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Prieto Hoces, A. I., & Oldenhave, M. M. (2021). What Makes a Façade Beautiful? Architects' Perspectives on the Main Aspects That Inform Aesthetic Preferences in Façade Design. *Journal of Facade Design and Engineering*, *9*(2), 21-45. https://doi.org/10.7480/jfde.2021.2.5540

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What Makes a Façade Beautiful?

Architects' Perspectives on the Main Aspects That Inform Aesthetic Preferences in Façade Design

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Abstract

The aesthetic of our built environment is perceived as an important aspect to consider for the design of human-centred cities, but a problem quickly arises in the presence of clashing conceptions of what we understand to be aesthetically pleasing. This paper adds to this discussion, by exploring architects' aesthetic preferences in façade design, aiming to include design practitioners in a debate that so far has remained largely academic. Thus, the goal of the study was to identify relevant aspects, based on a series of semi-structured interviews with practitioners representing 34 architectural firms from The Netherlands, carried out from January to April 2020.

It was possible to identify two major types of aspects, and subsequent sub-groups. Intrinsic aspects (compositional, plastic, detail design, and character) comprise aspects that are characteristic of a façade as an object, while extrinsic aspects (human, intellectual, and contextual connection) consist of relational features, determining the perceived beauty of a façade in terms of its connections with an outside agent. The main identified aspects in each one of the groups, the potential relations among them, and their relative relevance within the surveyed sample were part of the assessment, comparing the outcomes against previous results from the literature.

Keywords

façade, design, aesthetics, architecture, interviews, content analysis

10.7480/jfde.2021.2.5540

1 INTRODUCTION

The aesthetic of our built environment is perceived as an important aspect to consider in our quest for the design of human-centred cities. Our built environment should not only respond to physical measurements of comfort, but should also aim to strengthen the psychological well-being of our communities, by means of advancing people's happiness and boosting a sense of pride in their surroundings. To live surrounded by beauty is something we all aspire to, but a problem quickly arises in the presence of clashing conceptions of what we understand as aesthetically pleasing, beautiful, or harmonious. Thus, it becomes necessary to thoroughly explore and discuss different preferences and points of view when it comes to the design of beautiful buildings, and particularly their façades, as the main architectural element carrying the symbolic expression of the building and the architect's intent, while serving as a backdrop for public space and urban life.

The meaning of beauty in architecture and the discussion of aesthetic preferences when it comes to the design of our buildings, have been explored since classical times, with Vitruvius' treatise on architecture as the earliest example. In it, the author proposed an understanding of beauty based on symmetry and proportion as the main traits found in nature's designs, using the proportions of the human body as a model of natural perfection (Vitruvius & Morris, 1914). Since then, this understanding of beauty in architecture has been the leading theory, exemplified over time by the widespread use of the 'golden ratio' in renaissance architecture (Alberti, 1986), or the use of an anthropometric scale of proportions in the work of Le Corbusier during the mid-twentieth century (Le Corbusier, 1953).

In recent decades, the aesthetic perception of the built environment has been addressed by several scholars, mostly on two fronts: either from a theoretical perspective, anchored in a historically rooted philosophical discourse; or through the assessment of the responses of different groups of participants, following surveys and questionnaires from psychology studies. It should be mentioned that there are also relevant efforts from the field of cognitive neuroscience, aiming to understand how our brain perceives visual environmental stimuli (Kirsch et al., 2016; Pearce et al., 2016; Rolls, 2014). However, these are broader in scope, not directly tackling particular aspects associated with architectural and urban design.

First, several theoretical studies in recent decades have discussed aesthetics in architectural design, aiming to identify underlying aspects and resources for the design of beautiful or harmonious buildings and façades. Krier (1988) wrote in his book about architectural composition that the fulfilment of aesthetic requirements depends on the artistic interpretation of proportion, structure, material, and colour. Moreover, he stated that geometry is the basis for all forms of architectural expression, and architecture, as organised geometry, draws its strength from opposing rather than adopting the laws of nature. Salingaros (1995; 1999; 2000) on the other hand, declared that structural orders present on historical buildings are the main reason we find them pleasing; they follow the ordered internal complexity found in nature-based and organic forms. This direct link to nature was expanded by Alexander (2004) in his four-volume set on the art of building and the nature of the universe. In it, he wholeheartedly advocates for liveliness and elements derived from nature as defining traits used to understand beauty in architecture, proposing fifteen properties to guide the design of lively geometries, inspired by patterns and visual cues found in nature.

