

Analysing Emotiveness in Architecture by decoding ‘Poetics of space’

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Abstract— ‘Poetics of space’ is the ability of spaces to evoke strong emotions in people. This paper decodes different poetic qualities of spaces and explores in detail ‘emotiveness’, one of the five derived poetic qualities. Emotiveness deals with human emotions. Different elements in space evoke different emotions. The research dissects the ‘Basic model of emotions’ by Pieter Desmet and links the intangible emotion to the tangible ‘emotiveness in architecture’. Case examples of selected typologies of architectural spaces which are claimed to be emotive are studied and analysed, and various emotive elements and their aspects are identified. Apart from reports, articles and video documentaries of the selected case studies, the top user-stated reviews of the case examples are also studied for identifying the emotive elements. This paper identifies spatial elements as stimulators of different emotions - form, material and texture, colour, light, scale & proportions, etc. - which induces that state of feeling. The paper details how single or multiple interactions of these emotive elements give rise to the identified emotional responses in the users.

Keywords— *Poetics of space, atmosphere in architecture, emotiveness, emotion*

I. INTRODUCTION

In his book *‘The Poetics of Space’*, Gaston Bachelard [1] explains ‘Poetics of space’ becomes alive- “...where one can dive into the deeper essence of being in the environment, one’s feeling of experiencing that space to an extent where space being the metaphorical partner to speak to, a place for invoking deeper meaning and thoughts of the environment.”

The built environment plays an important role in how people perceive things around them and how they move along and comprehend what to do next. People live and visit a lot of built spaces. Often, they tend to adapt to the spaces more than the spaces engaging them. Most of the time they suppose themselves to be in space through their preception of it. Humans can appreciate, reject or celebrate spaces within microseconds of perception. Peter Zumthor in his book *‘Atmospheres’* describes the atmosphere as an aesthetic

category, and quality architecture is the one that moves people's feelings [2].

Poetics of space is the ability of a space to evoke strong emotions in people.

The paper aims to explore different key factors of poetic spaces, analyse one of the qualities in detail and understand how spaces can be designed to evoke emotions. Diving into the etymology, theories and principles related to poetic architecture and explaining the categories of poetic architecture leads to the research direction. Poetic architecture is the art of shaping, composing, and assembling different construction elements resulting in a livable form. The paper reviews and studies the particular poetic quality and builds upon from the understanding of the quality and identifies its key parameters and aspects in architecture that are responsible for the emotions.

II. METHODOLOGY

The method applied to decode the poetics of space is first to identify the experiential qualities that have similarities concerning the principles of poetry and the principles of architecture. The similar elements are then studied and the derived qualities are translated to poetic qualities of spaces. An additional layer of supporting data is collected from the user-stated reviews, reports and articles on the spatial experience of such case examples. The second objective is to study and understand the concept of one selected poetic quality in detail and to identify its key factors using similar methods. Finally, an explorative and comparative analysis is formed with inferences that include various spatial elements that yield to the richness of the experience of the spaces from the studied case examples.

III. POETIC ARCHITECTURE- CLASSIFICATION & PRINCIPLES

Zabetas [3] explains Poetic Architecture as the art of shaping, combining and assembling construction materials in a way that makes it poetic- that creates a sense of emotion either due to the beauty of construction or the construction of beauty. Users have a major role in pointing out poetic architecture. There are widely accepted architectures that are established to be poetic, that have moved people and left them to engage in

that space. Where people engage is where the architect is successful. It requires individual architects to surface their knowledge on how people perceive architecture and help others connect or relate to their deeply internalised knowledge. From the principles of poetry and the principles of architecture, it is found that there are similar elements and hence the principle of poetic architecture is derived.

Poetic Architecture can be explained in two different categories, where one ends the other starts. Spatial Poetics and Poetic expressions in Architecture. The poetic expressions in architecture deal solely with the idea of creation, of craftsmanship, of art. It deals with the idea of literature to facture, where spaces concentrate the poetic imagination. For poetry, the language is about a person, an object, a context and so on, where things are revealed or concealed, evoking interest and curiosity. Architecture is a language in itself expressed through forms, functions and aesthetics and something beyond that leads to the experiential qualities also. Besides, poetics allows the user to get excited, to enjoy, to celebrate the space. Poetics allow the user to mourn, to anticipate, to contemplate making way to their inner knowledge. The unique emotiveness in architectural spaces also enables poetic experiences.

