in the Ego division of the psyche. As we have seen previously, this particular division – as a mediator between the ID and the Superego – has somewhat of a dual nature. It is able to deal with matters of the psyche both inwardly – towards the ID – or outwardly, with the authority recognized and required by the Superego. Therefore, this dual aspect of the Ego had to be reflected in the psychological functions of architecture we are going to discuss.

Both the compliance/deviation indicator and the abstract conceptualization function express the personal interpretation and contribution to architectural expression, which may make them difficult to differentiate. However, the orientation each function has, while involving the Ego in the creation of space, is a criterion of separation.

These functions represent what Kant defined as the process of aesthetic judgment – the interface between subject and object, or more specifically, in this case, between the psyche and the architectural frame. He defined it as the link between cognition and desire, an attempt at rationalizing our emotional responses to the world of objects.

In this respect, architecture itself as a human preoccupation is an 'aesthetic judgment' that involves tapping into the history of previous architectural experiences [memory vessel function] and making a like/dislike judgment on them. This moment of defining a like/dislike can be translated into architectural articulation through the inclusion of certain frames and spatial instances, the exclusion of others and, sometimes, by introducing entirely new ones.

As the architect proceeds with creating an architectural object, alongside with decisions concerning materials, dimensions, functions and structure of space, he makes aesthetic judgments on the architectural frames to be used. It is this aspect of the architectural design process that we can identify as 'creativity' or personal signature of the designer/architect.
Let us return to what differentiates the two functions, and start with the parameters involved. As discussed previously, in the case of the compliance/deviation function, we are dealing with an extrovert relating of the self – a relationship with the context.

Whether the context is an architectural style, a strategy or simple matter of fashion, the question we are faced with is do we follow or not? This is where the parameter of this function – change - becomes visible. One look at the history of architecture makes it clear that change is ever present in the evolution of architectural language.

In the case of this particular function, the parameter of change is engaged in the architect’s (or designer) relationship with the context, and the result of this is understood as his personal contribution to it.

Whether this contribution is innovative or merely makes for an additional (quirky) flavour to the existing array, it is up our own personal aesthetic judgement. Nevertheless, the contribution in itself is relevant in the idea that we are building our personal versions of spatial structures.
This is what ultimately validates the hypothesis that meaning in architectural expression is inherently connected with our own psychological space.
Abstract conceptualisation Indicator - Ousia

Ousia is the Ancient Greek noun formed on the feminine present participle for the Greek verb “to be” (such a participle in English, is “being”). It is often translated into Latin and English as, substantia and essentia. Aristotle uses the term to show that things that are non-being are still things of substance.

This function can be considered the main drive behind most conceptual development in architecture - the way the designer understands a house to look like, or a fire station, or a governmental building for that matter.

Abstraction can reduce the architectural frame to a single concept or expression, usually transforming it into a very narrow and precise statement. This also is a very individualizing indicator, closely related to the intention and personality of its designer, and as such, it has been recorded to have as many levels of intensity and accomplishment as there are individuals expressing their Self through architecture. Therefore, one can only illustrate instances of how this is expressed, rather than define various architectural types that comprise this function.

The parameter for the function is also change, yet it is a change focused on how the creator understands the very essence of the object he creates. In this case, however, the relation is of an introvert nature. It requires the architect to focus on his own understanding and interpretation of the possible outcomes.

The result of this introspection is reflected in the personal contribution the architect brings to the concept of a particular architectural object.
Together, these two functions are indicators of personal stance, in terms of architectural expression, of the manner in which the designer/architect relates to both cultural and social values, and basic, intuitive aspects of building. In this respect, they are the most poignant expressions the Self, out of all the psychological functions.
Having unveiled the psychological functions I was able to recognize within architectural expression, it is now time to take a tour through the theoretical background that led me to their identification. As you will be able to notice, the notions discussed so far are not entirely new, but they do aim to concretise and gather ideas and issues discussed throughout decades of architectural theory.

MARTIN HEIDEGGER

From a phenomenological standpoint, there is the notion that architecture has a deeper subtext than providing shelters and buildings to house human necessities. One of the most notable views on this matter is the essay of M. Heidegger “Building Dwelling Thinking”. He demonstrates, through the investigation of linguistic evidence, that the act of dwelling, as performed by mankind, is what defines our being in the world. This, he points out, is achieved through two very important actions: building and thinking. What he also brings into focus are the main elements of this process - the earth, the sky, divinity and humanity (specifically its transience) - this being the ‘fourfold’ and bringing it together into ‘oneness’ is what he identifies as the origin of defining space, the essence of a place, and ultimately of making architecture.

This view was expressed at a time when the German society was focusing its efforts on re-building its cities and homes, and the issue of how this was going to be handled was the centre of the debate. We can recognize in Heidegger’s theory the essence of the relationship between humanity and its built environment, and I adopted this view as the frame for my further research and choice of literature.

Understanding that the process of building spaces and settlements had deeper spiritual and psychological implications was not at all a novelty issue, rather a fading and forgotten one, and Heidegger’s manifesto was aiming at repositioning it in the frontline of architectural discourse.

Decades later, Christian Norberg-Schultz picked up this thread that Heidegger unravelled and developed it into the hypothesis that the task of architecture is to “bring something into presence”, by uniting the elements of the ‘fourfold’ and creating ‘places’. He identified that ‘something’ as ‘character’.

CHRISTIAN NORBERG-SCHULTZ

According to Norberg-Schultz, natural and man-made things “embody characters which mirror man’s state-of-mind at the same time as they delimit a precinct which admits man’s actions”. Once this character is rendered through architectural expression, and all elements of the fourfold come together as one, his theory is that an existential place is articulated: ‘architecture is the concretisation of existential places’

What Norberg-Schultz emphasizes here is that the task of making/building architecture is not limited only to erecting structures and providing sheltered spaces, but it also defines the place of our existence, the place where the human element comes together with the natural world (the earth and the sky) and the divine element, the spiritual aspect of that place. He also defines the particular activities that lead to the concretization of existential places:

visualization of man’s understanding of nature, by expressing the existential ‘foothold’ he has gained. This means that the first step to building an existential place is understanding where and how we exists, and what is the relationship we develop with the chosen site. Secondly, it implies understanding the extent of our legacy on the earth - ‘the existential foothold’ that we intent to materialize in architectural expression (where and how we build);
symbolization of man's understanding of nature (including his own), where an experienced meaning is 'translated' into another medium, for the purpose of freeing the meaning from the immediate situation. Meaning becomes a 'cultural object': we assign symbols and signs to different concepts we can observe during the visualization activity, and this leads to the creation of an alphabet and a language that can illustrate and represent our understanding of the world at the time we build our world. Through this activity we make architecture the articulation of our knowledge of the world.

gathering of experienced meanings to create an imago mundi or micro cosmos which concretises this world-meaning that as various articulations of knowledge are gathered in on concretization of architectural space, it will expand our vision and representation of the world, with the outward extending tendency to reflect as much of the macrocosm as we know, in a smaller, more graspable space;

Norberg-Schultz also points out that these activities occur in a continuous and simultaneous fashion and the true art of architecture is to bring together as many aspects and contradicting stances as possible, so that the true complexity of the world is integrated in the existential places we build - "[...]gathering the contradictions and complexities of the life-world".

This take on the 'mission' of architecture is enabling a very important connection between the concept at the centre of an architectural context and the human element that generated it: architecture is a materialized expression of man's experience and understanding of a place and its meaning. But what is the source of the meaning in a possible existential place? How does one know there is meaning to be found in one place or another? Heidegger talks about humanity meeting divinity as the source of meaning. Norberg-Schultz proposes that there are two psychological functions to the existential place that, when met, enable meaning to come forth: orientation and identification. They enable man to know where he is and also what sort of place he is in.

"When man dwells, he is simultaneously located in space and exposed to a certain environmental character. The two psychological functions involved may be called 'orientation' and 'identification'. To gain an existential foothold, man has to be able to orientate himself; he has to know where he is. But he also has to identify himself with the environment, that is, he has to know how he is in a certain place."