Other theoretical works worth mentioning have focused on the impact that certain visual cues have on the observer. Nasar (1994) stated that architecture is the cause of diverse feelings, such as pleasantness, excitement, or calmness, which may be promoted through the use of certain key

design aspects (complexity, order, style, and atypicality). Smith (2003) stated that the recognition of patterns and the incorporation of opposites into a balanced whole, are the two sides of the coin of aesthetic experience. Moreover, he also acknowledged the influence of nature in human perception, describing the essence of beauty—as we find it in nature—as the clash between complexity and order. Lastly, de Botton (2006), in his seminal book *The Architecture of Happiness*, explored the links between aesthetics, architecture, and their influence on our happiness, emotions, and behaviour. He focused on the communicative aspects of architecture, stating that buildings embody social values, which we perceive through the lens of our own experiences. Hence, what we perceive as beautiful serves as evocation of the values that we hold dear, directly connecting our buildings and their façades to the human scale and experience.

Discussing the outcomes from experimental research and surveys, Coburn et al. (2019) studied psychological responses to natural patterns in architecture, following the biophilic hypothesis previously discussed. In the study, 167 participants were asked to arrange images based on aesthetic preference, obtaining a close relation between aesthetic preference ratings and presence of natural patterns in architecture. Tinio & Leder (2009) studied the role of symmetry and complexity in the aesthetic judgement of buildings, through individual and group assessments of sets of images with different scenarios. Symmetry was found to be more important than complexity to explain aesthetic preferences of the participants. Another study by Keshtkaran et al. (2017) studied aesthetic preferences in high-rise buildings based on the definition of two sets of contrasting factors: (a) primary factors (balance, symmetry, regularity, simplicity, unity, economy, understanding, predictability, subtlety, neutrality, opacity, consistency, scale, flatness, sequentiality, proportion, colour, materials, and style); and (b) distinctive factors (asymmetry, complexity, spontaneity, activity, stasis, boldness, emphasis, transparency, variety, scale, depth, randomness, colour, materials, solids/voids). The study showed that people preferred designs that tend to follow distinctive factors. Finally, other explorations have focused on the role of specific aspects in the aesthetic perception of buildings, such as the use of colour and its communication potential (Meerwein et al., 2007; Mikellides, 2012; O'Connor, 2008), or the role of patterns and variations in architectural composition (Breen, 2019; Chamilothori et al., 2019; El-Darwish, 2019).

As the presented overview shows, the matter of aesthetic preferences in architectural design has been a clear topic of interest for scholars; however, the discussion has remained largely academic, failing to acknowledge the perspective of architects and urban designers, who are the ones shaping our buildings and cities. Their insights are undoubtedly relevant to understanding the logic behind façade design—the face of our buildings—where their preferences have a clear impact on not just the look, but also the performance, of our built environment. On a more practical note, acceptance from architects and façade designers is often cited as a common barrier for the integration of new technologies in the built environment, technologies that could help mitigate the environmental issues we currently face (Farkas & Horvat, 2012; Prieto et al., 2017; Tablada et al., 2020). Further discussion and understanding of aesthetic preferences in architectural design could potentially lead to the development of a wide array of multifunctional building products for façade applications, tailored to different aesthetic sensibilities from both architects and the general public.

This paper adds to the knowledge in the field, by showing the results of a study conducted to assess the perception of architects regarding aesthetic preferences in façade design. The aim of the study was to identify parameters and relevant aspects involved in the appearance of buildings, based on a series of interviews with practitioners from different architectural firms in the Netherlands.

