A Sensory Design Approach to Emotional and Spatial Well Being – The Peel of Pod

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***Abstract*—The current shared spaces like libraries, shared working spaces, offices, and public interiors emphasize openness, collaboration, and visual communication. Although these factors promote interaction, they also cause sensory overload, acoustic disturbance, loss of privacy, and increased stress levels among users. The increased use of open spaces has also identified a significant divide between spatial efficiency and human needs in terms of concentration, emotional balance, and restoration of cognition. The study focuses on the requirement of a controlled micro-environment in shared spaces and introduces a design solution named 'Peel of Pod' a multisensory, acoustic-insulated, and emotionally supportive design solution.**

The study uses a mixed methods approach to design and test the study through a Google survey and user questionnaires designed and analysed using the survey tools provided by the corporation. The findings of the study from the quantitative method show the importance of noise-free and enclosed areas for users to work and rest and even to conduct personal communication. The study uses the qualitative method to show the importance of the compact pods from the experience of the users and the opinions of the industry experts.

The results show great user acceptance and practical validation of the Peel of Pod concept, classifying it as an all-purpose design tool that enhances focus, privacy, emotional welfare, and restorative pauses. The research concludes that sensory-controlled micro-spaces incorporated into shared settings can greatly improve the comfort and experience of space, reaffirming the interior design role as a mediator between productivity and experience.

I. INTRODUCTION:

The nature of interior spaces has seen a remarkable shift in the recent decades. Interior spaces, which were known for their demarcated boundaries, closed rooms, and designated purposes, are increasingly trending towards open plans that are more flexible, collaborative, and space-efficient. The trend of adopting open plans can be seen in libraries, coworking spaces, offices, and other interior spaces that are increasingly embracing open plans to foster interaction and space utilization to their fullest potential. However, these spaces are disregarding certain psychological, sensory, and emotional needs of users.

Open and shared spaces provide a constant stimulation of the auditory, visual, and social senses of the participants. Background noise, speech overheard in open spaces, motion, artificial light, and lack of control are all factors that cause cognitive overload, stress, reduced focus, and discomfort in the emotional state of the user. Research in environmental psychology and multi-sensory studies indicate that the experience of space by a human cannot be relegated to the realm of the visual alone, as it encompasses the integration of sound, light, texture, temperature, space enclosure, and emotional state of the users in space, when these factors go unregulated.

The growing need for flexibility in working patterns, longer working hours, online engagement, and high levels of cognitive load has significantly increased the demand for spaces where people can temporarily escape a very stimulating atmosphere. To counter this problem, micro-spaces such as pods, closed booths, and rest capsules have started to appear in shared spaces. Micro-spaces offer a temporary escape in those spaces, namely, to work, to talk, to relax, or just to wind down, carrying with them no negative implications related to openness.

In this study, the "Peel of Pod" is presented as an interaction with the design sensibilities of an environment experiencing overload and discomfort. It

is perceived as an encapsulated structure that is shielded from sound and managed on various other sensory platforms. Workstations or partitions are typical designs. However, the Peel of Pod is different since it is designed as an encapsulating structure acting on the various sensibilities of the user.

This research will seek to analyse and determine user needs, dynamics, and opinions with regards to privacy, distraction, and rest periods within shared spaces. Through a comprehensive analysis of user surveys, questionnaires, expert opinions, and observational studies, this research builds a robust and comprehensive framework for the Peel of Pod design concept. At its root, this research challenges and places the pod beyond a simple architectural component and furniture piece and further seeks to integrate and reconcile spatial architectural design and human needs.

II. LITERATURE REVIEW

1. Multisensory Experience in Interior Spaces

- Spence (2020) observes something critical in his work that our humanly experienced space has no more multisensory, involving light, sound, texture, temperature, and spatial form rather than vision alone.
- Contemporary interior designs neglect these human senses and create overstimulation, distraction, and lack of attention.
- It enhances the design of Peel of Pod, thereby making the transition to offer a controlled multisensory micro-environment dealing with issues like balance in libraries, coworking, offices, and public areas.