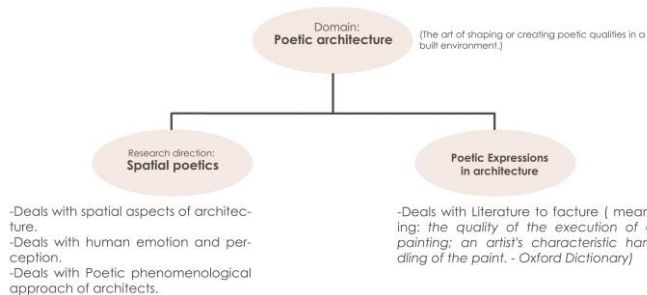


Figure 1- Classification of Poetic Architecture
Source: Author generated

IV. DECODING 'POETICS OF SPACE'

The realm where poetry, art and imagination reside is where people find engaging. Whereas, architecture has the innate ability of its space, configuration and arrangement to relate to the substantial user experience. The word '*feeling*' might be subjective to each human being when comes to experiencing the subject matter. Architects grapple around the issue of how the user is going to experience the space, the realm of idea and reality. While there are numerous pieces of architecture being constructed every day around different parts of the world, there are countable pieces that have '*engaged*' people. The poetic phenomenology is the cause for the quality of those spaces. The characteristics of poetic spaces distinguish them from other architecture in stimulating human beings. Recurring justification in design through the mechanics of functionalism lowers and gradually lead to the loss of the quality of that space.

From the principles of poetry and architecture, the principles of poetic architecture are derived. Taking into consideration

the widely accepted poetic spaces, the following five poetic qualities are identified from the experiential richness of architecture:

- **Emotiveness**- This poetic quality deals with human emotions. It is derived from the poetic principles of architecture where the different elements yield to the excitement of various emotions.
- **Desirableness**- This poetic quality deals with the arousal of desires and longingness in a human being. Like desires are very effectively described in poetry and art, the realm of architecture also enables longingness and desires.
- **Timelessness**- This poetic quality highlights the permanent mark of an impression on humans. Such as in poetry, architecture that creates an everlasting impression on the visitors is relevant till the end of time.
- **Appreciation**- This poetic quality provides the user with a way towards deeper thought and is an ability to readily bestow meaning that is greatly appreciated. It is a vital role of architects to create spaces that hand down worthy values to future generations similar to how poetry establishes its values.
- **Adaptiveness**- This poetic quality is the ability of the spaces to provide a sense of inclusiveness or adaptiveness through ease, responsiveness, and adaptability as key factors that cater to different human needs respecting all genders, castes, ages, and races.

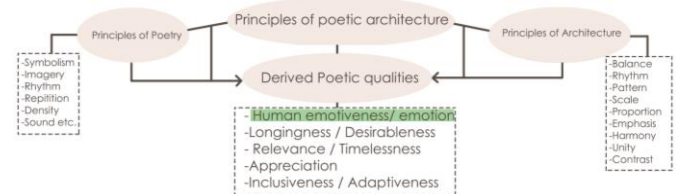


Figure 2- Derived Poetic qualities
Source: Author generated

V. EMOTIVENESS

Emotion is a state of feeling. Emotive means a state of causing emotion or strong feelings. Whereas emotiveness is expressing the emotion which in the case of a space is the spatial element that symbolizes the emotion or excites the emotion in people. American psychologist Dr Robert Plutchik proposed that eight primary emotions serve as the foundation for all others: joy, sadness, acceptance, disgust, fear, anger, surprise, and anticipation [4].