Christian Norberg-Schultz – The Phenomenon of Place

This theory provides an important and direct link between architectural expression and the psyche - where psychological functions are distinctively acknowledged as generators of spatial patterns and types. The main idea being that whatever meaning is to be found in establishing a 'place' comes from internal processing, not only on matters of identification, but even on matters of orientation, when topological parameters refer to the self as the centre: front, back, left, right, up, down.

GASTON BACHELARD

The dwelling, or the house, is built not only of material elements, but also from psychological elements, the memories, feelings and lives accumulated under a roof become part of the house's structure, making it difficult to separate them in the end. Essentially, the principle is the same: the house is the outer shell of the individual, a second, larger body; it is the host of both the intra- and inter- human experiences.

In his 'Poetics of Space', Gaston Bachelard begins by exposing the house as the shelter for memories and
daydreams, which according to him represents the key element to the understanding of the psychological apparatus.

The premise he considers here is that the house is the universe of one's perception. The final image of Bachelard's discourse is the parallel between the vertical section of the house and the structure of the psyche. He goes on to show that the structure of this house of the mind does not belong to only one architectural structure, of the first house we remember living in, but it is a combination of all the houses in our memory, that gets more complex and more diffuse with the passing of time. As for the actual physical structure, he points out that the house, too, is haunted in its turn by all the memories related to (and contained in) its corners, corridors, cupboards and rooms. What he describes here is what I consider a very dynamic and intimate relationship between the mind/memory/psyche and the spatial frame of the house. Every memory adds to the haunting of the house, which in its turn adds to the structural complexity of the psyche.

**RUDOLPH ARNHEIM**

Bachelard is not the only one to observe this superposition between the architectural frame and the structure of the mind. In the final chapter of his book 'The Dynamics of Architectural Form', Rudolph Arnheim enables the final connection needed in this line of reasoning: 'when the human mind organizes a body of thought, it does so almost inevitably in terms of spatial imagery'. And in demonstration, he cites Sigmund Freud's own illustration of the relation between conscious, preconscious, subconscious, ego and id, concluding that given the fact that most human thoughts need to be worked out and expressed in a perceptual environment, then 'architecture, wittingly or not, presents embodiments of thought when it invents and builds shapes'.

This allows for the possibility that not only do we reflect our inner world in the architectural expressions around us, but these very structural images become appropriated by the mind as structures for thought – and consciousness is the immaterial architecture of thought.

According to cognitive science, cognition can be explained by means of either symbolic, connectionist or dynamic models of mental processes. Different areas of cognitive science have specialized on developing one or the other model, or even combinations of them, but the essential description of the function of cognition can be found in the work of D.C. Dennett – Consciousness Explained.

**D.C. DENNET**

His main point is that there are 'no central observers' and 'becoming conscious' is a transition to a better-informed space by means of reporting subconscious thoughts to one's self. Dennett calls this 'causation backwards': the process of framing and reporting the first-order state/belief creates the second-order state/belief. This way, content is fixed through expression, and meaning is 'revealed'.

Data provided by this process is organized through mental visual imagery and computing into diagrams. These diagrams enable the mental parsing and reassembling of the available data in order for new meanings to 'pop out'.

At this point we can observe a certain recursive character in the function of cognition, and it is clear that this recursive loop is iterated in the self-architecture determinism. What is meant with this is that our language indicates an internal representation of the mind/psyche in terms of architectural structure and expression. Frequently, our data-organizing diagrams become architectural structures with a clear purpose of representation. More so, the functions of the psyche have a decisive influence on what we chose to represent, the frequency and intensity of such representations, even the directions of knowledge development are set from early on by these functions.
How, then, can architecture separate itself from this sort of influence? It clearly is very unlikely. Even though modern considerations in terms of architectural design focus on a much more functional development, it is just as important to remember that the psyche and its defining functions are not mere sources of variation in architectural expression. They are the bases for the majority of rules we set into the design process and should be acknowledged as such.

These preliminary finds have led me to two important foundation stones for developing the hypothesis of this research.

One is the confirmation that we can speak of a certain deterministic relation between the psyche - and to a deeper extent, the self - and the architectural and spatial patterns we choose to build and inhabit. Knowing this and choosing architecture as a profession, requires also a certain concern for understanding what exactly makes this connection possible, or even more so - valuable and meaningful.

The second idea is the common denominator of the theories discussed above, the element used to describe how the connection between the psychological and architectural space is possible: through various psychological functions of the architectural expression. C. Norberg-Schultz identified the two psychological functions of orientation and identification, Gaston Bachelard discussed the function of memory vessel and R. Arneheim emphasized the link between architectural expression and the structure of thought, while D.C. Dennett explained how this is possible in terms of cognitive processes.

Such premises encouraged me to look for a structured and explicit range of psychological functions in architecture, and also for the abstract spatial types that would illustrate their essence.
3 | CASE STUDIES

In this section I will be dealing with three case studies, selected after the literature review and preliminary finds. They come from three different backgrounds, historical times and programs:

**The project:** “Sequences” by Lars Kordetzky – an architectural experiment concerned with psychological spaces, developed in Zug, Switzerland in 1998.


**The monument:** Castel Sant’Angelo, also known as Hadrian’s Mausoleum – the museum and historical monument in Rome, dating from 130 AD.

As we observed in the previous section, for some functions we can easily define an abstract type or spatial pattern as their architectural projection. In the case of more ‘individualizing’ functions [4,5 and 6], it has proven almost impossible to subsume them to a single type or pattern, therefore the decision was made to introduce three case studies that will allow me to illustrate these functions to a greater extent.

The case studies were chosen on their programmatic approach to the psychological space, their remarkable individuality and deliberate manifesto of personal principles.

In order to achieve a coherent approach to all three case studies, I have developed a sequence of questions to be answered in each case, regarding the relevance of the chosen case, its background and where we can identify the psychological questions:

[1] What is the relevance of this case study in relation to the main question?

[2] Describe the project

[3] What is its subtext: is the connection of this project with the psychological space explicit? Is it intended?

[4] What psychological functions can you identify in this project?

[5] How are those functions represented?
model illustrating the psychological space of the patient, encapsulated in the boundaries of the isolation room - from L. Kordetzky's Sequences, p 72
The book on this architectural experiment was the first bibliographic reference I used in my preliminary research and also became the model for my own enterprise. The project in itself - an experiment on materializing psychological spaces - had inspired my preoccupation with the psychological aspects of the built spaces; therefore it is an appropriate choice for the first case study on which to test the hypothesis of my research. Having a deliberate attempt at expressing psychological space in terms of architectural structures at hand provides a perfect setting for verifying the psychological functions and their architectural representation.

This architectural experiment consists of an intervention in the isolation room of a psychiatric clinic, meant as an illustration of the confrontation between the architecture of that particular space and the psyche. RIEA published the book that resulted from the documentation of this experiment three years later, as an instance of “architectural structures in a precariously balanced, in-between world” (foreword)

The setting of this experiment is the isolation room of the Psychiatric Clinic at Oberwil near Zug, Switzerland, December 1997 - February 1998; the building is rundown and scheduled for demolition, situated in a wooded area at the foot of the mountain, overlooking a lake, with a railroad passing by.

The project took 51 days to complete, and it was described as a study of ‘other worlds’; an assessment of the isolation room as a “place of confrontation with psyche, with architecture”; the focus laying in the concept of ‘being at home’ and how this is achieved in the conditions of a repressive architectural frame - “settling down inside and outside of one’s self”.

Taking their queue from the scratching and drawings on the walls and doors of the patients area [interpreted by the architect as “physical attempts to break out of reality"] the project team invite a former resident of the isolation room to draw a mental map of his memories and fantasies related to that particular space. This mental map is transferred on the isolation room walls with the intention of creating a “model of an invisible world”.

The concept of psychological space deals in terms of dynamic connections of ‘moments in space’ of various scale and proportions. Also, these connections create a labyrinth-like structure in order to allow choice of trajectory - following a personal route, in accordance to individual needs.

The patient draws a mental map in order to dismantle his isolating boundaries, would he then use these boundaries as a system origin, or would he rely on his own self to take this part?