The choice to use interviews as the source of the study followed the intention to understand conscious preferences when it comes to façade design, as part of a larger discussion about these topics involving experienced practitioners. The results presented in the paper are framed within a larger research project, where, at a later stage, they will be used to design an image-based survey for mass-distribution, assessing the underlying preferences of a much wider sample based in the identified aspects from the interviews, testing their validity in a larger context. In that sense, it is important to state that while the results from the interviews are regarded as valuable information, they do not claim to be exhaustive nor universally valid; they aim to provide insights on aesthetic preferences in façade design, through the perspective of Dutch architects, so the cultural background of the sample must be kept in mind when assessing the results.

2 MATERIALS AND METHODS

2.1 DATA-GATHERING METHODOLOGY

The study follows the qualitative evaluation of a series of interviews with architects, by means of content analysis techniques. An initial list of architectural firms in the Netherlands was composed through internet queries in specialised architectural portals and professional networks, considering established companies with a dedicated website, with a base of operations in Amsterdam, Rotterdam, Delft, or The Hague. It was also an initial condition that the work shown on their websites comprised more than just single houses, showing a certain degree of experience with complex projects.

Based on the initial list, 82 firms were contacted via e-mail inviting them to participate in the study, using the contact information listed on their websites. Following that, 43 firms replied (52% of the total firms contacted), which finally resulted in 34 successfully conducted interviews (41% of the original firms invited). In all cases, the e-mails were directed to one or more of the partners, inviting them to take part in the study personally, or alternatively to appoint someone who could represent the work of the firm. The interviews were conducted from January to April 2020. Most of them took place on location, but the last 7, originally scheduled in March, had to be cancelled due to Covid-19 restrictions, and later rescheduled online.

The interviews followed a semi-structured questionnaire comprising open-ended questions, and took 45 minutes on average. The questionnaire was developed with the larger aim to identify and explore certain aspects to be considered in façade design. Hence, both general and specific information about the façade design process of each firm was considered in the data gathering. Consequently, the questionnaire was structured around five main themes: (i) general information; (ii) general design approach; (iii) façade design elements and intentions; (iv) aesthetic perception of façades; and (v) sustainability in façade design. The results presented in this paper refer to the fourth theme, which aims to explore what the interviewees perceive as a beautiful façade, focusing on the definition of specific traits, elements, or aspects involved in their aesthetic perception (What are in your opinion the main aspects or elements involved in the aesthetic perception of façades? What makes a façade beautiful?).

2.2 DESCRIPTION OF THE SAMPLE

The first set of questions from the questionnaire (general information) aimed to characterise both the firm and the interviewee, to better describe the sample. Basic information about the firm (location and size) was registered, and the role/position of the interviewee within the firm, their gender, and their years of experience as an architect/designer were gathered from the interviewee. As mentioned in the previous section, 34 interviews were successfully conducted. The interviews were recorded and transcribed, and then coded for the assessment following conventional content analysis techniques using the software ATLAS.ti, resulting in a database in excel to allow for the qualitative and quantitative analysis of the gathered information.

The database consists of architects' responses from 34 different architectural firms in the Netherlands, located mostly in Amsterdam (12 firms / 35%) and Rotterdam (16 firms / 47%), and the remaining ones in Delft and The Hague (6 firms / 18%), as shown in Figure 1. Regarding the size of the firms (Figure 2), most are small sized companies, having between 10 and 49 employees (47%), followed by medium ones (41%). Within the latter group, a sub-distinction is made in the graph, between medium sized companies with fewer than 100 employees (10 firms / 29%) and medium-large sized companies employing 100-250 people (4 firms / 12%). Lastly, 4 micro sized companies (fewer than 10 employees) also took part in the study (12%).

