

## HOUSE DESIGN AND CLIENTS CHARACTER: FIVE HOUSE DESIGN ACTIVITIES IN YOGYAKARTA, INDONESIA

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### ABSTRACT

House design is the initial challenge encountered by most architects and becomes unsuccessful in case the clients' character is not understood. Architecture students often receive specific lessons about the clients' psychological perspectives. In general, they only learn this at their early project and mostly fail in its elaboration during design project. Architecture is closely related to the ability to understand client character translated to design concept. Therefore, this study, aimed to examine the relationship between the client's general character based on the human personality theory. The theory is associated with the client's design expectations and implementation by the architect. Furthermore, the study analyzed building concepts, zoning and building styles, and the client's character regardless of the project cost. The five case studies of selected houses have been designed by one architect in the last ten years. Interviews with architects were conducted to obtain clients' characters data in a single perspective by architect perception. The result showed that four client human characters have differences in design implementation. Melancholy and choleric characters prefer houses with regular zoning, different from phlegmatic and sanguine.

Key words: house, design, client character

### INTRODUCTION

Exploring the client's character in an architectural design process is essential in the design's success because the architects service their clients without reaching maximum design expectations. Cooperation between an architect and a client is crucial and cannot be replicated as the design learning process in the architectural education system, especially in design studios (Liddicoat, 2018). Although a good client is a key to the success of a project, the relationship between the architect and the client is primarily determined by the type of project and procedures, including the design phase (Linden, Dong, Heyligen, 2017). Different backgrounds cause the ambitions and pleasures of architects and clients to sometimes conflict, resulting in unique challenges in the design process (Buse et al., 2016; Cuff, 1992; Green, 1996; Ivory, 2004; Thyssen et al., 2004). 2010). A study conducted at three architectural consulting bureaus in Belgium showed four client relationships: absence, substitution, consultation, and engagement (Linden et al., 2017). Problems between architects and clients often arise because both use different speaking methods to express the desired situation and expected building artifacts (Fleming, 1996). Client-situated practice presents new challenges for architects in changing professional roles, conflict, and client values. Additionally, challenges arise in cultivating the skill and sensibilities needed to satisfy professional aspirations in a client-situated environment (Schermer, 2001). Based on the human personality theory, a character comes from four body fluids that exist in specific proportions and determine the human psyche. A more dominant liquid portion causes a distinctive psychological nature (Fudyartanta, 2012), with the following personality types:

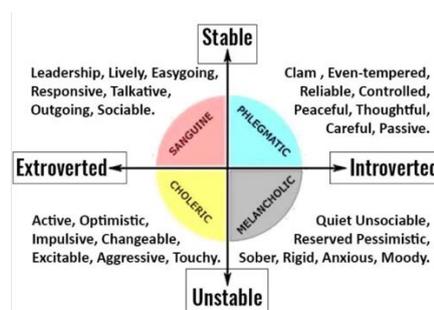


Figure 1. Four Fundamentals Personality in Different Characters (Engler, 2009)

These are different concepts about temperament, biological condition, and character, which changes during life. The human personality theory by Hippocrates-Galen was the basic idea from the predominance of a specific fluid in the human body. Table 1 shows the details of self-realization, interests, hobbies, carrier, and working capacity.

**Table 1. Comparison of self-realization, interest, hobbies, carrier, and working capacity from four basic characters in human personality theory (Qizi & Akmal, 2021)**

	<b>Temperament</b>	<b>Self-realization</b>	<b>Interest and hobbies</b>	<b>Carrier and working capacities</b>
<b>Sanguine</b>	Active, cheerful, superficial, sociable, a joker	Requires recognition because they love to be admired. They usually bypass the obstacles.	Acting (theater and movies), humor, social work, communication, gossip, and travel	Active, ambitious, superficial; an excellent organizer —the leader who loves recognition. The priority is money.
<b>Choleric</b>	Hyperactive, quick-tempered, hasty, sociable, a leader	Needs popularity as they like when people depend on them. Goes ahead, risks, donates, and sacrifices.	Sports, extreme activities, traveling, competitions, communication, quest games, excitement, and risk	Active, ambitious, persistent, creative; the boss, the leader —likes to lead. The priority is career growth.
<b>Melancholic</b>	Vulnerable, creative, empathic, smart, emotional	Needs recognition and emotional support to increase their self-esteem. Often stop making efforts because they are afraid of failure.	Art, puzzles, mysticism and esoteric, philosophy, meditation, and handicrafts	Inert quickly gets tired, subordinate, dreamer, thinker, creative person. The priority is a friendly, warm atmosphere.
<b>Phlegmatic</b>	Calm, slow, thoughtful, withdrawn, fixated	Seeks to maintain the current state of affairs. Gets rid of obstacles only when they interfere with their measured life; however, they do it effectively.	Puzzles, reading, needlework, cinematography, science, nature, mechanics, and architecture	Inert, slow, serious, reliable, subordinate; they like to analyze, systematize. The priority is stability.