The map extends outside the room, outside the building; imaginary tunnels connect the room with the town beyond the lake, beyond the railway, beyond the horizon. The ‘primal shelter’ of the isolation room receives imaginary dimensions that place it into the world, thus defeating the purpose of the room [isolation] through the mental mechanisms of coping.

While dematerializing the boundaries of his isolation room, the resident forms a direct connection with the world he is separated from, by creating a mental map composed from his own memories and experiences of the world outside, and where gaps appear, they are filled in with the use of imagination.

The intention of this experiment is to illustrate how the ‘mental map’ of one’s world gains a real dimension as a reaction to the isolation room, by building the imaginary connection with the world outside within the walls of the room. This is materialized into a full-scale model of the drawings on the walls and the specifications of the former resident for the imaginary constructs that aided him in adapting to his restrictive lodging.

16 Lars: Kordetzy Sequences: Saw Only the Moon - Springer, 2001
The author states that he is addressing the structure of the psychological space and its reaction to the constrictions of an isolation room [architectural space]. The resulting space is translated into architectural language, with direct intent to represent the psychological processes and effects of the isolation room.

The choice of psychodynamic processes is revealed, explained and illustrated with details of the project, sketches and captions throughout the book. Aside from that, we also can perceive the author's own perspective on the space he is materializing, through his assessment of the patients rendition of psychological space. This brings him forward not only as an illustrator of psychological spaces, but also as a translator from particular instances of inner worlds to generally understood and accepted architectural language.

While the architectural container (isolation room) proves to be rather impervious to change, the psychological space gains flexibility and 'covering' of a domain surpassing the boundaries of the room. As the psychological space gains a physical dimension, one can notice these boundaries becoming irrelevant, and the network reaches out - "the isolation room loses its name". This catharsis allows the suppression of the isolation room's strength - the idea it stands for [loneliness] - by dismantling its powers: the inconsiderate scale, the imperviousness and indifference.

As the building goes on to being demolished, scale models of the isolation room and the mental maps it hosted are left behind to recompose the places of the psychiatric ward. At this point, we are being confronted with the question of identifying a new 'settlement' for the psyche, a new space that can express the intricacies and paradoxes of the psyche, as the architect promptly asks:

above: diagrams representing the method of rescaling the dimensions of the isolation room to an appropriable size (after L. Kordetzky)

below: model illustrating the multiplication of the individual shelter in the internal world and the re-definition of its boundaries - the patient imagines a space where connections are possible and the enclosure of the isolation room is dissolved (from L. Kordetzky's Sequences, p 46)
"Is there a room for the psyche? [...] Freed from the constraints of surrounding surfaces, interiors seem to be turned inside out and vice versa, depending on the resident's state of mind. The rooms are meant to be like particles in unrestricted space. Users should be able to move about in their own realities. [...] an architecture of the psyche with no scale, characterized only by properties."

It is at this point that the architect sets the rules for creating 'rooms of the psyche' - an architecture that consists of different dimensions and moments. This is achieved through defining and illustrating properties, or characteristics of space that describe the psychological processes:

Fission, enclosed world, position, membrane, time lag, escape-line, particle, illusion, transference, scale, transient sedimentation, vibration, landscape, threshold, currents.

These spatial properties become active parameters in the translation of the psychological space into the physical realm, enabling a direct connection between the psychological needs and the spatial frames they generate.

Their succession represents the stages of the imagined process of 'settling' in an isolation room. When analyzed, these properties come together as indicators for the psychological functions established earlier. Perhaps the most obvious function we can observe being addressed in this project is that of shelter & protection: the point of departure itself is a basic container, an individual shelter that presents inappropriate scale towards the inhabitant. From here on, the design task is set - rescaling the individual shelter and expanding the boundaries of the isolation room to include the known world of the patient.

17 from the introduction of Lars: Kordetzky's Sequences, p. 41
The argument here is that, the densification, the pip of the structure, can be read as an instinctual representation of the self as the center of the mental map, the 'traveler' that strides along the synaptic paths and manages this inner world.

The next step is to define the boundaries of this inner world into a material reality, by incorporating a landscape, defining a boundary of the psychological space - the enclosed world - with a permeating membrane and points of crossing towards the unknown (threshold). Within the defined territory, the architect proceeds with positioning the initial centre of a shelter and then multiply it towards the limits of the set spatial limits. The multiplication of that same centre allows the inhabitant to be at any moment in time and space that belongs to his inner world / memory.

Taken together, all the above mentioned properties indicate that a second function is addressed - identity &positioning.

Redefining one's space so obviously contrasting to the existing spatial frame is a solid indication that the next relevant psychological function addressed is that of compliance/deviation indicator: the architect aims at illustrating the very separation of the inner reality from the surrounding spatial frame, by fragmenting the structure of the latter, and focusing on the breaking point of internal tensions within the former. This dissolution of recognizable structures is achieved through what Kordetzky defines as time lag - a vertical displacement of elements that appear to connect.

This vertical displacement is especially applied to elements of memory that get dislodged and remixed in the representation of the psychological space, thus generating the property defined as transient sedimentation. The re-organization of memory comes as a consequence of the spatial constrains and the limited connection with the spatial frames that anchor the respective memories. Therefore, the memory structure we are faced with, at this point, is entirely dependant on the frames being redefined in the psychological space - something we can interpret as a proof for the use of a fourth psychological function - the memory vessel. All these alterations brought to the perception and experience of the isolation room converge towards the creation of a new world for the patient, a world that is specifically designed to respond to his own psychological structure and needs, a world the patient can control and re-organize at will - a world so much in contrast to the reality that imprisons him. Kordetzky calls this world an illusion; yet materializing this illusion is what empowers the patient to experience his own sense of order and control.

To summarize the concept of Sequences, we can state that this project is the materialization of a given psychological space in relation to the architectural frame that contained it. The influences these two worlds had on each other led to changes in perception and use of both space and psyche, and it is this change that becomes emphasized through the process of materialization. The maps of the mind that the patient made available to the architect were rather rudimentary and literal, and therefore, the challenge of this project came with discovering the essence of what is described through the scribbling on the walls.

In the mind/memory of the former resident, the isolation room is an architectural object: well defined, strictly functional, with no requirement for an environment, since its main function is to separate itself from the context. The interpretation of these 'places' of the mind is minimized to wood beams, planks and boxes, focusing mainly on the trajectory, density and scale of the elements in rapport with each other. It is perhaps this choice of rendition that prompts the architect to describe the structure as an "interim world in a state of precarious equilibrium".
the psychological space of the patient redefines the physical space of the asylum: as the building is torn down, the only evidence of the spatial experience it provided remains this personal interpretation (from L. Kordetzky's Sequences, p 94)
I came across the 'Carceri' while researching the history of Castel Sant'Angelo, where a short reference was made to the fact that the theme of the prints was inspired by Piranesi's visit to the former prison within the walls of the castle. Curious about what sort of work this visit could inspire, I started investigating the work with avid interest - it soon became a case study in its own rights, as the bibliography on the subject piled up considerably.

In the attempt to find a concrete link between the castle and Piranesi's 'Carceri', I came across a wide variety of interpretations and analyses, most of which took me further away from my starting point, yet following through on these wandering paths allowed for the entire issue of relevance within the subject of psychological spaces and their architectural rendition to gain an unsuspected valence.

The connection to any real place of inspiration becomes secondary when dealing with 'Carceri', for it is the psychological impact on the viewer that becomes Piranesi's primary objective. The manner in which he chooses to connect to the psychological space is both theatrical and architectural, and has a sense of poetry that captivated people's imagination over centuries.