2. Acoustic Discomfort and Noise in Open-Plan Environments

- Delle Macchie, S., Secchi, S., & Cellai, G. (2018) illustrate how speech noise and lack of sound insulation in open-plan offices negatively impact concentration, privacy, and environmental satisfaction.
- While acoustic ceilings and partitions are incorporated, complete silence and privacy cannot be guaranteed in any shared environments.
- The study of Yadav, M., Cabrera, D., Kim, J., Fels, J., & De Dear, R. in (2023) verifies that the average level of noise in open offices exceeds comfortable levels, which causes auditory stress.
- The above-mentioned justifications contribute to the rationale why enclosed and acoustically treated pods, as exemplified in the Peel of Pod, are necessary.

3. Advanced Acoustic Solutions and Enclosure Design

- Giulia Fratoni, Martin Tenpierik, Michela Turrin, Massimo Garai, and Dario D'Orazio (2025) show that multi-resonator acoustic screens significantly reduce intelligible speech compared to conventional partitions.
- Their work verifies that well-designed acoustic enclosures are beneficial to both privacy and distraction prevention in speaking communications.
- Indeed, it adds to the technical feasibility of the Peel of Pod as a sound-buffered micro-space designed for concentrated tasks, calls, and mental breaks.

4. Sensory Overload, Attention Fatigue, and Restoration

- Pham TP, Sanocki T. (2024) introduce the concept of "attentional ecology", whereby perpetual noise, visual clutter, and digital distractions sap mental resources.
- Controlled environments assist in regaining attention, increasing focus, and eliminating mental fatigue.
- The Peel of Pod supports this theory by providing a low-stimulus, calm area in an otherwise overstimulating communal setting.

5. Multisensory Design and Emotional Well-Being

- Xu et al. (2025) offers a conceptual framework for multisensory spatial perception that incorporates lighting, sound, materials, form, and smell to build emotional atmosphere.
- Aakangsha Roy, & Ar. Aashima Arora. (2023) point out that materiality, lighting, and acoustic factors directly affect psychological comfort and emotional responses.
- These papers have reinforced the Peel of Pod as an emotionally nourishing environment. This is as opposed to being purely functional with regard to its construction as an enclosure.

6. Impact of Pods and Micro-Spaces on Mental Health

- Dore E, Guerero D, Wallbridge T, Holden A, Anwar M, Eastaugh A, Desai D, Clare S. (2021) investigated energy pods in healthcare environments, and their study revealed heightened arousal, feelings of reduced fatigue, and overall feelings of well-being in users.
- Fietze I, Barthe C, Hölzl M, Glos M, Zimmermann S, Bauer-Diefenbach R, Penzel T. (2016) found that having acoustic isolation areas increases deep relaxation and recovery even in the short term.
- Mohamed, R. M., & Ali, M. A. M. (2023) investigated that multi-activity pods in institutional settings are conducive for reducing stress, concentration, and mental well-being.
- The results confirm the Peel of Pod as a restorative micro-space for a variety of users.

7. Workplace Stress, Privacy, and Emotional Regulation

- Sander E (Libby) J, Marques C, Birt J, Stead M, Baumann O. (2021) showed that open-plan noise impacts stress and negative mood, despite the lack of effect on task accomplishment.
- Aristizabal, S., Byun, K., Porter, P., Clements, N., Campanella, C., Li, L., Mullan, A., Ly, S., Senerat, A., Nenadic, I. Z., Browning, W. D., Loftness, V., & Bauer, B. (2021) found that multisensory environmental modifications can enhance mood, cognitive, and satisfaction.
- This shows the relevance of emotion-centred design interventions, as in the Peel of Pod design intervention.

8. Biophilic and Controlled Sensory Environments

- Latini, A., Torresin, S., Oberman, T., Di Giuseppe, E., Aletta, F., Kang, J., & D'Orazio, M. (2024) found that nature-related visuals and controlled acoustic environment enhance cognitive functions and working memory.
- Qu, S., & Ma, R (2024) showed that multisensory stimuli reduce stress and increase feelings of vitality.
- These studies seem to confirm that even a small space, designed creatively and effectively, provides significant restorative advantages.

