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### The Disparity of Aesthetic Preferences Regarding Residential Spaces from Different Professionals in Pandemic Situation

<sup>1</sup>Pashmeena Tarale, <sup>2</sup>Dr. Asawari Bhawe-Gudipudi, <sup>3</sup>Dr. Parag Narkhede

<sup>1,2,3</sup> School of Education and Research, MIT Art, Design & Technology University, Pune,  
Maharashtra, India

Email: <sup>1</sup>pashmeenatarale@gmail.com

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#### ABSTRACT

Residence means space of protection, comfort, convenience, healthy living, and wellbeing to humans. The COVID 19 has taught us that house is the safest place when nothing else but life matters. Human beings can adapt and survive any situation, whether working from home, long-distance education, living without assistance. This research is carried out to analyze the preferences of different professionals on the residential spaces and to find out the universalities in aesthetic preferences. The methodology used is a literature survey, observation of community behavior through digital mediums, and an online questionnaire survey of 233 students, architects, and non-architects. The results indicate that there are some commonalities between the preferences; as far as subjective preferences or functional needs are concerned; designer has to understand the client's requirements. Responses dependent of respondents and limited to Indian Context. In other geographical contexts, researchers are encouraged to compare the findings.

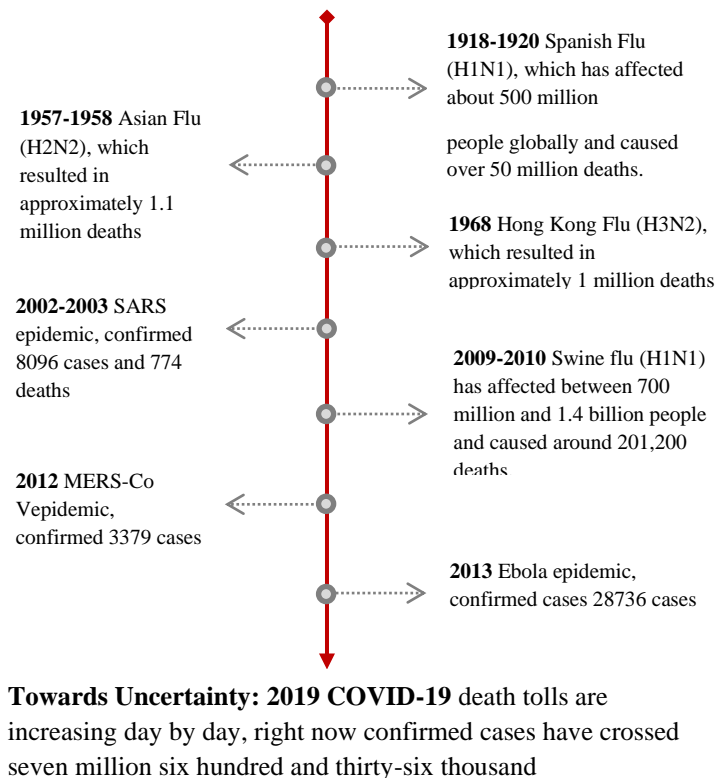
#### 1. Introduction

“A bicycle shed is a building; Lincoln Cathedral is a piece of architecture. Nearly everything that encloses space on a scale sufficient for a human being to move in is a building; the term architecture only applies to buildings with a view to aesthetic appeal” (Pevsner, 1963).

Lincoln Cathedral is a landmark that's meant to be visible. In contrast, bicycle shade is a functional commodity, but if a bicycle shed is designed with an aesthetic appeal, it is architecture. The aesthetic appeal gives pleasure to human perception. Wright desired the residential space to be aesthetically and functionality enriched without sacrificing anything (Smith, 2017), and his