The choice to undergo this case study comes from such a feeling of inspiration, and from a desire illustrate that the places of our imagination, the places of our inner worlds do find expression through architecture, and once they do, they manage to reflect our psyche more clearly than we expect them to do.
Perhaps the most mentioned [and possibly the earliest] interpretation of the message within the 'Carceri' etchings is that of Thomas de Quincey in his 'Confessions of an English Opium Eater', a good 80 years after the publication of the first edition. The passage quoted as de Quincey's interpretation of Piranesi's plates is actually an account of a description given to him by another person. This description inspired the imagination of the author into understanding the spaces of the 'Carceri' as images from a feverish dream of a young man, a twisted reality, much like that of a narcotic-induced reverie. He envisioned these spaces as large gothic halls, infinite successions of stairs and endless displays of torture devices, where the mind can easily be lost in the search of a way out. This paragraph set the precedent of all ulterior interpretations in the way it was so completely appropriated by the current cultural context of the time, and, even more surprising, despite its rather undocumented and subjective character, it proved to be the core of many analyses in the decades to follow to which they would return again and again with various arguments.

In this respect, another notable interpretation is that of Aldous Huxley - just as surprising and just as influenced by the times it was brought forward in as in the case of Thomas de Quincey. Huxley saw in the particularities of Piranesi's drawings the prefiguration of certain concepts of abstract art - cubism, in particular:

"Considered from a purely formal standpoint, the Prisons are remarkable as being the nearest eighteenth century approach to abstract art. The raw material of Piranesi's designs consists of architectural forms; but, because the Prisons are images of confusion, because their essence is pointlessness, the combination of architectural forms never adds up to an architectural drawing, but remains a free design, untrammeled by any considerations of utility or even possibility, and limited only by the necessity of evoking the ge-

\footnote{See annex item A2}
neral idea of a building. In other words, Piranesi uses architectural forms to produce a series of beautifully intricate designs — designs which resemble the abstractions of the Cubists in being composed of geometrical elements, but which have the advantage of combining pure geometry with enough subject matter, enough literature, to express more forcibly than a mere pattern can do, the obscure and terrible states of spiritual confusion and acedia.  

A decade after the publishing of Huxley's essay, Ulya Vogt-Goknil sets the message of the 'Carceri' in the psychological frame with her interpretation of the artists repression and his means of liberation. In her reading of the etchings as a potential liberation of form, Tafuri acknowledged the possibility of liberation from form, and sets the path to understanding the message as a criticism of the symbolic language of architecture, of formal utopias - so popular with the humanist school of thought.

Tafuri's notion of Piranesi is that of "the conceptional heir of the great critical line of modern architecture", and offers in his analysis the portrait of a revolutionary architect, who, although intuitively, discovered the dimension of architecture as an end in itself rather than a mean. Such a discovery, Tafuri argues, would leave the architect alienated and overwhelmed by the consequences:

"Architecture is nothing more than a sign and an arbitrary construction, then; but this is intrinsic to Piranesi's discovery of the absolute 'solitude' that engulfs the subject who recognizes the relativity of his own actions. To such an extent that one of the great anticipation of the future that can be identified in Piranesi's work is his founding of what would emerge as the ethic of the dialectical becoming of avant-garde art: of that art which - in the words of Fautrier - 'can only destroy itself' and which 'only destroying itself can constantly renew itself'."

Considering the wider frames of Piranesi's work, namely the iconographic works (such as the 'capricci', the phaeton, Campo Marzio) and his continuous manifesto for seeking inspiration in the legacy of ancient Rome, but also for using one's imagination and creative drive to surpass the achievements of ancient Roman architecture — a manifesto strongly aimed at his contemporary patrons and leading figures in the civic life — is it possible to interpret the title of his work 'Carceri d'Invenzione' not only as 'Imaginary Prisons', but also as prisons of imagination, places of repressed 'invenzione' [invention]?

Along the centuries, his work has been interpreted as a romantic, existentialist, rationalist, and even juridical manifesto, and due to the variety of Piranesi's preoccupation and studies, the effervescence of cultural and political debates of his time, evidence was found to back up, to various extents, all the interpretations mentioned above. The question of how the title can be interpreted derives from the writings of Piranesi himself, his debates and what he wanted to inspire with his 'fantasy' works: the use of creative imagination. Surely, ancient Rome was fascinating, governed by strong principles, revered by all its citizens, but even in all his rapture with the archeological evidence of such greatness, Piranesi was also aware that exceptions from the rules were made even in those times, and challenging situations were dealt with in ingenious fashion. He understood that the lesson Rome had to teach was the use of imagination to overcome obstacles, to step forward, to advance civilization, and that is what his manifesto is about.

It is no secret the 'Carceri' were published in a time when Piranesi was facing a recalcitrant public, and therefore he had to dilute his message, but the intensity of this project, the fact that he re-edited the etchings sixteen years later, prove a deep preoccupation and dedication to the subject of his work.

19 From the introductory essay to the 1949 edition of 'Carceri', published by Trianon Press, London — courtesy of www. johncothart.com feuilletont/  

Sure enough, in English the rearranging of words is far easier, but what I rely on when arguing the interpretation of the title is the meaning of the word 'invenzione' in Italian.

Invenzione: Atto dell'intelligenza che consiste nella capacità di combinare in modo nuovo i materiali presenti in natura. Si distingue dalla scoperta, la quale rivela soltanto l'esistenza di aspetti sconosciuti della realtà, ma non ne propone nuove possibilità applicative. Si distingue anche dall'innovazione, che consiste nell'applicazione ampia di una novità o di un'invenzione nella realtà economica. Raramente chi inventa e chi innova sono la stessa persona. È possibile che talora l'invenzione attinga alle conoscenze scientifiche o che sia da esse resa possibile. In realtà però, fino a un'epoca molto recente, fra l'invenzione e la scienza i rapporti furono estremamente superficiali. Solo dalla metà dell'Ottocento i rapporti divennero sempre più stretti.

Dizionario di storiografia [http://www.pbmstoria.it/dizionari/storiografia/lemmi/214.htm]

Invenzione is a noun designating the product of creative thought, an idea or solution that can determine a technological or scientific advancement, and it is derived from the Latin verb 'invenire' that means 'to find'. It is in this etymological root where a key can be found, and all the interpretations overviewed above offer a compelling image for the actual 'purpose' of 'Carceri': it is first and foremost a stimulant of the imagination, a challenge to look for new 'meanings' to break out from the pattern of an already established interpretation and attempt the devising of personal structures of thought, involving personal experience and background.

The choice of prison as the main theme appears as somewhat didactical, in the fashion of 'reverse psychology' stimuli: the simple fact that we, as viewers, are placed at the core of these prisons, without necessarily having the background that would allow us to identify with a prisoner, sets the entire frame of mind for appreciating the images before us, and for visualizing the meaning they encapsulate.

So, how can it be that a series of etchings, making so little use of structures specific to architectural discourse, reveal so many meanings to minds of such different times? How is meaning gathered and symbolized inspiringly without an actual architectural design?

In his introduction to the anthology of Piranesi's etchings published in 1949, Aldous Huxley made a valuable observation that I would like to subscribe to. He described these creations as the resulting diagonal in a parallelogram of forces where the base represents the social and cultural context of the artist's life and the upright represents the temperament and personal experience of the artist. In the case of 'Carceri', Huxley identifies the upright of the private dimension to be dominative of the cultural base, and this allows the etchings to be relevant and modern throughout more than two centuries.

Given the personal character of this work, it is only natural it should next involve the function of **identity and positioning** in the world, and this is expressed through the viewpoint Piranesi chooses for each of the plates. The viewer always finds himself at the core of the labyrinth, inside, looking for a way out. In this way, the artist forces us to identify with his point of view, but also places us in the middle of the world he created in order to underline the fact that the centre of the world we need to return to is ourselves.

When the viewer decides to accept the role offered by Piranesi, the next function is engaged: indicating our **compliance or deviation**. In the setting Piranesi offers us, we, as viewers, are confronted with seemingly recognizable elements of architecture, devices and human.
figures. When considered individually, they can read as such, yet when we consider the general context and their relation to each other, we realize that nothing seems to come together in a 'normal' fashion: scale, continuity, possibilities of interaction are distorted to an extent that makes it difficult for the viewer to engage with the setting.