This study presented the design results using a client approach from the human personality character theory. Since the design is limited and dependent on the client, site, stakeholders, regulation, and history (Ballard, 2013), this relationship needs an in-depth exploration from the perspective of both parties' roles. Furthermore, architecture schools have a chance to broaden their subject from a psychological perspective. This is because the relationship between architect and client is similar to tactical anticipation for a successful project.

As an exciting city in Indonesia, Yogyakarta was selected as a case study area because its total housing development has significantly increased in the last 20 years. It is different from other big cities such as Jakarta, Surabaya, and Semarang, where architect-client interaction has been carried out by the agent. In Yogyakarta, the relation has the possibility of being conducted individually through the design process. Specifically, this study aimed to examine the relationship between the client's character and architectural design. It interpreted the client's character using personality theory and assessed the possibility to improve the design in the next architectural project.

**METHOD**

This study was conducted qualitatively through observations on five house architectural designs as study objects. The method was adopted by drawing qualitative data using interviews as a sociological study into architects' accounts of their work (Buse et al., 2016) and a narrative inquiry approach adopted from Siva et al., (2011). Descriptive characters of clients came from the architect's and site project supervisor's perspectives to guarantee objective comments. The study object was observed from the house concept, zoning, style, and the design challenges associated with the client's character. For the architect's objective perspective, clarifying the client's character from the analysis results was tested as a direct cross-check to the designed house owner.

The clients' character was assessed by interviewing the architect about jobs, hobbies, personal characteristics, and interests. An analysis was conducted on the implemented design data correlated with four human characters based on the human personality theory. The aim was to show how each client's personality influences the resulting residential design. Table 2 shows the study methods.

**Table. 2 The Comparison of Study Methods**

Method items	Buse et al. Method	Siva et al. Method	Method
Question for the architect in data collection	<ol style="list-style-type: none"> <li>1. How are the architectural briefs for the project?</li> <li>2. What issues arise in site-specific contexts?</li> <li>3. How do they as architects communicate with clients?</li> <li>4. What types of knowledge about the care needs of eventual users are sourced, and how are these translated into design?</li> </ol>	<ol style="list-style-type: none"> <li>1. The type of work and how it was conducted</li> <li>2. Their relationships with clients</li> <li>3. The specific case studies and the associated relationships developed with the client for each case.</li> </ol>	<ol style="list-style-type: none"> <li>1. The house concept and zoning</li> <li>2. The style selected</li> <li>3. The design challenges associated with the client's character</li> </ol>
Data Analysis strategy	<ol style="list-style-type: none"> <li>1. Identify the link between stories from architect</li> <li>2. Transcription of the rough draft</li> <li>3. Interpretation of narrative segment to identify the meaning of each story</li> </ol>	Initial coding by two stages of analysis	Identify the correlation of implemented design and personal human character
Data validation strategy	Comparison with previous studies	Comparison between cases	<ol style="list-style-type: none"> <li>1. Confronted the client information to the site project supervisor</li> <li>2. Cross-checked to the owner to the designed house</li> </ol>

### THE IMPORTANCE OF CLIENT CHARACTER ANALYSIS

It is interesting to explore the architect-client relationship, especially for a residential project. In Australia, 69% of architects spend some of their work on residential projects (Shiva and London, 2012). The built environment quality is impacted by the successful understanding of the architect-client relationship, including the client's character. In the UK, studies on client-producer interaction need to account more fully in the strategic planning of an agent (Ivory, 2010), such as an architectural firm. An interview with 50 architects in Sidney, Australia, found that knowledgeable architects formulated discursive strategies to interpret their client needs (Ahuja et al., 2019). In 2018, a study from Japan Institute Architect (JIA) indicated the increasing number of unsatisfied clients on their project. The clients had problems during the design process at the beginning and end of the project and cost-related services (Furusaka et al., 2018). Moreover, studies on the client's character focused on their needs to construct the vision of architect 21 century and the professional group to the future stated in The American Institute of Architect (AIA) and Royal Institute of British Architect (RIBA) (AIA, 1993 and RIBA, 1993).