emphasis was on “harmony, spirituality, and geometric simplicity” (Silzer, 2019). He emphasized that the goal of an architect is “to help people understand how to make life more beautiful, the world a better one for living in, and to give a reason, rhyme, and meaning to life.” If you look at the architectural movements from the last two centuries, you would realize beauty/aesthetics is changing from time to time depending upon spiritual, political, technological, socio-cultural, environmental and economic aspects. There are common generalizations “beauty is in the eye of the beholder.” or “there is no accounting for people’s tastes,” implying that taste is random, as variable as people are. Another erroneous conclusion is that preferences are superficial or whimsical, it would be good to have a vase full of fresh flowers, but you will probably survive without it (Kaplan & Kaplan, 1989). The preferences of people indeed vary. Diversity is noticeable around the dining table at home or in a restaurant concerning culinary tastes. Consider photo frames on the walls; they can be grand, personal, awe-inspiring, tranquil, commonplace, wild, tame, representational, and abstract. A custom frame store gives a summary of this diversity. Still, at the same time, there are some commonalities exists because of typical brain structure and common gross experience (and not universal on the smaller findings which will vary per brain structure). According to Kant, “beauty is subjective and universal”; thus, not everything things, but particular things are appealing/beautiful to everyone (Kant, 1987). The disparity between the preferences of architects and non-architects are often studied based on the perception of building, facades, and housing and concluded that there are disparity of some preferences between architects and non-architect (Ghomeshi & Jusan, 2012; Gifford, Hine, Muller-Clemm, Reynolds, & Shaw, *Decoding Modern Architecture: A Lens Model Approach for Understanding the Aesthetic Differences of Architects and Laypersons*, 2000; Gifford, Hine, Muller-Clemm, & Shaw, *Why Architects and Laypersons Judge Buildings Differently: Cognitive Properties and Physical Bases*, 2002); but in this study pandemic situation is same for all the people; everyone in this country are forced for long term containment from highly contagious COVID-19. The study critically analyses effects of pandemic physical wellbeing on individuals and their disparity of preferences.

## 2. Pandemic Situation



**Figure 1: Timeline of Major diseases outbreak occurred in the last hundred years (Source: Compiled by author)**

The pandemic is defined as "an epidemic occurring over a vast area, crossing international boundaries, and usually affecting a large number of people" (Porta, 2014). The time line of major diseases is shown in Figure 1. World Health Organization (WHO) announced the outbreak of Novel Corona virus Disease (COVID-19) a pandemic on March 11, 2020. COVID-19 is highly contagious which requires 'physical distancing and long-term containment' to flatten the toll-graph until an appropriate vaccine is developed. Although the safest place considered for anyone is their home during the pandemic, the big question is 'Are homes designed for long-term containment?' The survey was taken when complete lockdown was implemented by Indian government. Everyone was in the same situation i.e. 'work from home', 'online education'. though the situation was different for medical professionals. While naming 'physical distancing' as a 'social distancing' has contributed to being unsocial in reality. Lack of patience, irritability, boredom, and a rise in stress levels make people under long-term containment more unsocial! Although physical distancing is a spatial condition and shall be fought back with appropriate spatial standards, designs, technologies, and techniques. In this pandemic, the economy dwindles globally; income reduces, prices for commodities skyrocket, lowered affordability, and non-availability of laborers or operators and service providers that will impact lifestyle preferences.