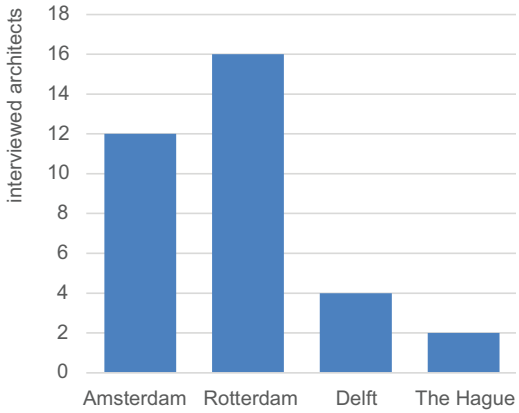


FIG. 1 Location of the interviewed firms

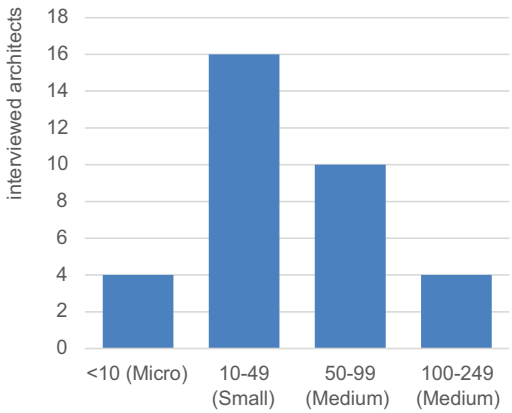


FIG. 2 Size of the firms (n° employees)

About the interviewees, 79% of the sample are male, and 21% are female; the vast majority holds a partner position in the firm (85%, comprising 9 partners and 20 founding partners). The remaining 5 interviewees are either architects or associate/senior architects in each company (Figure 3). The participants were also asked to state their years of experience in architectural design (Figure 4). Roughly a third of the group has between 10 to 19 years of experience (32%), and another third has been designing for 30-39 years (32%). Following these groups, 6 interviewees declared that they had 20-29 years of experience (18%), and another 5 had 40 or more years (15%). Lastly, only one participant claimed to have less than 10 years of professional experience as an architect.

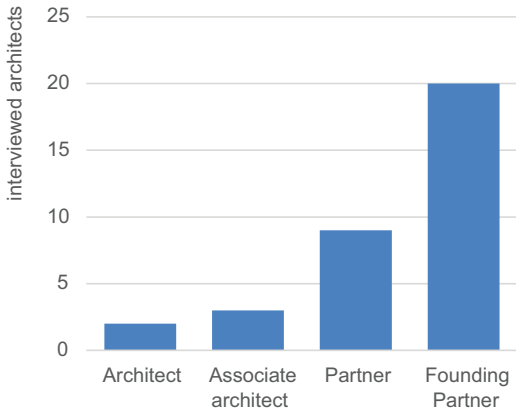


FIG. 3 Position of the interviewee in the firm

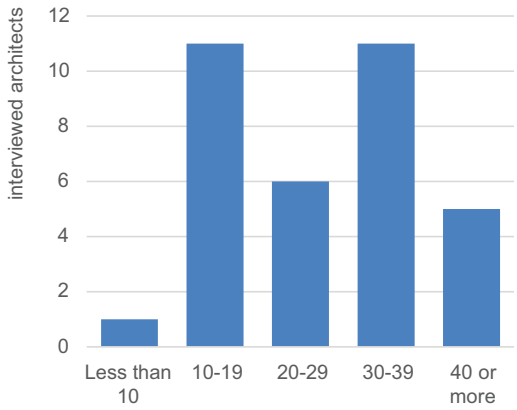


FIG. 4 Years of experience in architectural design

3 RESULTS: AESTHETIC PREFERENCES IN FAÇADE DESIGN – WHAT MAKES A FAÇADE BEAUTIFUL?

The interviewees were asked to state what are, in their opinion, the main aspects or façade elements involved in how we aesthetically perceive façades, or more broadly, what makes a façade beautiful according to their own perception. The responses were then coded as part of the assessment following conventional content analysis techniques, to group, explore, and conceptualise the outcomes. Thus, the codes were obtained directly and inductively from the responses, without using predefined categories.