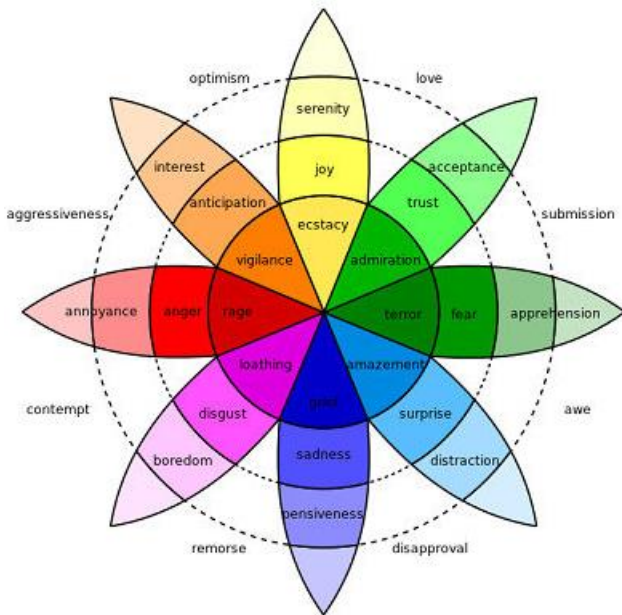


Figure 3- Plutchik's wheel of emotions
Source: Plutchik (1991) *The Emotions*

Emotion is defined as an episode of interrelated, synchronized changes in the state of all or most of the five organismic subsystems in response to the evaluation of an external or internal stimulus event as relevant to major concerns of the organism [4].

Internal stimuli are changes to the conditions inside the body, whereas external stimuli are changes to the conditions outside of the body. Here, architectural space/ any spatial element or the combination of elements is the external stimuli. This research explores and dissects the 'Basic Model of Emotions' put forward by Pieter Desmet [5] in which he describes the emotion process as when a stimulus excites emotion, a particular emotion is experienced.

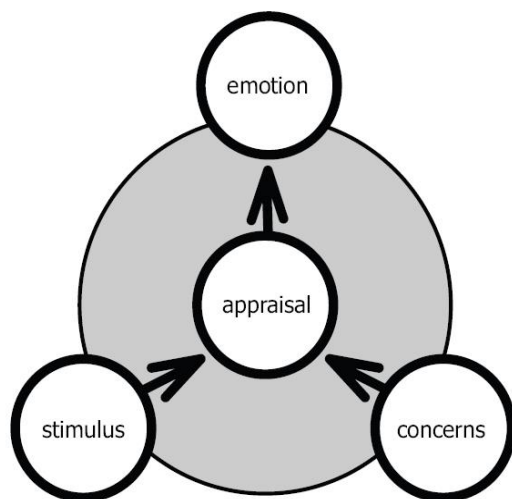


Figure 4- Basic Model of Emotions
Source: S. (2020, October 22) *Experiencing Architecture*

A building or any architectural space evoke emotion only when it is appraised in a way that is relevant to the person's concern.

VI. EMOTIVENESS IN ARCHITECTURE

Spaces that can achieve our emotional response can be aptly designed and defined by studying the degree of emotiveness it bestows on us. This degree of emotion can be achieved through understanding the bridge between architecture and the user experience. Besides, emotions are acute and when happens it exists for a short period. The cause for emotion can be internal as well as external stimuli. By interpreting the bridge between emotion and emotiveness, the cause is an external stimulus which can be the environment, a sight in front of us etc. Thus, emotion is an intangible aspect that is caused by a tangible architectural aspect that is emotiveness which in turn excites the sensorial ability of perception.

A. Linking the intangible to the tangible

From Pieter Desmet's 'Basic Model of Emotions', the intangible experience or response, that is, the emotion is linked to the tangible cause, that is, the emotive element in architecture which is the reason behind the stimulation.

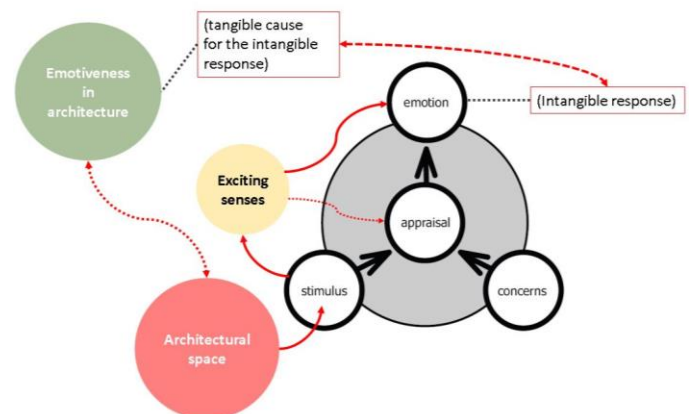


Figure 5- Linking the intangible to the tangible
Source: Author generated

B. Arriving at the parameters

By studying various literature works, the external stimuli, that is, the emotive elements are identified. Table 1 shows the particular case examples used for identifying the parameters of emotiveness in architecture.