9. Wellness, Napping, and Micro-Rest in Workspaces

- Zhai, X., Nicholson, J., Montague, E., Guan, K., Olivier, P., & Ellis, K. (2018) argue that rest and recovery are also important components of workplace wellness and not solely focused on increasing productivity.
- Anand, A., Tóth, R., Doll, J. L., & Singh, S. K. (2024) state that a power nap lasting 10–45 minutes has been found to increase alertness, creativity, and emotional balance.
- It will serve as a nap pod, quiet booth, or recharge capsule to meet the above-mentioned arising wellness requirements.

10. Need for Compact, Flexible, Sensory-Controlled Pods

- Clements-Croome, D., Turner, B. & Pallaris, K. (2019) suggest that work environment design should facilitate human flourishing and multisensory integration.
- Roeswood, M. (2017) identifies a sense of enclosure and control of space improves emotional well-being.
- These principles work to reiterate the Peel of Pod as a compact, movable, sensory-controlled intervention suitable for diverse shared environments.

11. Literature Review Summary

- One of the most important aspects:

a) High levels of noise, distraction, and sensory overload in shared environments
b) Absence of privacy and emotional comfort in an open-plan layouts
c) Strong benefits of controlled, enclosed, multisensory micro-spaces

- The Peel of Pod specifically addresses these short comings with the following:

a) Acoustic isolation
b) Visual and sensory control
c) Emotional restoration and mental recharge

- Their approach, therefore, has substantial basis in modern studies in architecture, psychology, acoustics, and workplace wellness.

III. METHODOLOGY:

1. Research Design

- The study follows a mixed-methods research approach, combining:
  - Quantitative methods to perceive the understand general patterns and preferences of users.
  - Qualitative methodology to delve into the deeper insights of emotional, sensory, and behavioural experiences.
- The selection of this approach is also informed by the need to have a comprehensive understanding of sensory discomfort, privacy needs, and emotional well-being in shared environments.
- The research is user-oriented and design-driven, research based on the principles of interior architecture and environmental psychology.

2. Research Population & Sampling

2.1 Target Population

The study focuses on the users who are permanent occupants of shared or open environments, which are:

- Students (libraries, study spaces)
- Young professionals
- Co-working space users
- Open-plan office employees
- Corporate workers
- Freelancers and creatives
- Frequent travellers (airports, lounges, nap pods)

2.2 Sampling Technique

- Purposive sampling was used to select the participants who are most affected by sensory and spatial challenges.
- Participants were selected on the following grounds:
  - Regular exposure to shared environments
  - Need for focus, privacy, or mental recharge
- The sample was divided into:
  - Large-scale user survey (100 participants)
  - Focused participant questionnaire (P1–P20)
  - Expert interviews (5–6 professionals)

3. Data Collection Methods

The data collection was done through four complementary methods to strengthen reliability and triangulation.

3.1 Google Survey (Quantitative)

- A structured Google Form was circulated among 100 participants.
- Conditional on assuring clarity and consistency, this questionnaire survey only contained multiple-choice questions.
- Key areas evaluated:
  - Noise disturbance
  - Visual distraction
  - Lack of privacy
  - Emotional stress and mental fatigue
  - Demand for quiet pods, nap pods, and sensory-controlled spaces
- The survey allowed identifying general patterns, the frequency of feeling discomfort, and the demand of the user for small pods like a Peel of Pod.

3.2 User Questionnaire (P1–P20)

- A semi-structured questionnaire was conducted with 20 selected participants, denoted as P1 to P20.
- Participants came from a diverse range of backgrounds, including:
  - Libraries
  - Co-working spaces
  - Open-plan offices
  - Airports
- The following were part of the questionnaire:
  - MCQs
  - Sensory comfort ratings
  - Emotional well-being indicators
  - Open-ended questions
- This helped capture personal experiences, responses to emotion linked with privacy and quietness, and situational needs.