The difference of scale between the architectural elements, the mechanical devices and the human figures puts the viewer in the position of having to choose a level of scale to which he can relate: starting with the historical scale of the architectural elements - the Roman ruins in all their grandeur - next, the mechanical devices which populate the space and threaten the human presence, and finally - the human silhouettes - barely legible, wandering shadows across the monumental halls. However, these options are not intended only for the viewer - the very fact that we are confronted with these choices comes from the author's own confrontation with this dilemma. His own struggle between the mainstream thinking of his time and his own principles on architectural expression are here translated into a struggle of scale, of history versus humanity, and the re-editing of the plates in stronger, more definite lines brings an emphasis on the dramatic confrontation with the self to a degree where the answer to the dilemma becomes irrelevant, save for the intensity of the question being asked.

The evaluation of this space is the way in which the sixth psychological function (abstract conceptualization indicator) is engaged: as we choose one layer or another as a point (or thread) of reference we proceed with making 'aesthetic judgments,' with rationalizing what we see and the emotional responses the image evokes. Although this function has no obvious spatial representation, it is addressed, together with (F2 - identity & positioning), through the elaborate and improbable architectural structure.

As for the order & control function, it is easily observed we cannot point towards a logical hierarchy, a possible structure or even actual, literal means of imprisonment. There is no logical way out either, therefore, even though we cannot recognize spatial patterns characteristic to this function, we can identify it as being exercised and expressed in a reversed manner. The apparent lack of structural order and hierarchy, or any rules of access and engagement with the space represents the grounds for the consideration that 'Carceri' is a manifesto for the liberation from and of form, to which I would add also the manifesto for the liberation of thoughts and imagination. This comes through challenging the principles of order and control by exposing them as irrational, possibly outdated and, literally as prisons of imagination.

This line of reasoning can be extended to the interpretation for the memory vessel function, mainly because of the historical references within the architectural elements. In this case, the manifesto against the mimesis of history acts as a barrier against this particular psychological function - for the memory vessel function of architecture is to illustrate a certain continuity and also evolution of thought, as well as skill. In the case of 'Carceri' the essence of this function is what is lost and lamented.

The only psychological function to which no obvious reference is made is the function of protection, privacy and shelter. Throughout the entire collection of etchings, although the view is constantly that of an elaborate interior, the enclosure and the scale of the spaces never reaches the level of a shelter. Yet, if we are to reconsider the theme of the plates in the manner of Thomas de Quincey, the constant interior perspective would be an important clue to interpreting these images as introspections. If the 'Carceri' are depicting the artist's inner universe, then they permit us access to an even deeper level than that of the shelter: they represent what the shelter would contain and protect.
What we can deduce from the assessment of 'Carceri' through the proposed psychological functions is that the individualizing functions have a clear precedence over the functions of the Superego. In fact, if we were to visualize the structure of the case study - and how the psychological functions are engaged - by reducing it to an abstract image where the functions would be represented by simple boxes, then the conceptual relationship of the functions would look something like this: F2, F5 and F6 would be 'activated' boxes, while F3 and F4 would be the 'de-activated' boxes, representing the functions being challenged – and all these boxes would be contained, together with the viewer, in the box representing F1.

By analyzing the relation between the psychological functions, we can simultaneously be in the position of the viewer inside the F1 box, and outside that same box, able to acknowledge how all the other functions are contained in a frame that is not explicitly represented, but can be deduced when we take in consideration the context around the creation of 'Carceri d'Invenzione'.
The lack of structural order and hierarchy, or any rules of access and engagement with the space generate an inverted representation of the order & control function.

The architectural reference to the style of the Ancients, situated in the far left background of the scene, is consistent with the definition of the memory vessel function.
top / left: plate V - the Lion Bas-Reliefs: the viewers are confronted with seemingly recognizable elements of architecture, devices and human figures, yet the scale, continuity, and possibilities of interaction define their own separate level of engaging - thus determining the viewers to question their relation with the context;

left: plate XI - The Arch with a Shell Ornament: the elaborate and improbable architectural structure confronts the viewers and forces them to rationalize what they perceive and their reaction to it - an introspection according to the definition of the abstract conceptualization function
XVIII century etching showing the view of the castle, Pons Aelius and the northern bank of the river Tiber (author illegible)
CASTEL SANT'ANGELO

With such a rich and long history, it is certainly difficult to cover all the subtexts of this monument of Rome, therefore, for the purpose of this research, I chose to concern myself with just two aspects: the original layout Hadrian planned for his mausoleum and its relation to the symbolism of ancient Roman settlements, as theorized by J. Rykwert, and the present day museum tour within the existing structure of the mausoleum as a possible architectural expression of individuation.

Going on a tour of the castle, the visitor is offered the experience of a symbol-rich architectural representation of the road to knowledge, from the individual unit of the cella, through the labyrinth-like settlement built with the addition of chambers and passageways, to the terrace overseeing the greater world of the metropolis. This exposure to all the environmental levels and spatial elements of the architectural expression, their relatively appropriable scale by the individual and the relevance of the building within the urban context, make Castel Sant'Angelo a valuable example of architecture emphasizing the gradations and levels implied by the individuation process.

The edifice was built in the first half of the second century (approx. 130 AD until 139 AD) as a burial monument for Emperor Hadrian. The site chosen for this mausoleum was on the outskirts of the city of Rome, in what was known as Campus Vaticanus, on the right bank of the river Tiber, facing Campus Martius - the established burial ground for emperors and high ranking patricians. This choice of site is somewhat of a historical mystery, but there are speculations that it was meant to illustrate the less than cordial relationship Rome had with its then emperor, without completely severing the ties with the city.

Other interpretations pointed to religious considerations of Greco-Oriental origin, with cosmological significance in its association with the river and the layout of the building. The reason for this choice is especially relevant since the decision to build on that particular ground meant extensive drainage works to guarantee the stability of the site.

After its completion, the mausoleum would become the burial place of, not only Hadrian and his wife, but also for following generations of Roman rulers. The last emperor known to have been buried here was Caracalla, in 217 AD. Archeological evidence, however, indicate that the mausoleum continued to receive the bodies of successors right until 403 AD, when Honorius included it in the defense structure known as the Aurelian Wall, for the defense of the right bank of the river and the city beyond. Historical sources suggest the possibility that the structure may have been converted into a fortress much earlier, during the Aurelian reign in 271 AD, mainly due to the fact that at that time the entire Vatican region was already populated and it would have been unlikely to be left without a defense.

With the collapse of the Western Roman empire during late fifth century, Rome was confronted with various assaults on the city, and due to the fact that the mausoleum was already incorporated in the defense line for the district of Vatican and its Basilica, it soon underwent a process of transformation from mausoleum to fortification. This new position of power in the defense of the city, made the imperial tomb the object of military campaigns for all the forces involved, being occupied by various armies, such as the troops of Justinian, of the Ostrogoth King Totila, and of the German troops of Charlemagne. With the Saracen campaign of sacking the city of Rome, Pope Leo IV decided to extend the existing fortification to the entire area of the mausoleum, the Vatican and the Borgo district, setting the foundations for the "Leonine City", in 852 AD. This gave the Papacy a relative position of strength that would enable a certain control over Rome in the centuries to follow. The successive papal residents in the now fortress Sant'Angelo (thus named after an apparition of the

21 Joseph Rykwert: The idea of a town
Archangel Michael, supposed to have occurred during a procession led by Pope Gregory the Great in 590 as a last resort to end an epidemic of plague, enriched the structure with various apartments and lodgings, which were brought into a unified and stylish appearance by Pope Nicholas V, in mid-fifteenth century.

During the Renaissance age of Rome, Castel Sant'Angelo was also included in the renovation work of ancient monuments—although it remained a fortress, "it was equipped with all the luxuries and comforts of a princely residence". The castle proved its strength once again in 1527 when the Habsburg emperor Charles V invaded Rome, and twenty years later, when the Turks became a direct threat for the city, the castle gained another fortification: the pentagonal walls designed by Francesco Laparelli to keep the castle out of the enemy canons' range. In 1628, Pope Urban VIII had part of the fortification elements that were obstructing the flow of the river demolished and reinforced the bastions of the pentagonal wall.