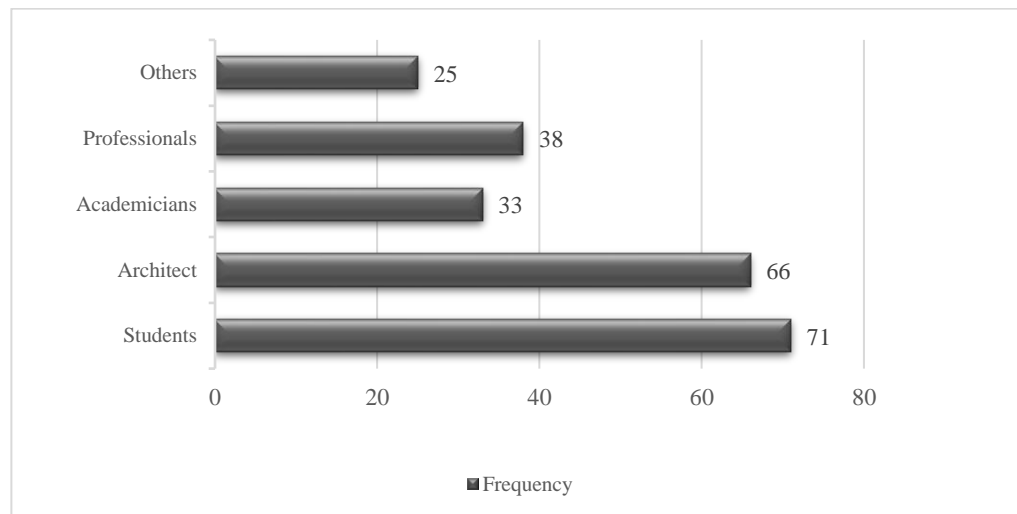
**Aim:** To analyze the disparity of preferences among students, architects, and Non-architects in the Pandemic situation and create a matrix for residential spaces that are delightful and functional for everyone.

### 3. Objectives:

1. To evaluate the disparities in the psychological wellbeing of individuals during the pandemic situation, COVID 19 based on the occupation of the respondents
2. To assess the disparities in additional spaces' preference in residential spaces from architects and other professionals
3. To examine the disparities in the perception of preferences in spatial alteration to accommodate the changes required due to pandemic based on their occupation
4. To understand the preference of hearing and olfactory senses in individuals in terms of pleasant sound and aroma.

### 4. Methodology

Methodology used for this research is literature survey, observation of community behavior through digital medium and an online survey of 233. “the most widely used instruments for studying aesthetics have been, and remain, scales of aesthetic preference, aesthetic response, and aesthetic judgment.” Online survey carried out at time of complete lockdown so that situation with every individual will be same i. e., ‘work from home’, though medical professionals from this study were working with full swing. Respondents are from a mixed professional group staying in urban and semi-urban areas from different states of India and further divided into three categories such as students, architects and non-architects for the study purpose Figure 2.











**Figure 2: Distribution of samples according to profession (Source: Authors)**






The age group of the respondents is divided into four categories namely 19 years to 45 years (74%), 45 years to 60 years (21%), and 60 years to 75 years (2%). Educational qualification of the surveyed varies from Baccalaureate (9%), Graduates (39%), Postgraduates (36%), and above Postgraduates (16%). The respondents are either from Institute Hostel rooms, Apartments, Independent houses. Respondents staying in Apartments and Independent houses are either from ‘nuclear family’ or ‘joint family’.

### 5. Procedure

Data collection for this study was done online using snowball sampling. The respondents filled out 15-minute questionnaire consisted of 10 close-ended and open-ended questions. Close ended questions were asked on ‘effects of Pandemic on psychological wellbeing’, ‘additional spaces preference in residential spaces’ on five-point Likert scale; ‘spatial alteration preference to accommodate the changes required due to pandemic’ were asked on seven-point Likert scale.

For Sight, Hearing and olfactory preferences following pictures were added in the questionnaire, and asked rate the preferences.

The chirping of the birds	Sound of the flowing water	Sounds of raindrops from the window	Musical Instrument
			
Children playing jovially	Musical Instrument	Sound of bells ringing together in a religious gathering	Sound home pets playing
			
Sound and Sight Preferences ( <i>Source: Compiled by Authors</i> )			

The smell of freshly made coffee	Aroma Candles	Incense sticks	Dried potpourri	Fragrant Houseplant
				
Olfactory Preferences ( <i>Source: Compiled by Authors</i> )				

## 6. Findings

1. The disparities in the psychological wellbeing of individuals during Pandemic situation based on the occupation of the respondents