3.3 Expert Interviews (Qualitative)

- One-on-one interviews were conducted with 5–6 experts, including:
  - Interior Designer
  - Architect
  - Psychologist
  - Psychiatrist
  - Workplace Consultant
  - Wellness / Meditation Professional
- These interviews were unstructured to semi-structured, allowing experts to express professional opinions without restraint.

- The purpose was to:
  - Validate the need for sensory pods
  - Understand psychological and spatial implications
  - Support the design concept with professional insight
- Intentional analysis of feedback was done in an attempt to find out how the Peel of Pod supports mental well-being, focus, and privacy.

3.4 Naturalistic Observation (Qualitative)

- Naturalistic observation was conducted in:
  - Validate the need for sensory pods
  - Understand psychological and spatial implications
  - Support the design concept with professional insight
- Observations were carried out:
  - On different days
  - At the same time of day
  - For the same duration at each location
- This ensured the same effect was maintained throughout and eliminated any kind of bias taking place because of the influence of time.

Observation Focus Areas:

- Noise levels
- Visual distractions
- User behaviour seeking privacy
- Signs of stress or sensory fatigue
- Lack of environmental control
- User coping mechanisms includes headphones, moving seats, isolation attempts at isolation.

4. Observation Schedule

- Time of observation: 03:00 PM – 5:00 PM (peak cognitive work hours)
- Completion time per location: 30–45 minutes
- Reason for time selection:
  - High user density
  - Maximum sensory overload
  - Active work/study periods

5. Data Analysis Methods

5.1 Quantitative Data Analysis

- Survey and questionnaire responses were:
  - Tabulated
  - Converted into percentages
  - Represented using pie charts, bar graphs, and tables
- This allowed for the identification of:
  - Dominant sensory issues
  - Frequency of distraction
  - User demand for pods
  - Acceptance of the Peel of Pod concept

5.2 Qualitative Data Analysis

- Open-ended responses, expert comments, and observations were analysed using:
  - Thematic analysis
- Key themes identified:
  - Need for privacy
  - Sensory overload
  - Emotional exhaustion
  - Desire for calm, enclosed micro-spaces
- These themes were mapped directly to design features of the Peel of Pod.

6. Ethical Considerations

- Participation was voluntary
- No personal identifiers were disclosed
- Responses were used only for academic purposes
- Participants were informed about the purpose of the study

7. Alignment with Design Outcome

- All the design methods have been selected in order to support and validate the idea of the Peel of Pod concept
- The findings directly informed:
  - Pod size and enclosure
  - Acoustic treatment
  - Lighting control
  - Intended use (work, calls, rest, mental reset)
- The methodology ensured that the final design solution is:
  - User-validated
  - Psychologically supportive
  - Contextually relevant

IV. RESULTS AND ANALYSIS

1. Overview of Data Analysis

The findings of this research are based on four main methods of data collection:

- Proposed Google Form survey responses (100 participants)
- Structured questionnaires as responded by the selected participants (P1–P20)
- One-on-one expert interviews (Interior Designer, Architect, Psychologist, Psychiatrist, Workplace Consultant, Wellness Professional)
- Naturalistic observations conducted in libraries, co-working spaces, and office environments

The analysis focuses on the patterns to be extracted that relate directly to sensory discomfort, emotional stress, lack of privacy, and the need for an individually controlled microenvironment-all working to support the design intent of the Peel of Pod.

2. Google Survey Results (Quantitative Analysis)

The Google survey was conducted with 100 participants consisting of students, young professionals, co-working users, and office workers. The survey has focused on noise, visual distraction, emotional state, privacy needs, and acceptance of pod-based spaces.

Key Findings:

- 82% of respondents had a high need for quiet, enclosed spaces within shared environment.
- 67% felt that noise and speech interference was the major cause of distraction.
- 65% would certainly use a sensory-controlled pod, while 30% said "maybe."
- More than 55% said they felt stressed or mentally fatigued in open-plan settings.