### CURRENT STUDIES IN CLIENT CHARACTER AND SUCCESSFUL DESIGN

Architects in house projects are marginalized in the house design and construction because of six conditions. These are a complex design problem, structural and economic burden, time, multiple stakeholders, institutional intervention, and future irrationally (Frimpong & Dansoh, 2018). In the context of the regionalist aspect, studies in India explained that architects should be more patient with the client and be a good listener. Also, they should educate their client about the essential architectural value to develop a successful design (Bahga & Raheja, 2020). Another study examined the relationship between designers and clients that use virtual reality (VR) technology. As an alternative tool to communicate design, VR may be valid but not ready for the professional studio (Laing & Apperley, 2020). The technology seems to be a potential strategy to meet clients' needs in the design process and could decrease marginalization about the architect profession.

An alternative strategy to obtain a better design process is using participatory design. Since practicing architects engage people in the design process in different ways and at varied scales, participatory design scales up client-user needs and accommodates uncertain and changing situations (Luck, 2018). The unsuccessful design is caused by the architect rarely clarifying user needs. A study was conducted in three architecture firms in Belgium on whether architects used participatory design strategy and communicated intensely with the client. The results showed that architects should still develop an implicit understanding of user motivation to manage design problems (Van der Linden et al., 2019). Knowledge about the client's character could help interpret and observe their needs.

Education and awareness amongst architects and clients also have an essential role in successful design and are fundamental in implementing and running a building idea (Zallio & Clarkson, 2021). In part of the design process, user feedback raises awareness and educates the client. A study was conducted on the client's role when designing the resilient community in Scotland, UK. The findings showed that architect needs a conventional design process to clear client needs while using the building simulation method to communicate design ideas. Subsequently, building simulation is narrowly defined as developing a solution focus (Hopfe & McLeod, 2021).

## FINDINGS

The five residential houses studied have different design results and the clients' character is also varied and provides an overview of the diversity obtained from the empirical architect's work. Figure 1 shows four general human characters consisting of choleric, melancholic, phlegmatic, and sanguine characters and their design concepts. The findings are divided into those related to the client's background, residential design expectations, and the design planned by the architect and its implementation.

The first finding is the information related to clients, including client work, hobby information, and character tendencies, as shown in Table 1. This data describes the different backgrounds of five clients, including Tugu Asri House (H1), Sleman House (H2), Cirendeu House (H3), Seturan House (H4), and Gamelan House (H5).

**Table 3. The Client's Information**

Research Object	Occupation	Hobbies	Main Character Tendencies
H1	Artist Management	Collect art object	Open Focus on details Dislikes bureaucratic things
H2	Entrepreneur	Traveling	Very relaxing Free spirit Uphold contextuality
H3	Painting Collector	Contemporary art lover	Open Relax Dynamic
H4	Private employees	Reading books	Formal Introvert Stiffness
H5	Accountant	Learning Javanese Culture	Relax Obey the bureaucracy Discipline

The following findings related to the design expectations of the planned residential house were obtained at the consultation session of each client. Every client has their preference in seeing the concept of a residential house to be designed. These preferences are shown in Table 4:

**Table 4. House Design's Expectation from the Clients in Interview Session with Architect**

Research Object	Expectation
H1	A house that could be a perfect resting place only with the nuclear family brings up various material details to the interior that depicts many items of artistic value.
H2	Most rooms in the house could be multifunctional and accessible to residents, guests, and neighbors.
H3	The house is also an art gallery, where community activities could be more intimate in an art space.
H4	There is a clear separation of space between private and non-private areas, and rooms could reduce the crowds on the highway.
H5	Javanese architectural style, all rooms have bathrooms, and the interior atmosphere is also thick with the feel of a traditional Javanese house.

The design expectations were obtained from many client experiences in work and hobbies until the residential design process was implemented. The socialization activities often carried out are a major factor in formulating preferences for housing.