Psychological well being	Student	Architect	Non-Architect	F value	p
Stress / psychological problems	2.32±1.07	2.05±0.95	1.90±1.00	3.719	0.026*
Discomfort from long sitting	3.01±1.2	2.24±1.13	2.23±1.07	11.911	0.000*
Desire for friendship	2.94±1.43	2.88±1.15	2.64±1.35	1.306	0.273
Meeting People	3.07±1.33	3.11±1.17	2.92±1.27	0.562	0.571
Confinement and lack of interest	2.68±1.2	2.36±1.11	2.2±1.11	3.632	0.028*
Lack of entertainment / engagement	2.63±1.27	2.32±1.19	2.08±1.15	4.304	0.015*
Lack of landscape in interiors	2.79±1.39	2.77±1.38	2.26±1.45	3.912	0.021*
Boredom	3.00±1.44	2.53±1.14	2.22±1.14	7.905	0.000*
Notes: Each item is measured on a 5-point Likert scale, M scores 3, and above 3 implies problems exist. * indicates differences are statistically significant					

**Table 1: Disparities in psychological wellbeing based on the occupation of the respondents (Source: Authors)**

Table 1 summarizes the results of the one-way ANOVA employed to study the differences in the psychological wellbeing of individuals due to COVID 19 pandemic based on their occupation. From the table, it can be suggested that there was a statistically significant disparity ( $p < 0.05$ ) between the students, architects and non-architects in terms of stress/psychological problems ( $F = 3.72$ ), discomfort from long sitting ( $F = 11.91$ ), confinement and lack of interest ( $F = 3.63$ ), lack of entertainment or engagement ( $F = 4.30$ ), lack of landscape in the interiors ( $F = 3.91$ ) and presence of boredom ( $F = 7.91$ ). However, there were no differences in opinion between the groups on the desire for friendship and meeting people during this pandemic time, implying that all of them irrespective of their occupation thought alike about the idea of friendship and meeting other people.

2. The disparities in additional spaces' preference in residential spaces from architects and other professionals.

There is a significant statistical difference ( $p < 0.05$ ) between the students, architects and non-architects regarding the preference for additional space during the pandemic time based on their occupation in terms of space for gardening ( $F = 5.58$ ), coffee table ( $F = 3.65$ ), courtyard ( $F = 13.29$ ) and indoor landscaping ( $F = 13.67$ ). All three group participants agreed to add place for exercise on priority basis ( $P > 0.05$ ) as determined by one-way ANOVA and presented in Table 2.

Preference for additional space	Student	Architect	Non-Architect	F value	P value
Gardening	5.04±1.63	4.97±1.77	4.21±1.98	5.584	0.004*
Place for Exercise	4.92±1.61	4.61±1.92	4.26±1.95	2.598	0.077
Coffee Table	3.79±1.99	4.09±1.81	3.31±1.91	3.653	0.027*
Courtyard	4.61±1.89	4.38±2.05	3.15±2.03	13.295	0.000*
Indoor Landscaping	4.61±1.54	4.53±1.9	3.32±1.92	13.669	0.000*

Notes: Each item is measured on a 7-point Likert scale, mean above 4 implies spaces participants would like to add on a priority basis in open area/ balcony/ terrace.  
\* indicates differences are statistically significant

**Table 2: Disparities of preference for additional space within residential spaces based on the occupation of the respondents (Source: Authors)**

3. Disparities in the perception of preferences in spatial alteration to accommodate the changes required due to pandemic based on their occupation

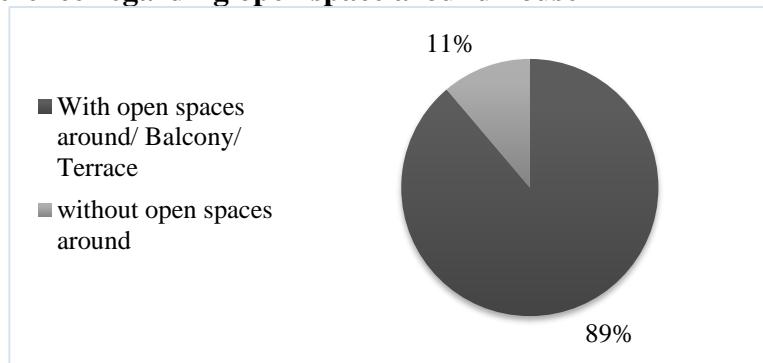
Table 3 demonstrates the disparities in the preferences regarding spatial alteration to accommodate the changes required due to pandemic based on their occupation as estimated using one-way ANOVA. Statistically significant disparities ( $p < 0.05$ ) were observed between the students, architects and non-architects i.e. life on the wall i.e. aquarium ( $F = 3.75$ ), landscape on walls ( $F = 7.07$ ), special color schemes ( $F = 6.17$ ) and large glazed window areas ( $F = 5.65$ ). Participants does not need spatial alteration in terms of lighting on the floor, Music as you walk digital walls and life on the wall (aquarium).