Interpretation: These results show a clear mismatch between the current shared spaces and the users' need related to sensory and emotional experiences. The strong acceptance of pod-based solutions comes to validate the relevance of Peel of Pod as a much-needed design intervention

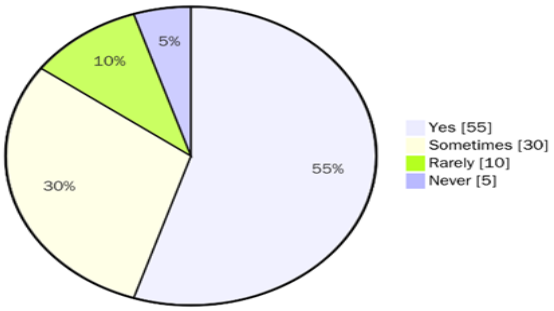

Fig.1 Privacy Issue

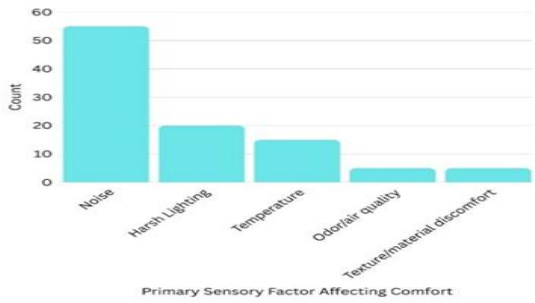

Fig.2 Primary Sensory Factor Affecting Comfort

3. Participant Questionnaire Analysis (P1–P20)

A detailed questionnaire was conducted with the selection of 20 participants (P1–P20) representing:

- Students
- Co-working space users
- Young professionals
- Open-plan office employees

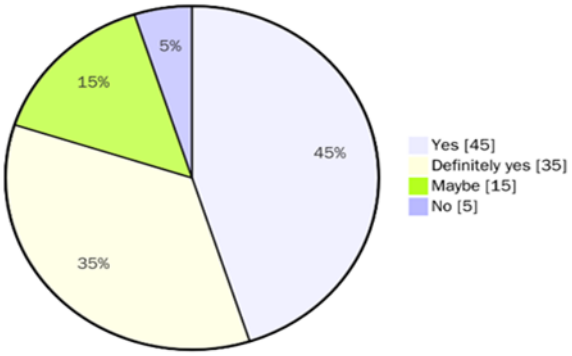

Fig.3 Likelihood to Use Peel of Pod

Sensory Comfort Ratings (Likert Scale 1–5)

- Average noise comfort rating: 2.1
- Average privacy satisfaction rating:2.3
- Average visual calmness rating: 2.6

Emotional Well-being Indicators:

- 70% of participants had anxiety or restlessness in open environments.
- 60% said they felt mentally drained after being at shared workspaces for extended periods of time.
- 75% indicated the need for temporary withdrawal spaces to be able to focus again.

Open-ended Insights:

- Participants most often mentioned:
  - "No place to mentally reset"

- "Too many people talking"
- "Need a cocoon-like space"

- Several professionals referred to airport nap pods and private meeting pods as effective models.

Interpretation: The participant-level data reinforces the need for compact, enclosed, sensory-controlled spaces that can offer psychological comfort and functional privacydrivers integral to the design of Peel of Pod.