Table 3 shows the findings related to the design plan, including the concept, zoning, style, and distinctive characteristics highlighted in each house design. The five clients expect to emphasize location context for the unique features highlighted because the houses observed are in Yogyakarta and Jakarta. The space concept is left entirely to the architect, while zoning results from a discussion process with the architect and the client. The building style is determined based on the client's wishes without intervention from the architect.

The discussions conducted by architects in planning a house concept take about 3-5 weeks through 3-7 meetings. Conversations are carried out intensively between the architect and the client without family intervention. Table 5 shows the data from interviews.

**Table 5. House Design Concept**

Research Object	Design Concept	Zoning	Needed Style	Unique Character of House
H1 	House as a privat gallery	Public and semi privat area in 1 <sup>st</sup> floor. Privat area for bedrooms and family room in 2 <sup>nd</sup> floor	Contemporary	The interior is full of art details
H2 	House as an area of freedom of expression with high space flexibility	Open layout, all rooms can be as multifunctional room for private and public, both on the 1st and 2nd floors	Modern and Malay traditional combination	Expressive low budget building materials to support contextuality with neighbour
H3 	House + art gallery	Most area as public zone. Privat area at 2 <sup>nd</sup> floor can use small part of floor plan.	Modern	Most of the space becomes a community gathering place
H4 	Closed and fully functionality	Most of the room as the privat space	Modern	Do not want any intervention from outside parties into the house
H5 	Home to live in	Public-semi-private-private and service zones are arranged with very clear zoning from the front to the back of the house	Contemporary and Classic Java	A complete accommodation for each room and carries a thick concept that has a precedent for the Sultanate Palace of Yogyakarta

#### DISCUSSION ON ZONING AND ITS RELATION TO CLIENTS ' CHARACTER

The client's open or closed character is read through the resulting space zoning, as indicated in Table 6. Studies on the relation of clients, design concept, and product, should focus on the integrative, humanistic, visual (Smith, 1996), intuitive, and irreducible design. This basic nature builds a comprehensive understanding of the relation of clients, design concept, and product. Many aspects should be eliminated when analyzing the relation of design and users' character.

Table 6. Zoning Character of Houses

No	Floorplan	Zoning Character
H1		<p>The private area is located on the second floor. At the same time, the public and service areas are on the 1st floor in a living room, dining room and kitchen. Access to the second floor in the form of stairs is placed in a position not too visible from the public area.</p>
H2		<p>Partial private area on 1st floor and 2nd floor Living room, family room and dining room in one zone for space flexibility Front and back areas are easily accessible</p>
H3		<p>Public and semi-private areas are placed on the 1st and 2nd floors The semi-private area on the 2nd floor for close colleagues adjacent to the bedrooms. Semi-private on the 2nd floor is used as a gathering room for residents and their intimate relationships.</p>
H4		<p>The public area is only at the front of the house, which is a living room separated from other rooms in the house. Another area is a particular private area for residents.</p>

H5		<p>The order of space zoning ranging from public, semi-public and private are regularly distributed in the house. Placement of a private zone on the edge of the house to maximize the personal impression of the space</p>
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The zoning in table 6 formed from each house could be drawn from the client's general based on the human personality theory. The basis for further analysis is the theory that differentiates four broad groups of characters with several key indicators that emerged during the discussion between the client and the architect.

**Table 7. The analysis of clients' character based on Engler**

Personality and its features	H1	H2	H3	H4	H5	Trend indications
<b>Sanguine</b>						H1, H3, and H5 are charismatic, friendly, and approachable. H3 is indicated as a lively, talkative, and sociable person. He has an energetic personality, is always on alert, and prefers being active instead of hanging around. Also, he is enthusiastic and cheerful. H2 s indicated as a responsive and sociable person because. He always responded to design activities and ideas quickly but was friendly. Also, he joined many social communities
-leadership	v		v		v	
-lively			v			
-easygoing						
-responsive		v				
-talkative			v			
-outgoing						H1 and H5 are optimistic, impulsive, aggressive, and touchy people by their chosen design concept.
-sociable		v	v			
<b>Choleric</b>						
-active						
-optimistic	v		v		v	
-impulsive	v				v	
-changeable						H2 is indicated as a phlegmatic person because he controlled a whole design process in his ideal assumptions about free expression in neighborhood relations
-excitable						
-aggressive	v				v	
-touchy	v			v	v	
<b>Phlegmatic</b>						
-clam						
-even-tempered						
-reliable		v				
-controlled	v	v	v	v		
-peaceful		v				
-thoughtful						
-careful						
-passive		v				
<b>Melancholic</b>						H4 has strong job background in rigid bureaucratic procedures, does not join in communities, and is indicated as a sober person
-quite unsociable				v		
-reserved pessimistic						
-sober				v		
-rigid			v	v		
-anxious					v	
-moody		v				