Spatial alteration preferences due to COVID	Student	Architect	Non-Architect	F value	p
Lighting on the Floor	3.01±1.86	2.91±1.95	2.80±1.91	0.254	0.776
Music as you Walk	3.10±1.89	3.15±1.84	3.08±1.82	0.027	0.973
Digital Walls	2.93±1.8	2.86±1.67	2.48±1.61	1.800	0.168
Life on the wall like an aquarium	3.48±1.8	3.14±1.9	2.72±1.69	3.753	0.025*
Landscape on Walls	4.34±1.8	4.49±1.89	3.51±1.84	7.074	0.001*
Special color schemes	4.79±1.93	4.88±1.82	3.97±1.89	6.169	0.002*
Large glazed window area	5.30±1.69	5.42±1.47	4.58±2.01	5.655	0.004*

Notes: Each item is measured on a 7-point scale, M scores 4 and above 4 implies spaces participants need spatial alteration  
 \*indicates differences are statistically significant

**Table.4:Disparities in the perception of preferences in spatial alteration to accommodate the changes required due to pandemic based on their occupation (Source: Authors)**

**3.1. Preference regarding open space around house**



**Figure 3:Preference regarding open space around house (Source: Authors)**

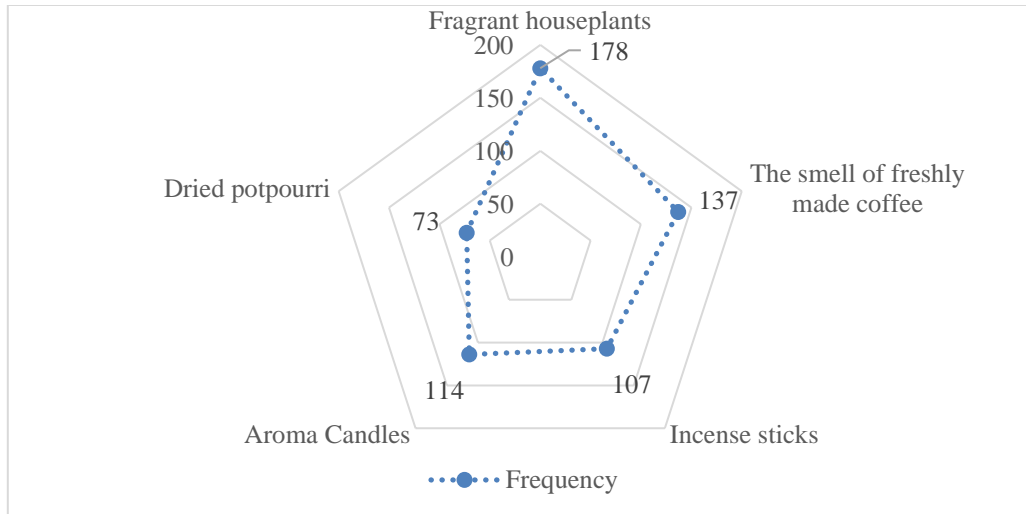
It is observed from the survey that people generally prefer extended spaces such as a balcony, open terrace, courtyard, and indoor landscape. Natural settings will strengthen our concentration, develop our problem-solving skills, increase healthy attitudes, and decrease the influence of stress.