The transformation of the fortress into a prison came gradually, due both to military technological advances the papal office could not afford to integrate in the modernization works the fortress needed, and the increasing number of people that would oppose the idea of a papal monarchy. The revolutionary forces that banished the pope into exile in 1798 transformed the papal fortress into a prison for those who opposed the new regime, and, later, when the political scene was once again turned around with the fall of Bonaparte, it became the prison for activists who opposed the restored regime.

In late nineteenth century, a new face for modern Rome was being planned for. In this spirit, the moat, the bastions, and the fortification walls of Castel Sant'Angelo were demolished to make way for the urban infrastructure along the river, and restoration plans for the mausoleum were laid down by Mariano Borgatti, in
The present day museum allows visitors to experience both the initial structure devised by Hadrian, and the ulterior additions that contributed to the historical strata of the castle and the richness of its symbolism. The tour allows us to start with the experience of Hadrian’s initial vision: from the ground level vestibule, a brick vaulted helicoidal ramp takes us full circle to the burial chamber. The flawless circularity of this tunnel and the complete structural isolation from any external reference points makes this first part of the journey slightly disorienting – the few minutes we spend walking up the ramp have no diversion and no event, creating a build-up of anticipation, thus, when finally reaching the burial chamber we are completely aware of the importance of the place.

The room is roughly square, with a vaulted ceiling oriented along the access trajectory, and has approximately 8 m². Two ventilation shafts in the sidewalls connect the chamber with the upper level of the terraces, creating some level of comfort by introducing the ‘idea’ of daylight in the room and a fresh supply of oxygen. The size of the chamber makes it easily assessable and, therefore, easy to appropriate and identify with. In the original structure this was point terminus for the visitor, since no further access to the vaulted rooms above the cella was discovered. The later additions, however, allow the modern visitor – after a small pause of contemplation, to continue on the ascending drawbridge, onto another ramp, this time a lot steeper and narrower. The room is roughly square, with a vaulted ceiling oriented along the access trajectory, and has approximately 8 m². Two ventilation shafts in the sidewalls connect the chamber with the upper level of the terraces, creating some level of comfort by introducing the ‘idea’ of daylight in the room and a fresh supply of oxygen. The size of the chamber makes it easily assessable and,
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After another left turn and a short flight of stair we suddenly find ourselves in the first courtyard. On either side along this courtyard, we are presented with access to various chambers: on our right the service rooms, on our left the apartments that first populated the fortress. Straight ahead another stairway announces another level; as we climb up we find ourselves on the outer walls of the cylindrical structure. The walls are still high, and random, narrow gaps within offer but glimpses of what lies beyond, so as we start advancing along the circular corridor we discover more rooms and more stairways. It seems an endless labyrinth of chambers — some small, some festive, some richly decorated, others so obviously intended as secret — yet whichever way we might choose we seem to end up in the same place: the rotunda. This is part of the last level of the initial structure, and from here, through a hidden, constricted and steep stairway we reach the apex of our visit — the Angel Terrace. It is a wide viewing platform with low parapet walls overseeing the city of Rome to the south, the Basilica and the city of Vatican to the west and the river valley to the east, but also the comings and noings two stories below, in the courtyards of the castle.

"Gentle and bewildered soul, Companion and guest of my body, Now you are about to descend To those gray, harsh and bare spaces Where you will not have your usual amusements.

the fortification wall of the castle plays an essential role in the visitor's perception of the context, and the castle itself: (from the top down) view from the entrance towards the logia; glimpses of the city, as seen from the fourth level gallery along the wall; view of the defense wall surrounding the top terrace of the castle - the Angel Terrace
This is the epitaph Hadrian had inscribed on a stone slab above the entrance - the farewell sigh of a man who has loved the world he lived in, and strived to understand it, so that he could enter death in knowledge. The concretization of this desire is achieved in the architectural endeavor of his mausoleum and provides the generations to follow with a valuable heritage.

Various archaeological and historical researches discussed the major role the emperor himself played in the design and building of the Mausoleum. Hadrian was an emperor-architect and his legacy is at its best and most inspirational in the architectural pieces he created. The mausoleum itself represents the sum of his architectural thinking, of his life and his aspirations, which also makes it a valid sample for the investigation of how the designer’s psychological needs were projected into architectural expression.

The most prominent and obvious function that can be identified in this case study is the function of memory vessel [F4], brought forward by the inherent quality of historical monument. The historical layers accumulated in Castel Sant’Angelo span a little over seventeen centuries, and reflect the major ages of the city, as it was an important setting for major events in the history of Rome.

This layering of historical strata is not limited to a collection of events and historical figures related to this place, but also have a strong architectural evidence for their succession. Every historical period brought its own contribution to the heritage of the castle, and the institution of the museum takes great effort and pride in showing these period-interventions for what they are, in the broader historical context of the monument.
The museum program itself has as its main focus the preservation of memory and history, and this is achieved in the original architectural context (the mausoleum itself, with the ulterior fortifications and papal apartments), where the experience is as complete as possible.

Another explicit function we can identify is that of identity & positioning in the word - It Posit Sinere [F2], and it is originally found in the first age - the mausoleum. Emperor Hadrian built the mausoleum as a memorial to his life and work, but also as a memorial to his relationship with the world he lived in.

The layout of the mausoleum can be diagrammatically explained as a circular building enclosed in a square perimeter with the entrance facing south, right at the water's edge. At the core of the central structure we have the cella, or the burial chamber, accessible through a helicoidal ramp describing a full circle in its ascension. This diagram represents the very principle of organizing new settlements in the ancient Roman culture: the vicinity of water, the four walls facing the four cardinal points, the tomb of the hero at the heart of the town and the labyrinth-like entrance. Anthony Vidler emphasized the symbolic value of such a layout in his book 'The Idea of a Town'. The walls represent the appropriation of the horizon and the sacred boundaries that announce the birth of the town; the tomb of the warrior becomes the center of the settlement, the vessel for its history and the focal point of the local mythology, a source of identity for the community living within these walls; the gate had a filtering role, for its symbolic labyrinth was a reminder that only those who have knowledge of their identity, as members of that community, would be allowed access. In his theory, Vidler sums these symbolic values as evidence of one's place in the world and of their identity as citizen and human being.

19 for an extensive description of the original structure, I would like to refer the reader to the annex item A3

20 Joseph Rykwert: The idea of a town
Even with all these references, we can observe that the tradition of Rome is somewhat overruled in this particular case. It starts with the choice of the site: Emperor Hadrian did not comply with the tradition of building the imperial tomb within the city walls, in order to add to the spiritual center of the city, along with all the heroes/emperors before him, but went outside the 'consecrated' ground, beyond the river, and chose the site where the river had the perfect west-east orientation, where the main access, across the river, would intersect the main avenues in Campo Marzio.

The separation from the city is very clear, but in his duty as an emperor, Hadrian had to maintain some level of connection - the small piazza in front of the entrance to the mausoleum makes a connection to the southern shore, through Pons Aelius, and westbound with the Via Triumphalis, and further on with Circus Neronis. This indicates a symbolic interpretation of the relation²⁵ the emperor had with his capital city, a representation likely to be possible (and intended) due to Hadrian's passion and understanding of architecture, and architectural compositions.

The positioning of the mausoleum, the orientation and the diagram of its plan have great symbolic valences, meant to reflect the emperor's adherence to a cultural context and sense of place, but also his personal divide with that same context - a situation we can reasonably identify as an indicator of compliance and deviation [F5] in relation to a given set of cultural and social rules.

**Shelter, protection & privacy [F1]**: this is the essence of the mausoleum, and we find its representation at the core of the building. The burial chamber and the vaulted, inaccessible rooms above it are the shelters for the body and the spirit of the emperor. This is their sole function and it is easily recognizable, both in terms of use and architectural type.

²⁵ Emperor Hadrian was suspected throughout his entire reign of forcefully ascending the throne, by murdering his adoptive father. He also confronted the Senate and made enemies very early in his reign, and this led to a very tense relation with the political class of Rome. This was heavily publicized during his rule and even after his death.
The latter additions to the mausoleum structure (fortifications, ramparts, papal apartments) do have a protective role and do address the dwelling needs, but their scale is beyond that of the shelter as "a second skin". Nonetheless, they do provide with an excellent and quite literal representation of the order & control function [F3].