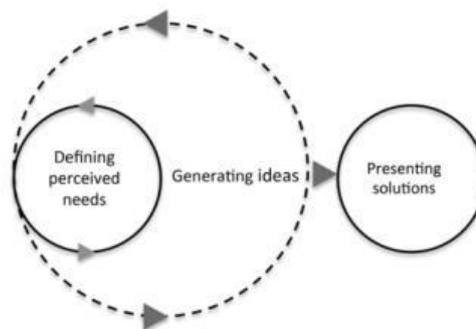
Table 5 shows that the dominant clients' characters are characterized by the human personality theory. Not all traits in each character appear on every client. For instance, clients on H1, H2, and H4 appear in three-character groups, while the H5 client has characteristics found in all characters. This analysis shows that the characters in each client do not have a significant tendency in only one character group but appear in different character groups. The conclusion of character is reflected in the appearance of the most dominant characteristics of each client. Furthermore, the next step analyzed the tendency of this client's character towards the concept of residential design and the space zoning formed to determine the correlation between the two. The analysis results are shown in Table 6.

**Table 8. The correlation between character, zoning, and house concept**

Clients and their character	Zoning and design concept
H1-chloreric	Private and public zone separates the privacy of family and guests
H2-phlegmatic	Open layout with high flexibility room arrangement, all spaces are designed to open up the opportunities for any room conversion.
H3-sanguine	Some zones are separated, but the semi-private zoning is more flexible. The space concept as a community gathering place
H4-melancholic	All rooms are separated. The spaces are made as closely as possible, with clear access restrictions for non-residents.
H5-chloreric	Complete and sequential according to the space hierarchy. The Javanese house precedent is fully implemented in the space concept.

**DESIGN CONCEPT, ZONING, AND CLIENTS CHARACTER IN HOUSE DESIGN**

The findings on design concepts, space zoning, and client character in five residential designs show how character relations, the client's psychological aspect, are implemented in building design. The most important thing criticized by the reaction about house design and character is the need to assess how the architect's critical ability captures the client's personality. The relation should realize that architects communicate through their design version (Bruggen, 1998). In this case, the architect's objectivity in translating the client's wishes based on their characters must be ascertained from the architect's prominent idealism. Consequently, the architect's and client's satisfaction with the final design product increases (Shabak, Norouzi, & Khan, 2013) (Shabak, Norouzi, Abdullah, & Khan, 2014). Figure 2 illustrates the process that runs between the architect and the client:



**Figure 2. Three activities identified in the communication process in the design scenario (Graell-Colas, 2009)**

In Figure 2, the design process in a residential house starts from communication-related to client needs regarding the design concept, preferences, and zoning. The architect reads the client's character when conveying design concepts at this stage. Characters then emerge through the general characteristics of each group at the scene of idea generalization. The idea must have gone through a negotiation process by both parties leading to communication that solves the existing design problems. However, poor communication is unavoidable when generalizing ideas due to the lack of synchrony of one party in translating the client's needs. Examples are misunderstandings in conveying ideas, conflicts in solving the required designs (Coughlan & Macredie, 2002). Moreover, the architects' profession requires them to be in many different positions, causing many obstacles, especially in communication with clients and generalizing ideas. (Gray & Hughes, 2001).

Managing the interaction between the architect and the client also contributes to conflicts when translating the client's character into ideas and design concepts. Expectations are often placed at the beginning of the consultation period, resulting in mismatched design concepts (Lyytinen & Hirschheim, 1988).

The sanguine and sad characters imply optimistic and gloomy people, respectively. A choleric personality is a person with a high interest in many things, unlike the phlegmatic temperament that tends to be calm (Keirse, 1998). Several things that become essential points, including clients with cheerful characters, place important spaces as private that outsiders cannot intervene. Zoning outside the private zone is more open to other parties. Clients with melancholic character strongly fortify their homes with rigid boundaries and are unwilling to be intervened by any party.