4. The preference of hearing and olfactory senses in individuals in terms of pleasant sound and aroma

Figure 4 and 5 presents the distribution of individuals for their preference of source for olfactory sensing and hearing in terms of pleasant aroma and sounds, respectively. The majority of the individuals preferred the presence of fragrant houseplants, followed by the smell of freshly made coffee, aroma candles,

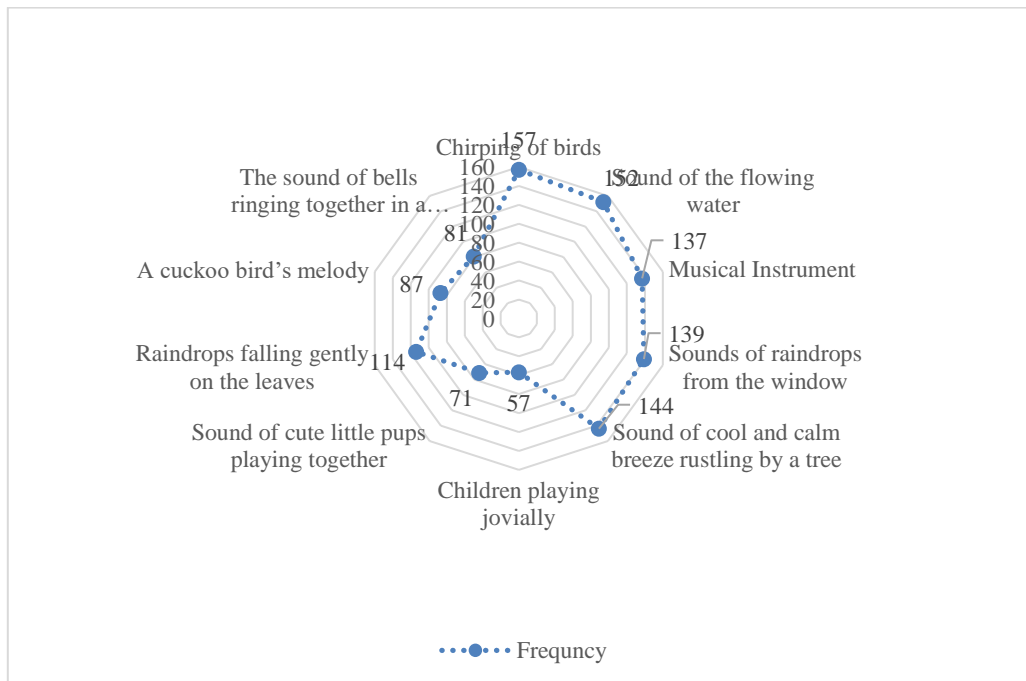


incense sticks and dried potpourri as observed in Figure 4. This implies that presence of fragrant houseplants, freshly brewed coffee and burning of aroma candles were the top three preferences for a pleasant aroma during the pandemic times.



**Figure 2: Distribution of individuals based on their preference for source of a pleasant aroma (Source: Authors)**

In case of preferred sounds as seen in Figure 4, the chirping of birds was the most preferred followed by the sound of flowing water and sound of cool and calm breeze rustling by a tree formed the top three sources for pleasant sounds.



**Figure 3: Distribution of individuals based on their preference for source of pleasant sounds (Source: Authors)**

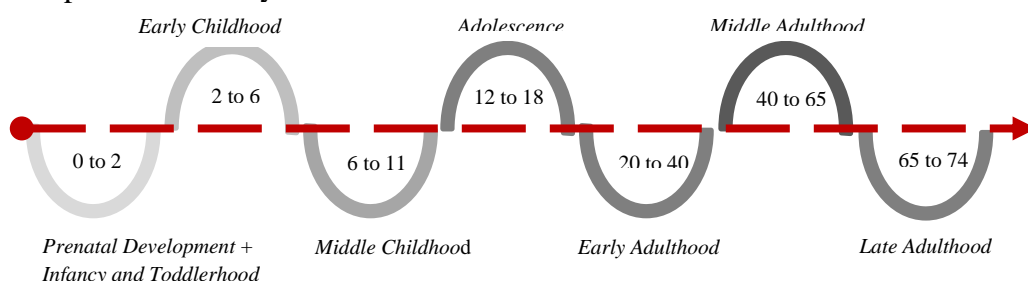
Sounds of raindrops from the window, making you feel cozy and comfortable within the confines of your home