FIG. 5 Word cloud of the identified aspects involved in the aesthetic perception of façade

The word cloud shown in Figure 5 depicts the codes/keywords obtained from the responses, with word sizes illustrating the amount of total mentions. The assessment of the results mostly focused on the identification and discussion of certain themes throughout the sample, from a qualitative perspective. Thus, the amount of mentions per keyword or general theme will only be regarded as referential. Nevertheless, it is worth noting that after coding the responses, material expression was the aspect that received most mentions, alongside others such as detail quality, and tectonics. This seems to point out that the interviewed architects have a marked susceptibility for aspects related to material and construction when it comes to façade preferences, which was also previously evidenced by the presence of material as the most mentioned basic resource for façade design. The assessment does not aim to be comprehensive, so it is important to keep the particularities of the sample in mind when reviewing the outcomes.

Another issue worth mentioning, before delving into the responses in more detail, is that most of the interviewees stated several themes or aspects that contribute to the perceived beauty of building façades. Hence, it was found to be nearly impossible to find one defining trait from their own experience that would explain what makes a façade beautiful. Even though specific aspects did stand out in their responses, this serves as further evidence of the complexity of the subject of study.

Based on the initial coding of the responses, it is possible to first identify two major types of aspects that seem to have an impact on the aesthetic perception of façades: intrinsic and extrinsic. The former type comprehends aspects that are characteristic of a façade as an object, while the latter consists of relational features, determining the perceived beauty of a façade in terms of its connections with an outside agent. Within these major groups, some sub-groups were identified by exploring the coded responses, which resulted in the generation of a categorisation tree for the organisation and assessment of the gathered data. The identified groups and sub-groups are depicted in Figure 6. All groups were identified after the initial exploration of the responses instead of being predefined, so the categorisation tree is regarded as the first outcome of the assessment.

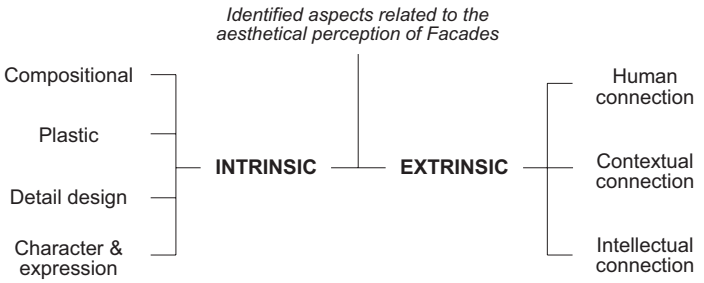


FIG. 6 Categorisation tree proposed for the identified aspects from the responses, based on the distinction of intrinsic and extrinsic groups of aspects

The intrinsic groups comprise aspects that describe a façade in terms of its own inherent qualities, isolated from any information regarding the context. Examples of elements within these groups that inform our perception are composition, colour, proportion, or texture, among others. It feels important to point out that even though these focus on the object, there is always a subject experiencing it, so an inherent level of subjectivity will always be part of the appraisal. Within this major group, it was possible to identify four sub-groups of intrinsic aspects: (i) compositional, (ii) plastic, (iii) detail design, and (iv) character & expression.

On the other hand, extrinsic aspects qualify a façade, considering how it establishes a relation to an external agent. Hence, in these cases, the mental connections built by the observer are what govern the overall perception of a building façade, instead of its isolated attributes. Within this group, it was possible to identify three sub-groups: (a) human connection, (b) contextual connection, and (c) intellectual connection. Both intrinsic and extrinsic sub-groups will be examined in more detail in the following section, providing a number of selected quotations as examples from each group, for a deeper understanding of the gathered responses.

3.1 INTRINSIC ASPECTS FOR THE AESTHETIC PERCEPTION OF FAÇADES

The first group (compositional) comprises aspects that are based on a compositional approach to façade design, emphasising the relative arrangement of different visual elements, as a defining trait for an aesthetically pleasing façade. This seems to correspond to a more classical view of façade design, bringing it closer to other pictorial arts, similar in a way to organising visual elements on a blank canvas. Further evidence of this 'classical' viewpoint, beyond its ties to the visual arts, is seen in the wording used by some of the interviewees (Table 1). Statements such as "*it is of course the composition,*" "*it's certainly the composition of elements,*" or "there is of course something which lots of people before me have tried to describe about proportion and rhythm"; show a categorical stance on the matter, backed by consolidated knowledge and tradition.