Table 1- Supporting data collected from the works of literature for arriving at the parameters of emotiveness

Source	Particulars	Quality of the example given
<i>Architectural Digest</i> 2017 [6] (Article)	50 Iconic Buildings around the world	Architecture that 'moved' people
<i>Poetics in Architecture</i> [7] (Issue of AD, Vol. 72, March 2002)	Examples from <i>The Poetics of Space</i> by Gaston Bachelard	The different poetic quality of spaces
<i>Understanding the Poetics of Architecture</i> [8] (Report- Soni, 2010)	Tadao Ando's <i>Church of the Light</i> and Louis I Kahn's <i>National Assembly Building in Dhakka</i>	Spaces that engage the users and their emotional response to the space

As an additional layer of information from the user-end, the universally accepted emotions the particulars provide are studied by analysing the top 100 reviews of people who have visited those buildings. Nevertheless, the emotions gained from the exterior and the interior of a building depends on the building. The degree of emotion a building puts out on the user depends on the degree of emotiveness of the architectural space. That is, it can be either the exterior or the interior or both, giving a flash of emotions within moments.

C. Parameters of emotiveness

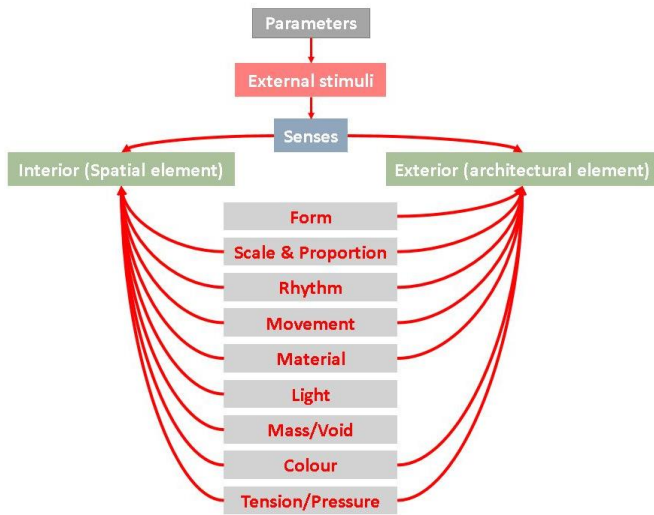


Figure 6- Parameters of emotiveness

VII. CASE STUDIES & INFERENCE

A. Selection of case studies

From the wide variety of available case examples addressed in Table 1, one case study of each typology is chosen to analyse how similar parameters (E.g.: The use of 'Light' which is an identified parameter in different typologies evoke different emotions and emotional ranges when we study and analyse them) of emotiveness is used in different architectural typology and the range of emotions that is evoked by the use of that parameter and its architectural aspects in those buildings.

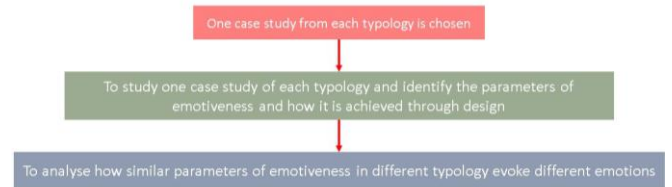


Figure 7- Methodology used for selection and analysis of case studies

The selected Literature case studies and their typologies are given in Table 2 along with the architect of the respective architectures.