Becoming part of the city walls gave the mausoleum great tactical importance, so much so that whoever controlled it controlled the city of Rome. This detail and its proximity to the main cathedral of Rome – Basilica St. Peter – made Castel Sant'Angelo the choice residence for a long succession of popes and political leaders. It was a vantage point for exercising power and rule over the city, and in addition to that, it was also a dreaded prison, mainly for prisoners with death penalties. Such fearsome attributes are a clear representation of the above-mentioned function.

Visitor's movement diagram, from the burial chamber-level, up to the highest terrace - it shows the alternation of circular movement along the main structural wall of the mausoleum, and the labyrinth-like distribution of the living quarters from the later additions.
4 | CONCLUSIONS

Defining the psychological functions was only the first step for the theoretical grounds of this project. The second step required me to understand how these functions can be correlated in one coherent design, which meant undergoing the case studies.

In all of the case studies, the spatial representation for the psychological functions determined by the ID needs could be identified as similar to the abstract type defined in the second part of chapter two. This provided an additional support to the correlation between the psychological functions and spatial representation at a conceptual level, but more importantly, it emphasized the unanimous relevance of these two functions in very different contexts and concepts of space.

The representations of the Superego functions have proven strongly influenced by the subtext of the general composition - the intent of the author/designer and his own background. When the context of both the work and the author were identified, the spatial representation of order & control and memory were in accordance. The filtering of these two functions through the architectural spaces in the chosen case studies adds to the choices of spatial representation already identified in the second chapter.

As for the functions of the Ego, we can notice that this is the driving force within all three case studies, through the authors' determination to show their version of understanding and structuring of the inner world. In all the case studies I noticed a special emphasis on the succession of frames, the variation in scale and the general experience of the created spaces, thus providing that much needed connection between the spatial expressions of the functions.

Scale, frames, experiencing the spaces - these key notions, together with the six psychological functions became the primary focus of the last stage in this project: the design.

At this point, a decision had to be made as to where the design would go: would this be a case of reinterpreting an existing project, perhaps even one of the case studies? The reason against such a choice was the loss of various valences a project might have presented, if I was to strip it down only to its representations of the psychological functions.

Therefore, the logical step from here on was to create an independent show-case architectural object that would feature not only the functions themselves, but also the notions that connect them and allow for the experience of architectural expression to be meaningful.
Following the conclusions of the case studies, a concept was developed based on the experience of space, considering scale, movement and spatial frames as the key parameters for the design.

The scale parameter is incorporated on three different levels of interaction: landscape, paths and enclosures, in accordance with the levels for the appropriation of space.

Movement was devised as a continuous flow that would connect all the instances defined through the other parameters. Due to the differentiation in scale and type of the architectural frames in the design, the movement can also be separated in three different stages: outside, inside and underside.

The frames aim to create a storyline in the experience of space: from indifference, to gradual acceptance, enclosure and, ultimately, oppression of the subject. This is meant to slowly increase the awareness of the visitor's proprioception in the spatial context - and to direct his attention towards the inner, psychological space, by means of challenging personal comfort.
frame: exclusive

frame: evocative

frame: inclusive

frame: constrictive

movement: diagram

movement: outside

movement: inside

movement: underside
While visiting the pavilion, picture gallery illustrating the spatial experience.
while visiting the pavilion - continuing to illustrate the spatial experience
"Assembled for the instruction and enjoyment of society, this collection serves to give a clear picture of the developments of individual modern artists and of the art of our time in general." (Helene Kröller-Müller)

There are few museums that are surrounded by such fascinating landscape as the Kröller-Müller Museum. Situated amid the Hoge Veluwe National Park, the museum offers the visitor a unique combination of culture, nature and architecture. The heart of the collection is the work of Vincent van Gogh, with no fewer than 82 paintings and 190 prints and drawings. The museum also houses works by Seurat, Picasso, Mondrian, Toorop and many others.

The museum's sculpture garden, with more than 100 works dotted among 25 hectares of parkland, is one of the largest in Europe. The garden has recently been enriched with a legendary piece of Dutch post-war architecture: the sculpture pavilion by Aldo van Eyck and the extraordinary art work Kijk Uit/Attention by Krijn Giezen. A stroll through the sculpture garden is always a surprising voyage of discovery.

(from the Kröller-Müller Museum website – www.kmm.nl)

This choice provides a cultural context through its art exhibitions and involvement with the artistic and architectural world, and a natural environment through its garden landscape, and location in greater area of the national park.

An intensely urbanized cultural context would have challenged and questioned a non-utilitarian structure, while a completely natural/wild setting would have alienated the architectural structure by its isolation from supporting facilities.

above: existing pavilions in the Sculpture Garden - the Aldo van Eyck pavilion and the Rietveld pavilion

left: images of the existing landscape in the garden - courtesy of West8 Architects

below: illustrations of the artistic context at the Kröller-Müller garden
left: plan of the designated areas in the Kroller-Muller museum and garden - designed by West8 Architects

right: detail of the garden plan showing the selected site for the pavilion and the local distribution of designated areas
SITE PLAN VIEW - picnic area, Memory garden and the pavilion
The pavilion is addressing the visiting public of the Kroller-Muller Museum and Sculpture garden, and as other pavilions in the garden, will be open to viewings throughout the year. It will be in the administration of the museum and will depend on the supporting facilities provided by the museum. In order to cover maintenance and administrative costs, the pavilion will be designed also as a potential venue for happenings and installations of artists, selected by the museum board.

Background information for the pavilion will be available at the museum's information desk and gift shop, allowing for the visit to be as individual and uninfluenced an experience as possible. No guide for a visiting route should be provided, nor plates to explain each stage of the visit in the pavilion. The printed information will provide further insight to the experience, but will not constitute as a prerequisite for the visit.

The site available for the construction of the pavilion is an area of approximately 400 m² in the south-western corner of the garden, for which a maximum built area of 45% of the available surface was considered. The design of the pavilion is to not interfere with any existing vegetation or artworks, and is to incorporate the established access points to the site. Construction height is to be restricted to 2 levels (not exceeding 8 m) and a density index of 0.6.
TOP VIEW OF THE PAVILION
WEST ELEVATION - atmospheric rendition
picture gallery featuring the physical model of the pavilion (scale 1/50)
This project began with the aim of finding out whether there is a connection between one's psychological space and the architectural expression one produces - and if so, what is it that links them?

In the hypothesis of this research, a possible connection was formulated, through means of psychological functions. The theory research and case studies contributed to the concretisation of these notions, and also provided me with an understanding of how the functions inter-relate within a given spatial frame.

Once the connections between the psychological and the architectural space were defined as instruments of analysis, they needed to be illustrated through a specific design. At this phase in the project it was apparent that even though some links were previously made - albeit on an intuitive level - now that the elements of correlation were defined and concretised, the connections became deliberate and explicit.

This, however, presents some unexpected implications: due to the fact that the connections become increasingly defined, it may also be that some of the mystery surrounding the creational process is dispersed, and the inner world of the architect/designer becomes that much more exposed to scrutiny.
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C.G. Jung, in his theory of individuation, identifies five different ‘divisions’ of the psyche, which he calls ‘archetypes’: persona, ego, shadow, anima/animus, and the self. They are essentially psychological functions that make up the individual’s mythology. They are often discussed in terms of personifications encountered in dreams, but also in the collective mythology of stories and tales, mainly defining patterns of action.

Persona is the interface we present to the world, a necessary mask we wear in order to interact with others. This mask can change from one level or circumstance of interaction to the next, but it can never comprise the full complexity of any one person.

The Ego is the centre of consciousness, in charge of the identity of a person, but has little say in the domain beyond the boundaries of consciousness. This domain, the unconscious, has two archetypes – the Shadow and the Anima/Animus.

The Shadow is the depository for all that which the conscious functions have disowned – such a collection of unknown entities can only but discourage any attempt of investigation or charting, yet not all its components are of a negative value.