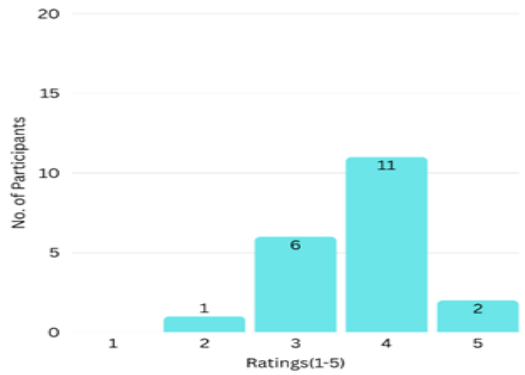

Fig.4 Preferred Pod Feature

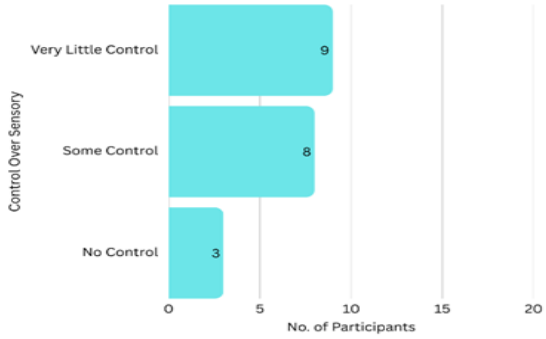

Fig.5 Sensory Comfort Rating

4. Expert Interview Findings (Qualitative Analysis)

One-on-one interviews were conducted with 6 experts:

- Interior Designer
- Architect
- Psychologist
- Psychiatrist
- Workplace Consultant
- Wellness / Meditation Coach

Common Expert Observations:

- Open-plan spaces are too overwhelming for the sense and emotional fatigue.
- Lack of privacy has a negative impact on cognitive performance and mental health.
- The enclosed pod gives psychological safety, acoustic relief, and emotional regulation.
- Pods can be used for focused work, client meetings, catching up on rest, and mindfulness.

Expert Support for Peel of Pod:

All experts converged to a consensus that a sensory-managed micro-environment like Peel of Pod:

- Improves concentration
- Reduces stress
- Supports emotional well-being
- Aligns with future workplace wellness trends

5. Naturalistic Observation Findings

Observations were conducted in:

- Libraries
- Co-working spaces
- Offices

Observation Summary:

- High surrounding noise owing to conversations and phone calls
- Users have very regularly changed seats to seek quieter corners
- Use of headphones as a coping mechanism
- Visible signs of annoyance, sleepiness, and restlessness
- Lack of areas that offer sensory control or privacy

Key Behavioural Patterns:

- Users actively sought visual enclosure
- Short breaks were taken outside main work zones
- No designated spaces for silence or mental rejuvenation

Interpretation:

These observations confirm the strong behavioural need for enclosures that are calm. Peel of Pod directly addresses these observed gaps by offering controlled acoustics, visual privacy, and emotional comfort.

6. Overall Synthesis and Design Validation

The evidences, combined from surveys, questionnaires, expert interviews, and observations clearly show that:

- A critical lack of sensory control over public spaces
- High levels of emotional and cognitive stress

- Application to enclosed micro-spaces enjoys strong support from users and experts.

Design Validation:

The Peel of Pod then emerges as a validated design solution that:

- Centralizes real user discomfort
- Aligns with expert insights
- Supports mental well-being
- Fits seamlessly into libraries, co-working spaces, offices, and public environments

V. DISCUSSION:

The results of the Google survey, participant questionnaire (P1–P20), expert interviews, and naturalistic observations all combine to make a case for controlled, sensory-managed micro-environments within shared spaces such as libraries, co-working spaces, offices, and public interiors.

1. Interpretation of User Data

- A large number of respondents reported disturbance on a frequent basis by noise, visual distractions, and lack of privacy within open environments.
- High ratings on the Likert scale showed that quiet, enclosed places were associated with improved focus, emotional serenity, and productivity.
- Participants P1–P20 consistently reported:
  - Mental fatigue in open-plan settings
  - Difficulty concentrating for tasks such as reading, online meetings, or deep work
  - A preference for retreat spaces for temporary use without permanent private offices

These findings validate the concept that users do not want to be isolated at all times but are seeking temporary refuge, a gap that Peel of Pod directly addresses.

2. Emotional and Sensory Well-being

- The emotional well-being indicators indicated high stress and cognitive overload associated with shared environments.
- Participants associated calmness and emotional comfort with:
  - Reduced sound levels
  - Soft lighting
  - Enclosure and sense of personal territory

This is furthered by multisensory design theories described in the literature, further conceptualizing that emotional regulation may be possible through spatial intervention, even at a small scale.