Natural environments help restoring attention, as they provide gentle stimulation to the senses and offer a range of sights, smells, and sounds (Kaplan 1989). Kaplan argues that the "soft fascination" of natural settings can enhance the recovery from stress disorders and that green spaces can promote health and well-being. The garden offers a great variety of sensory stimulations and experiences. The "noise" in the real setting brings other sense modalities - sound, smell, and touch.

## 7. Discussion

### Effects of Pandemic on psychological wellbeing

Developmentalist categorise human life-span into 7 stages Figure 6. The problems associated with each category also are different, since needs, abilities, and preferences vary.



**Figure 6: Age Categorization of human life-span (Source: lumen, n.d.)**

While elderly people are facing the challenges of lowered physical and mental abilities which require special standards and assistance, adolescents have extra energy, need for peer companies and group activities, living outdoors and games, etc. whereas, 'Early Adulthood' and 'Middle Adulthood' people are the 'bread-winners' in any typical family. They are, therefore, required to work from home which requires '*long sitting*' and '*acceptable workspaces*' at their homes. Middle Adulthood has extra problems relating to growing age like medical, physical, and psychological. On the contrary, Children when confined to closed spaces for prolonged periods, tend to be physically less active, develop irregular sleep patterns, have less favorable diets, leading to unhealthy weight gain and even a loss of cardiorespiratory fitness. From the survey, it is quite understandable that the problems reported by students are *Discomfort from prolonged sitting*, *Desire for friendship*, and *Meeting other people*, *Lack of entertainment/engagement*, which finally lead to Boredom. Transition of instructional methods classroom-teaching to online mode has totally changed their life. Having a interaction in class culminating into collaborative learning is always benefitted students. At the same time, in present scenario, students can learn at their own pace.

As far as additional spaces preferences are concerned, respondents from all group agreed they need space for exercise. For Garden students mean value is 5.04 which is higher than other two groups. The explanation is that nature has a

valuable role in our lives, helps resolve mental exhaustion, and stimulates our capacity to concentrate and focus our attention successfully. After spending sleepless nights preparing for examinations or working intensely on a project or task or in self-isolation, gardens raise positive feelings and decrease the stress effects.

Aesthetic Judgements are “sensory, emotional and intellectual all at once” (Zangwill, 2019). When the emotional aspect is considered, emotions correspond to 'cultural' reactions; regional responses often differentiate aesthetics. On occasion, spectator conceptions of appearance can be found to hold two value concepts: aesthetics and taste. The philosophical notion that beauty is aesthetics. For architects, the taste is the product of a continuum of schooling and understanding of elite cultural values gained by mass culture exposure. African sculpture that Victorians regard as ugly/primitive was considered beautiful by Edwardian in the United Kingdom. According to Kant something beautiful is more than simply taking pleasure in experiencing it. "the beautiful is the symbol of the morally good." (Kant, 1987; Danto, 2002). The politicization of aesthetics also happened many times in history, for example, Realism, Social Realism, Naturalism, and Italian futurism. Aestheticization of politics is described as an instrument for the "mythologization" of totalitarian Fascist regimes (Benjamin & Translated by Zohn, 1935). For political and moral values, a Lamborghini could be judged to be beautiful in part because it is attractive as a sign of status, or we could judge it to be repulsive in part because it implies over-consumption for us and offends our political or moral values. Therefore, [aesthetic](#) judgments can become associated with economic, political, or [moral](#) value. E.g. lighting on floor, Music as you walk, digital walls, life on wall looks attractive but when it comes to economics and maintenance aspects people may not give preferences to those things for their houses and in the post-pandemic situation, these might turn out to be additional botheration, if not automated.