Within this sub-group, the main identified codes from the responses were related to proportions (n=10) and the composition of solids and voids (n=7), the latter being what most interviewees referred to when further explaining their preference for composition (*"it's certainly the composition of elements, mostly open and closed"*). The importance of this compositional resource (solids vs. voids) was particularly stressed by one of the interviewees, placing it in a contemporary context by declaring that due to the lack of ornamentation, craftsmanship and relief of modern façades, the main design resource currently left is the relation between the open and closed parts of the façade, alongside proportion.

Proportion on the other hand, was clearly identified as an aspect to consider by close to a third of the sample, even being regarded as a central one by some of the interviewees (*"it all starts with proportion"*). Its relevance was further stressed in some of the responses by appealing to proportions and *"harmonic measures"* as overarching rules that dictate how we assess beauty, transcending personal subjectivity. Other identified aspects that share the same group were rhythm (n=3), and stratification (n=4), the latter referring to the acknowledgment of different strata within the building (base, middle, and top), and its clear reflection on the design of the façade.

The second group of intrinsic aspects (plastic) refers to sculptural qualities of the building façade, thus exceeding its appreciation as a mere plane, in favour of a volumetric approach to it. This group then gathers concepts such as *"sculpturality"* or *"plasticity"* as general notions that apply to beautiful façades, according to some interviewees (Table 2). Here, the most mentioned aspect by the interviewees was material expression (n=16), further explained as getting a sense of the material, following a tactile approach to façades; letting the material and its inherent qualities show through the design. This expression was also mentioned to carry over time, so the durability and ageing of materials were explicitly mentioned as relevant aspects that define how this expression will change over time, without losing its beauty.

TABLE 1 Selected quotations from the interviewees categorised under "Compositional aspects"

IDENTIFIED ASPECTS / KEYWORDS	SELECTED QUOTATIONS	POSITION (YEARS OF EXPERIENCE)
Composition solids/ voids	"It is of course the composition. How the solid and the open part of a façade form a certain structure, composition".	Partner (30)
Composition solids/ voids	"It's a lot about indeed composition and being open or closed, or being approachable and non-approachable. That those aspects are in the right balance".	Founding Partner (17)
Composition solids/ voids	"it's certainly the composition of elements, mostly open and closed".	Partner (36)
Composition solids/ voids; rhythm	"The way that the windows are put in the facade. It could be a very nice rhythm or a play of different kind of windows".	Partner (15)
Proportion; scale; Composition solids/ voids	"(nowadays) you have no ornament, you have no craftsmanship and you have a flat facade. And then the only thing that remains are the proportions, they stay. The proportion stays, scale stays and I think the most important aspect is the relation between the parts that are open and the parts that are closed. That is the main thing".	Founding Partner (24)
Proportion; rhythm	"There is of course something which lots of people before me have tried to describe about proportion and rhythm".	Founding Partner (18)
Proportion	"I think it all starts with proportion"	Founding Partner (30)
Proportion	"The proportions is of course something that is coming back always, also in smaller elements, but also in the facade as a whole, is an important parameter"	Architect (10)
Proportion	"It's about harmonic measures in a way"	Partner (37)
Proportion	"I think that if you design a façade... and I might not like your style or you are not a fan of mine, but if it's well-proportioned, I think there is somehow a generic rule for answering something in a proper way"	Associate Architect (15)
Stratification	"(I don't like it) If the building neglects that the base has a different function than let's say a middle part and the upper part".	Founding Partner (17)
Stratification	"I like it when... I would almost say that I'm in that way a kind of classical thinker. I mean, everything has a plinth, a middle and a top".	Partner (37)

Accordingly, several interviewees declared a preference for certain materials, deemed more expressive, particularly considering how they look over time. Therefore, natural stone, brick, or concrete were preferred by a section of the sample for their *"plastic expression"* and response to ageing, in contrast to the use of aluminium or steel, which were deemed to result in *"too smooth"* façades, which do not naturally age (*"in fact, you should clean them every year, but no one does it, so then it gets dirty and you see it getting older (...) but's it's just getting more ugly"*).