3. Expert Feedback Interpretation

Expert interviews with interior designers, architects, psychologists, psychiatrists, workplace consultants, and wellness professionals further strengthened the project rationale:

- Designers emphasized the absence of flexible quiet zones within contemporary interiors.
- Psychologists and psychiatrists drew to the development of control over senses as a means of reducing anxiety and attentional fatigue.
- Workplace consultants noted an increasing requirement for pods where clients could either be meeting, hold a confidential call, or simply focus on working.
- Wellness professionals supporting the idea of pods as mental reset zones, just like nap pods used in airports and corporate offices.

Overall, there was unanimous support for the Peel of Pod as being a feasible and relevant, timely design intervention among experts.

4. Observation-Based Insights

Naturalistic observations conducted across libraries, co-working spaces, and offices included the following:

- Frequent behaviours indicating discomfort:
  - Use of headphones
  - Changing seats repeatedly
  - Seeking corners or edges of rooms
- Persistent visual and acoustic distractions
- Absence of user control over environmental conditions

He above behavioural patterns are confirmation of latent demand that exists for enclosed, acoustically buffered spaces. They also reinforce the practical need behind the Peel of Pod.

5. Final Design Drawings & Design Discussion

The Peel of Pod is a research-driven design response that seeks to take the user needs and expert insights into a tangible architectural intervention.

Fig.6 Concept Sketch

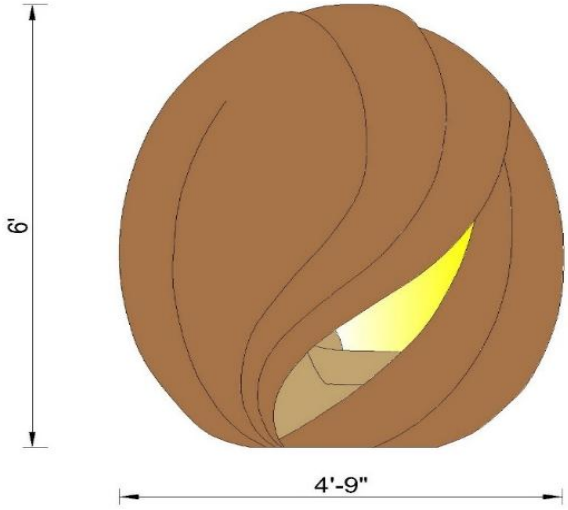

Fig.7 Side View

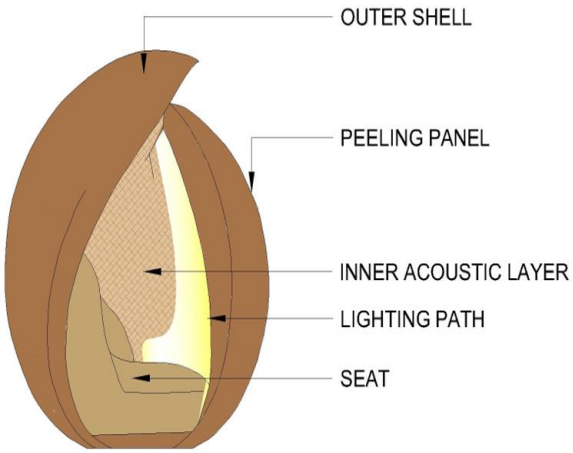

Fig.8 Sectional View Plan

Fig.9 Isometric View Plan

Fig.10 3D Render

VI. CONCLUSION

This research proves that the modern shared environment does not meet the sensory, emotional, and cognitive requirements of its users. With mixed methods of research, this study verifies that there is great demand for quiet, private, and emotionally nurturing micro-environments.

The Peel of Pod is a successful response to this issue, as it provides a controlled multisensory environment that is known to positively affect concentrations, stress levels, and overall wellness. The Peel of Pod has proven, through scientific data, validation, and observation, to be a highly viable design solution.

In the end, this study serves to confirm the importance of interior design not only as space organization, but also as a means of mental relaxation, emotional equilibration, and human-centred well-being.

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