The choleric client implements the house concept with a clear separation between rooms but close relationships. This contrasts with the phlegmatic client that places various spaces in an equal hierarchy. The phlegmatic characters in the study location exhibited a free mind without considering formal boundaries according to general principles in residential building design. Also, houses for phlegmatic-type clients are a means of social interaction for residents and neighbors.

The clients' character is inseparable from their personality represented in the behavioral consistency aspect of everyone (Burger, 1997). The phlegmatic type that prefers an open house concept is considered quite striking compared to other clients. This is based on a psychological study that showed that the phlegmatic type is less reactive, likes peace and new things. However, the character

is the submissive group (Mikuláščík, 2007) with high anxiety and relatively low depression (Howart, 1988). The house spaces must have high flexibility to exchange functions in their application to home design.

The linear relationship between house design tendencies and the owner's character is useful in related business decision-making processes (Birknerova, 2016), such as the property business. Another example is the marketing study conducted to examine the character of consumers towards the products they advertise. This is meaningful in developing the service business in architecture. Therefore, the service marketing goals become consistent by deepening one's character in line with the expected sales targets. The sooner the architect detects the client's character from one of the human personality theory character groups, the more successful the design meets the client's character.

There is a learning aspect in the architect-client relationship. Clients involved in the design process receive much learning, especially on new design aspects (Siva, 2011) and architects that communicate intimately. The last discussion compares the four basic characters in their temperament, self-realization, interest, hobbies, and carrier and working capacity by Qizy & Akmal comparison table, as shown in Table 9.

**Table 9. Discussion about four aspects from four different client characters with the findings**

Research Object	Temperament	Self-realization	Interest and hobbies	Carrier and working capacities	Trend of Character
<b>H1</b>	Sociable, a leader	Needs popularity as they like when people depend on them	Sports, competitions, communication excitement, and risk	Active, ambitious, the boss, the leader —likes to lead.	<b>Choleric</b>
<b>H2</b>	Calm, slow,	Gets rid of obstacles only when they interfere with their measured life	Nature, mechanics, and architecture	Slow, serious, they like to analyze, systematize. Prioritizes stability	<b>Phlegmatic</b>
<b>H3</b>	Active, sociable, a joker	Requires recognition because they love being admired.	Traveling	Ambitious, the leader that loves recognition. Prioritizes money.	<b>Sanguine</b>
<b>H4</b>	Smart, emotional	Often stop making efforts because they are afraid of failure	Philosophy	Subordinate, thinker	<b>Melancholic</b>
<b>H5</b>	Hasty, sociable, and a leader	Goes ahead	Excitement and risk	Active, the leader — likes to lead. Prioritizes career growth	<b>Choleric</b>

## CONCLUSION

The sanguine, melancholic, phlegmatic, and choleric characters could be an architect's initial analysis in reading the client's character. The phlegmatic character expects a more open house concept than the other three characters. The choleric character is a client that meets the demands of the hierarchy of space zoning placement according to architectural design standards.

This study contributes to architectural design practice, where sympathetic personal client character helps the architect understand the house style until the spatial programming. In academic discourses, the relation about successful design criteria theories has a concern about the psychological aspect theories of the user. Moreover, this study contributes to more collaborative literature on understanding humans and their basic needs in a built environment. Behavioral studies on the client and their character are essential to improve the school curriculum, including developing soft skills about managing the relationship with the client for a successful design project.

A significant contribution in knowledge from this study is the development of Engler's theory in the architectural design process and client typology. Architectural design theory in design concept and development steps should also consider client perception about building, especially in commissioning activities. The designer should develop the study related to the client's character into quantitative analysis using data from various clients. It would ensure that the initial suspicion regarding the relationship between the client's character and architectural design is comprehensively proven. This study also needs further studies in the aspect of design satisfaction.

## LIMITATION

The study was early-stage to analyze non-architectural perspective for the probability of successful design by the qualified relationship between architect and client. Furthermore, this study can help policymakers learn about the client's psychological aspect for successful design and meet their satisfaction. In general, four personal characters are used as simple indicators to understand the primary character and the connection to the house design. As shown in Table 7, the four personal characters help analyze an architectural project and the client's trend indication. The results are expected to help develop the architectural industry from the education curriculum to the standard operating procedure in architecture consultants while serving their clients. As a case study, house design helped examine another building typology and multi-client working with the architects. The housing industry

should consider specific practices in house developers and the client's character when building a house. Without this consideration, many house designs in mass production would change in a short time after house handover.