Two concrete aspects explicitly mentioned in relation to this material expression in façades, were texture or relief (n=7); and depth (n=5). The use of these resources in façades directly reflects their sculptural qualities, either by playing with the finishing of the material, promoting roughness over smoothness (*"very smooth façades have no appeal to me at all, because, what can you read from that?"; "most of the time we don't strive for super smooth façades"*), or by purposely misaligning façade components to configure a volumetric perception (*"for me it's about depth, in the literal sense of the word, how you play with the position of the window in the brickwork and position of the lintels. It is about these 40 centimetres or something, 24-20 in the brickwork"*). Moreover, it was stated that the use of texture and depth bring liveliness into the façade, besides serving as a means to reflect human scale on to the building.

It is noteworthy that two respondents expressed a concern for the current loss of sculptural qualities in façades, identifying its source on the impact that the requirement for continuous insulation has had in façade construction. Thus, the insulation layer acts as a barrier between the structure of the façade and its outermost layer, the cladding, which is in turn what we see from the outside. Cladding, then, and not a load-bearing massive element is what ultimately defines the expression of the façade, which was an issue that was shared by other interviewees and will be expanded later in the text.

TABLE 2 Selected quotations from the interviewees categorised under "Plastic aspects"

IDENTIFIED ASPECTS / KEYWORDS	SELECTED QUOTATIONS	POSITION (YEARS OF EXPERIENCE)
Material expression; roughness; sculptural materials	"What I personally like very much is to stress a certain solidity and sculptural quality of a façade. So you know, very smooth façades have no appeal to me at all, because what can you read from that? (...) I prefer materials than can really, have this kind of sculpturality or plastic expression, so I am more into brick, concrete, even with plasterwork you could do it".	Partner (30)
Texture; material expression; roughness	"I think that a façade, for me, it has to have texture, so it has to express some material... So, that can be concrete, I like brutalism very much, for example;. but there has to be a very specific balance between... not too smooth, and not too much designed, but there have to be some, maybe rough things in it".	Partner (35)
Material expression.	"The plasticity, I love plastic façades. That you have a kind of... you have a sense of the material, the tactility of a façade".	Partner (15)
Material expression.	"Also the expression of material, the durability of this. How does the building look in ten years? How does it get old? Does it get old in a beautiful way?".	Founding Partner (30)
Texture; depth	"I think the material is also very important. The plasticity, tectonics, texture of the rhythm. I like it when you have more.. sometimes you play with the depth, I think that makes a facade beautiful".	Partner (15)
Texture; depth	"I think texture. That is really something to start with if you want to, you know, something with a lot of relief, structure elements and depth, shade and all that".	Founding Partner (33)
Texture; depth	"If you talk about depth and relief in the façade, that will bring the facade to life. So, most of the time we don't strive for super smooth facades".	Architect (10)
Material expression.	"We started to understand the material better, and then it's just very nice to figure out how we can really create items that have certain qualities that you really can't reach with any other technique".	Founding Partner (14)
Depth	"I really like to have depth in my facade. That is also something that we are really happy to use".	Partner (34)
Depth	"I think that for me it is about depth in a way. Depth in the literal sense of the word, how you play with the position of the window in the brickwork and position of the lintels. It is about this 40 centimetres or something, 24-20 in the brickwork".	Founding Partner (27)

The third identified group (detail design) refers to constructional aspects with emphasis on the resolution of details in an aesthetically pleasing manner. Specifically, the quality of the detail, in terms of how the different components are assembled, was regarded as a relevant aspect by a third of the sample (n=11), which adds up to almost half of it (n=16) if we also consider the interviewees who mentioned tectonics (n=9) in their responses. When discussing this aspect, some interviewees expressed awareness of the fact that while it is widely perceived as relevant for architects and other

professionals in the field (statement that echoes the frequency of mentions received in the study), it is probably perceived as a minor or non-existent issue for the general public. Nonetheless, they were inclined to surmise that a well-designed detail would be reflected on other aspects that would make people appreciate the façade anyway. This fact serves as a good reminder of the scope of the study and the clear differences in aesthetic perception that would arise from a comparison between architects' and non-architects', as other studies have suggested.