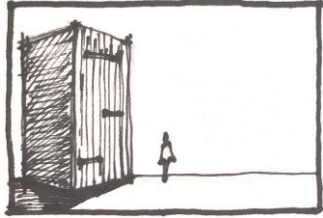
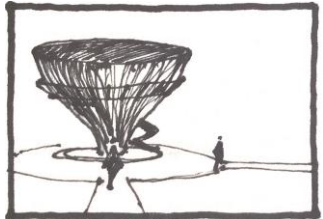

Table 2- Selected case studies


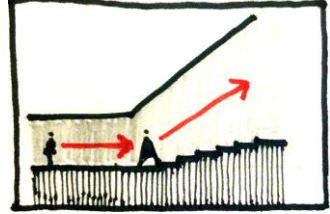
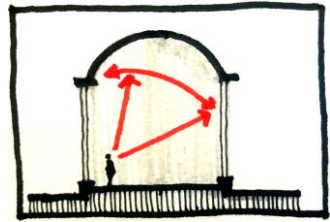

Sl. No.	Literature case study	Architect	Typology
1.	Church of The Light	Tadao Ando	Religious (Christian)
2.	The Jewish Museum	Daniel Libeskind	Memorial Museum
3.	Niterói Contemporary Art Museum	Oscar Niemeyer	Art Museum
4.	National Assembly, Dhakka	Louis I Kahn	Institutional
5.	World Trade Center Transportation Hub	Santiago Calatrava	Transportation hub
6.	Fallingwater House	Frank Lloyd Wright	Residential
7.	Pantheon	Emperor Hadrian	Monument
8.	The Therme Vals	Peter Zumthor	Recreational

B. Inference

After analysing the eight selected case examples in detail, a general inference regarding the different emotions evoked by the identified emotive elements and their aspects have been obtained. The emotive element and the emotions each can cause in different ways are explained briefly in Table 3.

Table 3- Inference from the case study analysis

Parameter of emotiveness	Inference
Form	 <p>Figure 8- Illustration-1 Source: Author generated</p> <ul style="list-style-type: none"> A fully covered massive structure with minimal openings that do not reveal the interior of the building can create anticipation in people before going inside.  <p>Figure 9- Illustration-2 Source: Author generated</p> <ul style="list-style-type: none"> Geometric forms, especially curvilinear/ sculptural forms stimulate more interest and awe in people rather than normal uniform structures.  <p>Figure 10- Illustration-3 Source: Author generated</p> <ul style="list-style-type: none"> Forms that compliment the natural context induces awe and submission.

	 <p>Figure 11- Illustration-4 Source: Author generated</p> <ul style="list-style-type: none"> Huge columns compared to the surrounding context symbolize power & presence and induce awe and admiration in the visitors.
Scale/Proportion	 <p>Figure 12- Illustration-5 Source: Author generated</p> <ul style="list-style-type: none"> Changing scales and proportions of spaces with movement can create anticipation and interest.  <p>Figure 13- Illustration-6 Source: Author generated</p> <ul style="list-style-type: none"> Massively scaled spaces can create a sense of awe.  <p>Figure 14- Illustration-7 Source: Author generated</p> <ul style="list-style-type: none"> Human-scaled spaces can offer a sense of inclusiveness and serenity.

Light

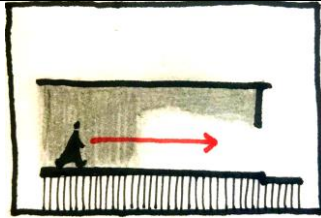


Figure 15- Illustration-8
Source: Author generated

- Humans tend to follow the path of light. So moving from darkness to light can create a series of emotions ranging from anticipation to interest and finally.



Figure 16- Illustration-9
Source: Author generated

- Darkness with only slit opening of lighting in spaces can induce negative emotions such as fear and often sadness in people. It can also induce anticipation and interest in some cases.

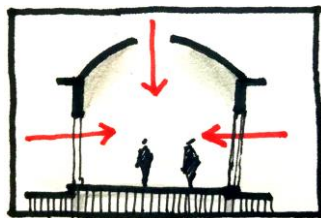


Figure 17- Illustration-10
Source: Author generated

- Well-lit spaces can improve visibility and create positive emotions ranging from awe, appreciation, joy, trust and hope.