At the heart of this domain is the Anima/Animus, the only ‘engendered’ function of the psyche. Jung described it as the ‘Soul Image’ constructed to be the total opposite of the ego. His belief was that if one manages to create a link between the conscious functions and their Soul Image, that person will gain a clear understanding and access to their self – which brings us to the final archetype of the psyche: the Self. It is simply the core of the psyche and the unified totality of all the functions of the psyche – a paradox that, Jung points out, is very difficult to accept for the Ego.

The process of individuation is the very ‘road to self’ through all these layers that surround it, but the self is a core as well as the sum of all the ‘archetypes’ of the psyche. This inner recursivity, experts indicate, is due to Jung’s personal interest in ancient Chinese philosophy and is most likely influenced by his own personal struggle. Nonetheless, Jung’s divisions of the psyche are well-defined notions, each with its own ‘function’, and still very actual notions in the field of psychology.

Thomas de Quincey, “Confessions of an English Opium-Eater” (1820):

“Many years ago, when I was looking over Piranesi’s Antiquities of Rome, Mr. Coleridge, who was standing by, described to me a set of plates by that artist ... which record the scenery of his own visions during the delirium of a fever: some of them (I describe only from memory of Mr. Coleridge’s account) representing vast Gothic halls, on the floor of which stood all sorts of engines and machinery, wheels, cables, pulleys, levers, catapults, etc., etc., expressive of enormous power put forth, and resistance overcome. Creeping along the sides of the walls, you perceived a staircase; and upon it, groping his way upwards, was Piranesi himself: follow the stairs a little further, and you perceive it come to a sudden abrupt termination, without any balustrade, and allowing no step onwards to him who had reached the extremity, except into the depths below. ... But raise your eyes, and behold a second flight of stairs still higher: on which again Piranesi is perceived, but this time standing on the very brink of the abyss. Again elevate your eye, and a still more aerial flight of stairs is beheld: and again is poor Piranesi busy on his aspiring labors: and so on, until the unfinished stairs and Piranesi both are lost in the upper gloom of the hall. ...”

A3:

Excerpt from the guidebook for Castel Sant'Angelo, page 22-25 – as published by Electa, under the supervision of the Suprintendent Speciale per il Polo Museale Romano, in 2003.

"[...] we still have no clear idea of the form and decorations of the original structure, due to the continual additions – and subtractions – made over the course of the centuries. That difficulty is particularly clear in the upper part; this suffered most when the structure was converted into a papal residence and none of the innumerable theories put forward as to its original appearance have yet been confirmed beyond any reasonable doubt. The overall structure was a skilful composition of parallel-sided and cylindrical volumes raised upon each other, with the various levels characterised by different circumferences or linear perimeters. In front of the mausoleum stood bronze gates fixed to pilasters resting on peperino foundations; work on the Tiber embankment in 1891-92 unearthed not only these foundations, but also the travertine threshold and two pilasters which stood at the entrance and probably supported gilded bronze peacocks (symbols of immortality, two of these latter have survived and can now be seen in the Cortile de la Pigna in the Vatican). The enclosure wall ran around a brick-built base that stood 15 meters high and formed an 89-meter square, which – for reasons we do not know – was added immediately after the completion of the structure. Within that base were radial walls that ran from around the drum, forming long vaulted enclosures that were surmounted by terraces. The outer walls were faced in slabs of white marble framed by pilaster strips decorated with frieze of festoons and bucrania [ox skulls]; fragments of these can now be seen in the Castle Museum. Procopius tells us that at the four corners of the basement stood bronze sculpural groups of men and horses – perhaps works that Hadrian had brought for Greece or the Middle East – whilst the different levels of the south-facing river front, which included the monumental entrance with its triple barrel vault, were decorated with marble plaques bearing the epitaphs of imperial personages buried within the mausoleum.

[...]

Immediately opposite the entrance stood the large cylinder of the mausoleum proper, which now forms the lower part of the Castle: 21 metres high and 64 meters in diameter, it was a rough-mix concrete [opus incertum] faced with blocks of tufa, peperino and travertine, and an outer covering of marble slabs; it may also have had pilaster strips and been surmounted by statues. What remains of the drum is a massive inner core, with just some remnants of the precious stone facing (most of which had already been stripped away in ancient times). The central vaulted corridor (dromos) is, however, well preserved. Made of precisely-aligned blocks of travertine, it leads to a square atrium, where a large semicircular apse in the end wall would seem once to have housed a colossal statue of Hadrian (only the head has survived, and can now be seen in the Rotunda of the Vatican Museum). One other niche – this time rectangular – opens on to the left side of the vestibule, forming part of a Greek cross layout that was similar to that observed in the shrines to Mithras; as one can see from the holes for the metal brackets, all the walls were faced with ancient yellow (Numidian?) marble. On the right begins the helicoidal ramp that is a characteristic feature of the structure, running up to the next level in one complete circuit of the cylinder. The ramp passageway, three meters wide and six high, has a dry-stone vault and for one stretch brick cambering; it was perhaps faced with stucco. Parts of the white mosaic of the original floor are still visible, though mainly one now sees the underlying opus signum [compressed rubble]. The walls must have originally been faced with marble up to a height of three meters, where a uniform groove has been interpreted as the fitting for a cornice.

[...]

Four vertical shafts in the vault provide light and air, and may also have served to collect rainwater, which was then carried away by a gutter that runs under the ramp. It has been argued that the openings had an important functional role during the building stage – for the raising of materials from one level to another – but it is more evocative to view them as telescopes focused on the heavens above. They are in fact aligned with the four cardinal points of the compass (M.M. Alessandro). One hundred and twenty-five meters of ramp brings one through 360° and up a dozen meters from the atrium, then it leads into a corridor that runs the diameter of the drum (like the entrance dromos) into the large room that stands at the centre of the monument and probably housed the earthly remains of the emperor. The present-day incline – a graded ramp created in the last years of the fifteenth century by Pope Alexander VI – changes the perception of what should have been the final approach aproach to the funeral chamber (which like he atrium has a layout which recalls that of mithraea). Eight meters square, that sepulchral cella still
remains austere and solemn in spite of the changes that have been made over centuries. [...] Today, two large air-vent windows at the sides of the barrel vault admit unintended amounts of light into the room, whose un-mortared walls are made of precisely-cut blocks of travertine with three arched rectangular niches (two to the sides, one at the end) for the cinerary urns of Hadrian, Sabina and Helius Caesar.

[...]
The urn chamber is surmounted by two or three rooms at different levels, which are all that now remains of the Roman tower, the fulcrum of the architectural appearance and the static equilibrium of the whole complex: remnants of the walls and layout of these original rooms can be seen from the Theatre Courtyard and the Court of Honour, east and west of the main block. Even the most recent archaeological studies have not been able to identify how these upper levels were reached; nowadays, access to the tower is solely via rooms and corridors that date from the sixteenth century. In layout, the Chamber of Justice is broadly similar to the Urn Chamber below; built on un-mortared stone blocks, it must initially have been very high, given that the fresco on the north wall appears to have been cut away at the top. In its turn, the lowered barrel vault of this room serves to support the much higher, domed rotunda above, the Treasure Chamber. Here, behind the wood shelving that dates from the first half of the sixteenth century one can still make out the Roman brick wall-facing with its load-bearing arches. Above, the tower must have ended in a fourth room enclosed by a narrow elliptical corridor, which served to reach the top of the mausoleum and is still visible today: as one can see from the parts left un-plastered, the interior of the Roman structure is substantially intact. [...] The layout of the upper part of the monument was undoubtedly circular, which suggests that the outward decoration was also cylindrical and probably consisted of a colonnade. It is also possible that the structure beneath was another cylindrical drum, even if the room within it is a square in ground-plan: after all, the Urn Chamber and Vestibule are Greek Cross even though contained within a circular structure. Hence, it would appear that the mausoleum was made up of a square basement supporting three cylinders of diminishing diameters – rather like a wedding cake – and that was probably enclosed with colonnades or had niches for statues. [...] (Nunzio Giustozzi)