**Figure 4: Green space in terms garden, sitting place, vertical garden**  
(Source: Authors)

Design consideration for visual connection with nature can be divided into low budget, medium budget, and high budget. Low budget would be potted plants, medium budget would be wall plant screens, complimenting of interior and

exterior plants, high budget would be Green roof, Living green walls, Landscaped gardens with seating areas, courtyards.



**Figure 5: visual connection with design elements like textures, water**  
(*Source: Authors*)

Even though there are disparity of preferences among groups, architects shall think of accommodating long-term containment requirements of residential spaces. They shall learn from 'less is more' and conceive simple, isolatable, and large-span blocks with distributed facilities and support spaces and suitable technology well-integrated with built-forms, especially in institutional and apartment housing. It is appropriate to think in terms of 'E', 'F', 'H', 'X', and 'Y' shaped sustainable residential blocks; that promote lighting and ventilation, with large-spans and integrate vertical landscaping and vertical farming and roof-top farms.

In the pandemic context, balconies and terraces will play a vital role in our social lives, with stringent physical distancing steps in place. These spaces are frequently overlooked, would have to develop into an expanded necessary space to connect with the outer world and establish a 'spirit of culture' while preserving physical distance since they reside primarily in a region between the private and social zones. Examples also have arisen across the globe where residents sing and play music from their balconies, frequently providing a common social event where balconies or terraces are seen as venues for groups of citizens to assemble to usher and applaud community workers, emergency responders, and other vital employees that continue to keep a nation moving during challenging times.

In each house, open green roofs should be an alternative to provide a dispersed natural space for social life, mostly shielded from the outside. This will help increase the area accessible to families who share precarious urban living conditions, which could help boost people's social lives and provide children with more open space to visit and play. In November 2019, New York City adopted a new Green Law requiring all new roofs, installed for new or even existing structures, to receive photovoltaic solar panels or a green roof (University of Venice, 2020). But one should take things one step further as part of our social life needs to make a new roof available and legal for a healthy occupation. It could be our shared social green space in an emergency, having access to the air and water and 'nature' that we need and want to sustain our physical and mental well-being. For bigger houses, green roof occupancy could be distributed over time in a manner that would hold touch low. In the

case of an emergency like a pandemic, certain spaces may become a critical resource. For the construction of photovoltaic panels, appropriate spaces on the rooftop and vertical faces of constructed forms shall be defined whereby the users' energy requirements can be met. One might think about making some money by selling extra energy if connected with the electric grid!

Virus-free Transit will be a very important criterion for designing common spaces in the residential area. The architectural design will help to lower crowds where viruses can spread easily, for example, wider, ventilated corridors and doorways, antibacterial brass doorknobs, or other appropriate technological options made available. Hand washing everywhere especially at the main gate, security counters in a residential society. Surfaces can be of anti-pathogen in nature reducing the risk of transmission of pathogens from one to another.

## 8. Conclusions

Architecture, for the common good, has a great power. The architecture was able to steer the new reconstruction of destroyed towns into more just, equitable, and prosperous societies after World War II when the human toll of war was terrible, and it left many cities and economies in shambles. Now the only solution to fight this global pandemic is physical distancing. The standard use of adjective global are restricted to phraseologies like global war, global peace, global epidemic... but can there be global architecture to address the issues of this pandemic. In late 1980 the word global became attached to the word *history*. The new global history initiated in 1991. If we say architecture is contextual; problems are somewhat similar, there are differences - geographical, climatic, contextual, the way people react and overcome the situation. There preferences make them face the challenge to overcome these issues. Can architect as a designer do something regrading it? This pandemic has showed the world along with medical professional, spatial planning is also an important criterion to save peoples life and help communities recover and rebuild, applying lessons that will help to avoid future health and environmental catastrophes through sustainable development.

The aim of this study was to understand the preferences from different professional other than architecture, when they are in same work-life situation and try to find out solutions for residential design. These findings may help the architects understand better what non-architects would prefer. Through recognizing the expectations and disparities among them, the gap between them could reduce for a better user satisfaction.

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