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## REFERENCES

- Ahuja, S; Nikolova, N; Clegg, S. (2019). Professional Identity and Anxiety in Architect-client Interactions. *Construction Management and Economics* Vol. 38 Issue 7. <https://doi.org/10.1080/01446193.2019.1703019>
- American Institute of Architect. (1993). What Client Need.
- Bahga, S., & Raheja, G. (2020). Complexities of practicing architectural regionalism in India: An interview study. *Frontiers of Architectural Research*, 9(3), 568–578. <https://doi.org/10.1016/j.foar.2020.03.003>
- Ballard, G. & Koskela, L. (2013). Rhetoric and Design. *Proceeding on International Conference on Engineering Design*, Sungkyunkawan University, Seoul, Korea.
- Birknerova, Z; Gburova, J. (2013). The Effectiveness of Advertising concerning The Personality of The Consumer. *Journal of Finance and Economics* 2013, Vol. 1, No. 2, 17-21. DOI:10.12691/jfe-1-2-1
- Bruggen, C; Van, F. O. G. (1998). Frank O. Gehry, Architect (Guggenheim Museum Publication). Guggenheim Museum Pubns.
- Burger, J. M. (1997). Personality (4<sup>th</sup> ed.). Pacific Grove, CA: Brooks/ Cole.
- Buse, C., Nettleton, S., Martin, D., & Twigg, J. (2016). Imagined Bodies: Architects and Their Constructions of Later Life." *Ageing & Society*, in press doi: <https://doi.org/10.1017/S0144686X16000362>
- Coughlan, J., & Macredie, R. (2002). Effective Communication in Requirements Elicitation: A Comparison of Methodologies. *Requirements Engineering*, 7(2), 47-60. <http://dx.doi.org/10.1007/s007660200004>
- Cuff, D. (1992). Architecture: The story of practice. Cambridge, MA: MIT Press
- Engler, B. (2009). Personality Theories: An Introduction (Eighth Ed). Cengage Learning, Wadsworth, USA.
- Fleming, D. (1996). Professional- Client Discourse in Design: Variation in Accounts of Social Roles and Material Artifacts by Designers and Their Clients. *Text & Talk*, vol. 16, no. 2, 1996, pp. 133-160. <https://doi.org/10.1515/text.1.1996.16.2.133>
- Frimpong, S., & Dansoh, A. (2018). Marginalization and invasion of architects' role on house projects: Institutional intervention inadequacy and super wicked problems. *Frontiers of Architectural Research*, 7(3), 292–303. <https://doi.org/10.1016/j.foar.2018.04.001>
- Furusaka, S; Kaneta, T, Miisho, T & Akiyama, T. (2018). Client Satisfaction and New Direction of Architects' Services. *Journal of Asian Architecture and Building Engineering*. 1:1, 213-220, DOI: <https://doi.org/10.3130/jaabe.1.213>
- Graell-Colas, M. (2009). Exploring Visual Means for Communication and Collaboration in Multidisciplinary Teams. Master Thesis Ohio University (2009)
- Gray, C., & Hughes, W. (2001). Building Design Management (Vol. 66, p. 177). Butterworth-Heinemann.
- Green, S. D. (1996). A metaphorical analysis of Client Organizations and The Briefing Process." *Construction Management and Economics*, 14(2), 155–164. doi: <https://doi.org/10.1080/014461996373593>
- Hopfe, C. J., & McLeod, R. S. (2021). Enhancing resilient community decision-making using building performance simulation. *Building and Environment*, 188, 107398. <https://doi.org/10.1016/j.buildenv.2020.107398>
- Howart, E. (1988). Mood Differences between The Four Galen Personality Types: Choleric, Sanguine, Phlegmatic, Melancholic. *Personality and Individual Differences*, 9(1), 173-175.
- Ivory, C. (2010). Client, User and Architect Interactions in Construction: Implications for Analysing Innovative Outcomes from User- producer Interactions in Projects." *Technology Analysis & Strategic Management*, 16(4), 495– 508". <https://doi.org/10.1080/0953732042000295801>
- Keirse, D. (1998). Please understand me II: Temperament, character, and intelligence. Delmar, CA: Prometheus Nemesis Books.
- Laing, S., & Apperley, M. (2020). The relevance of virtual reality to communication design. *Design Studies*, 71, 100965. <https://doi.org/10.1016/j.destud.2020.100965>
- Liddicoat, Stephanie. (2018). Writing The Client: The Role of Fictocriticism and Prose Fiction in The Architectural Design Studio. *Journal Higher Education Research & Development* Vol. 38, 2019 – Issue 1 (2018).
- Linden, V.V; Dong, H; Heylighen, A. (2017). The Good Client: How Architect-client Dynamics Mediate Attention to Users. Conference proceeding on Professional Practices in the Built Environment, University of Reading, 27-28<sup>th</sup> April 2017
- Luck, R. (2018). Participatory design in architectural practice: Changing practices in the future making in uncertain times. *Design Studies*, 59, 139–157. <https://doi.org/10.1016/j.destud.2018.10.003>
- Lyytinen, K., & Hirschheim, R. (1988). Information Systems Failures- A Survey and Classification of The Empirical Literature (pp. 257-309). Oxford University Press, Inc.
- Mikuláščík, M. (2007). Manažérska Psychologie. (1<sup>st</sup> ed.). Praha: Grada Publishing, a. s., 384 p. (2007)
- Qizi, K.M.T & Akmal, N. (2021). The Role of Temperament in Human Behaviour. *Web of Science: International Scientific Research Journal*. Vol. 2. Issue 5. May 2021. <https://wos.academiascience.org/index.php/wos/article/view/115/103>
- Royal Institute of British Architect. (1993). Strategic Study of The Profession.
- Roxburgh, MW. (2003). Negotiating Design: Conversational Strategies Between Clients and Designers. ISSN: 18770428
- Schermer, B. (2001). Client-Situated Architectural Practice: Implications for Architectural Education. *Journal of Architectural Education* (1984-), Sep. 2001, Vol. 55, No. 1 (Sep. 2001), pp. 31-42. Taylor & Francis, Ltd. on behalf of the Association of Collegiate Schools of Architecture, Inc. <https://www.jstor.org/stable/1425673>