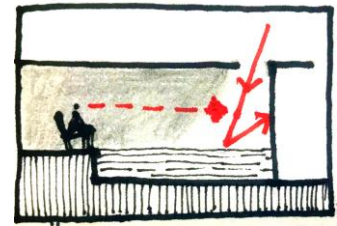


Figure 18- Illustration-11
Source: Author generated

- Spaces that offers natural light reflections on surfaces can induce positive emotions like joy and serenity.

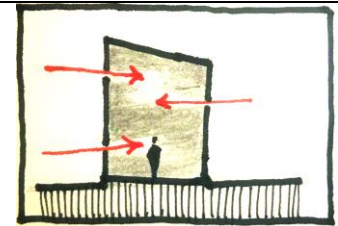


Figure 19- Illustration-12
Source: Author generated

- Dark and unusual façade covering material like titanium zinc allows minimal light spreading inducing a sense of interest in people.

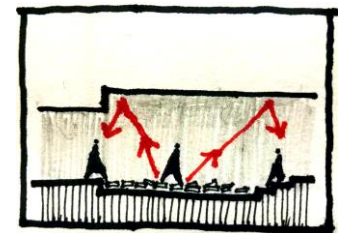


Figure 20- Illustration-13
Source: Author generated

- Materials that produce sounds while walking over or when touched can produce either positive or negative emotions depending on the situation and intention of the space.



Figure 21- Illustration-14
Source: Author generated

Material

- The use of glass facades can enable transparency and thereby blend with the context/ site utilizing visual site experiences which in turn induce a sense of awe and joy.



Figure 22- The Libeskind building's titanium-zinc façade (The Libeskind Building, n.d.)



Figure 23- National Assembly Building aerial view (rethinkingthefuture.com)

- Single material dominance-structures provide a sense of power & presence thereby inducing acceptance and trust.



Figure 24- Living room- Fallingwater (designingbuildings.co.uk)

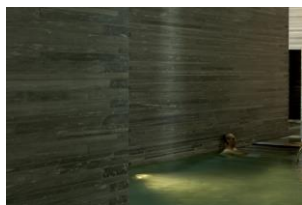


Figure 25- Interior Bath- Thérme Vals (archdaily.com)

- The materials used for buildings that resemble nature and with natural texture induce awe and joy in most people.
- The feeling of the natural texture of materials of spaces can provide a sense of serenity and submission.

Movement

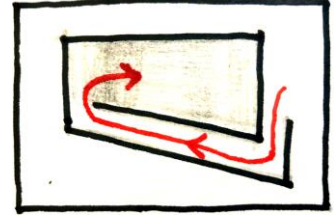


Figure 26 Illustration-15
Source: Author generated

- Manipulative and indirect directions towards a space through passages enables stimulated movement in the visitors creating a series of emotions ranging from anticipation to awe, serenity and trust.

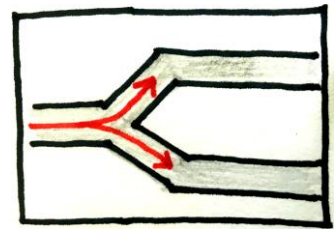


Figure 27- Illustration-16
Source: Author generated

- Multiple axes enable the visitors to choose the direction of movement creating interest.



Figure 28- Illustration-17
Source: Author generated

- Spaces that have no reference point and slope at the same time can create a sense of insecurity & disorientation thereby can induce fear.

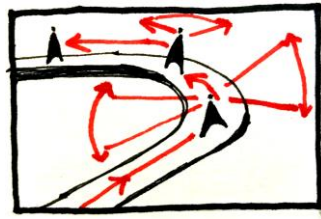


Figure 29- Illustration-18
Source: Author generated

- The circular movement of the visitor through the pathways enables them to gaze through different changing frames and induces a sense of appreciation of the spaces.



Figure 30- Illustration-19
Source: Author generated

- The spatial configuration can enable stimulated movement or sometimes can give the impression of space moving by using different geometrical configurations inducing interest and awe.

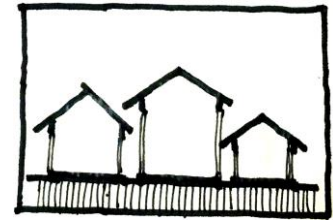


Figure 32- Illustration-21
Source: Author generated

- Spatial compositions that compliment the surrounding context can also create a rhythm and induce a series of positive emotions.