- Shabak, M., Norouzi, N., Abdullah, A. B. M., & Khan, T. H. (2014). Evaluating Common Spaces in Residential Communities: An Examination of The Relationship between Perceived Environmental Quality of Place and Residents' Satisfaction. *Life Science Journal*, 11(11), 127-131.
- Shabak, M., Norouzi, N., & Khan, T. (2013). An Attempt to Measure the Success of Residential Common Space: A Case Study in Malaysia. *International Proceedings of Economics*, 56, 148.
- Siva, J & London, K. (2012). Client Learning for Successful Architect-client Relationship. *Engineering, Construction and Architectural Management* Vol. 19 Issue 3 pp. 253-268 <https://doi.org/10.1108/09699981211219599>
- Siva, J. P. S & London, K. (2011). Investigating the Role of Client Learning for Successful Architect–Client Relationships on Private Single Dwelling Projects. *Architectural Engineering and Design Management* Volume 7, 2011 - Issue 3
- Smith, T. G. (1996). Fourth Order Design: A Practical Perspective. *Design Issues*, Vol. 12, No. 1 (Spring, 1996), pp. 5-25. The MIT Press. <http://www.jstor.org/stable/1511742?origin=JSTOR-pdf>
- Thyssen, M. H., Emmitt, S., Bonke, S., & Kirk- Christoffersen, A. (2010). Facilitating Client Value Creation in The Conceptual Design Phase of Construction Projects: A Workshop Approach. *Architectural Engineering and Design Management*, 6(1), 18–30. <https://doi.org/10.3763/aedm.2008.0095>
- Van der Linden, V., Dong, H., & Heylighen, A. (2019). Tracing architects' fragile knowing about users in the socio-material environment of design practice. *Design Studies*, 63, 65–91. <https://doi.org/10.1016/j.destud.2019.02.004>
- Zallio, M., & Clarkson, P. J. (2021). Inclusion, diversity, equity and accessibility in the built environment: A study of architectural design practice. *Building and Environment*, 206, 108352. <https://doi.org/10.1016/j.buildenv.2021.108352>