Colour

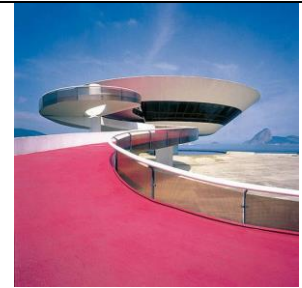


Figure 33- Red band ramp of Niteroi Contemporary Art Museum (rethinkingthefuture.com)

- The use of bright colours can attract the eyes towards it quickly which in turn can trigger opposing emotions to happen depending on the intention of the space.

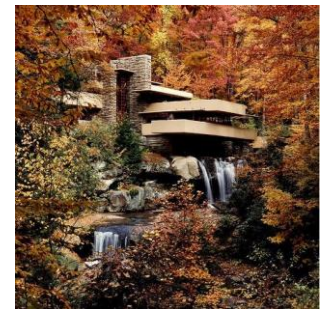


Figure 34- Fallingwater (archdaily.com)

- The use of colours that represent nature in spaces can induce positive emotions like serenity and submission.

Rhythm

- The structures that are in rhythm with the surrounding context can create a sense of admiration.

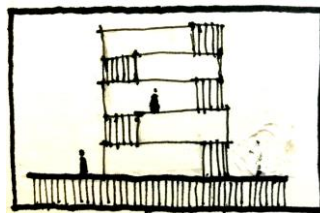
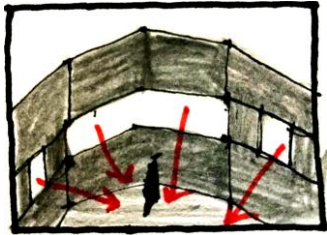


Figure 31- Illustration-20
Source: Author generated

- The unique compositions of structural elements in a particular sequence can create a sense of interest in people.

Mass/ void	 <p>Figure 35- Illustration-22 Source: Author generated</p> <ul style="list-style-type: none"> • The duality of solid and voids in a small space can create an impression of vastness and also enables the designer to play with the volumes and can trigger opposing emotions to happen depending on the intention of the space. • Minimal openings in large spaces can create fear and anticipation. • Creating spaces with geometrically shaped voids offer different compositions to the spaces creating interest.
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From Table 3 it is found that the interior architectural spaces speak more of emotiveness than the exterior of the building. From the study and analysis of emotiveness which is a poetic quality of space, it is observed that certain stimuli (i.e. the emotive elements) are present in different architectures that cause the space to evoke emotions in people in different ranges. Similar parameter of emotiveness that has been identified in different typologies can evoke different kinds of emotions by using them in different ways to create emotive spaces.

VIII. CONCLUSION

People tend to engage in spaces that have experiential qualities in them. Those spaces where humans realize their ability to engage, to celebrate, to enjoy, to get excited or to mourn, to anticipate, to contemplate are those with characteristics that make users act that way. Poetics is the ability of a space to evoke and excite the senses and create strong emotions in people and that answers the initial research question. Further, through this research, the various definitions and theories related to poetic architecture and poetics were explored and based on which the classifications of Poetic architecture are derived. The research is then solely directed towards spatial poetics which deals with the user-experience aspects of architecture from which 5 poetic qualities of spaces are derived and 'emotiveness' was studied in detail among them. By exploring various case studies and reports of architectures claimed to be emotive and from the user-stated experiences parameters of emotiveness and their aspects are derived. A

detailed analytical study of selected case examples of selected architectural typologies are done and similar emotive elements of different typologies are compared and analysed.

Architecture is not merely an art of creating spaces but it is also an art of creating emotions. Emotion is a personal experience and architecture has a major role in the response of human reactions which in turn is generated from an individual's perception. Poetics opens to the social and user-end involvement in creating meaningful and impactful architecture. Emotions occur when spatial elements stimulate the senses of people. Spatial symbolism of emotions through form, material and texture, colour, light, scale & proportions etc. induces that state of feeling. The user responses are the result of single or multiple interactions of these emotive elements of space.

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