TABLE 3 Selected quotations from the interviewees categorised under "Detail design"

IDENTIFIED ASPECTS / KEYWORDS	SELECTED QUOTATIONS	POSITION (YEARS OF EXPERIENCE)
Detail quality; tectonics; calm details	"The way things are mounted and constructed on the site is a very important aspect. I think that for the audience is a minor detail; but for the... let's say the people who are part of the profession, these are huge differences; and I think for the audience if you would compare it somehow they would say that the other one looks calmer and better, more pure".	Founding Partner (17)
Detail quality	"I think it's nice if there's some sort of aspect where you think "oh this looks really nice", or well detailed, interesting choice".	Partner (21)
Calm details; simplicity	"I always get a bit nervous when we have a lot of joints in our facades, a lot of things have to meet each other, like... could we think of some reduction there? I mean, life is complicated enough already, with all these complicated materials. So, let's avoid unintended, too much fuss".	Founding Partner (30)
Calm details; tectonics; simplicity	"The absence of superfluous-ness, superfluidity, how you'd call it. The fact that you can return to a building as it was meant to be, how it was created".	Partner (36)
Simplicity	"To make something look simple is extremely difficult".	Architect (6)
Simplicity	"If you see a building properly done by good architects, then I would appreciate about its beauty, when there is as little design as possible. When it is too much... I don't like big things on the table. Keep it simple".	Founding Partner (40)
Refinement	"I think it's super important that it is refined, but it's difficult to grasp as well; but it has something to do with what I said earlier, I can pretty much say that I always try thinning the profiles that we are using, and make it elegant; and because of that you can make it stronger, or robust in other elements".	Founding Partner (18)
Refinement	"Refinement can also come from designed elements that are obviously designed, so, I don't know, the little hands that Neutelings Riedijk put on the MAS, in Antwerp, for instance. That's a blatant example, so if it didn't have that, probably it wouldn't be as refined because it would just be this big natural stone block".	Founding Partner (18)
Refinement; ornament	"You can make kind of ornaments. My colleague here makes beautiful concrete ornaments for what are called functional elements, such as a gutter downspout at the top of the facade, these things. So also on that level you can put in more refinement".	Founding Partner (27)

Within the responses related to detail design, two aspects explicitly appeared in some of the interviews: a preference for calm details (n=4) or simplicity (n=2) and the mention of refinement (n=5) as another condition for a beautiful façade. Calm details, and simplicity (n=5, considering both mentions) were two codes identified for the clear preference for keeping the appearance of the façade simple, avoiding *"unintended, too much fuss," "too much noise,"* superfluous elements, or over-designed solutions (Table 3). When expanding on this issue, the interviewees stated that a more simple, calmer look does not necessarily imply having less detail on the façade, but instead depends

on the way façade components are connected, which circles back to the aforementioned quality of the detail. After all, as one of the respondents put it, in façade design, *"to make something look simple is extremely difficult."*

On the other hand, refinement was less clearly defined, but the word itself popped up in five separate interviews, invoking a general elegance or grace in the design. Based on the responses, it was possible to identify two ways to achieve this. One way was the inclusion of carefully designed ornamental elements in certain places, such as gutter downspouts and door handles, or the mention of the Museum aan de Stroom, in Antwerp, and the cast aluminium hands that adorn its stone façade panels. The other identified way to add refinement to a façade was by controlling the dimensions and proportions of certain elements, particularly window frames and metal profiles, where thinner profiles were declared to be more elegant. On the other hand, another interviewee stated that even when they have to use thicker window profiles, by using large-scale, robust elements such as façade cladding, they manage to maintain a certain refinement by contrast. On a similar note, several interviewees declared an aversion to PVC window frames, due to both their width and their material expression (or lack thereof).

Finally, the last group of intrinsic façade qualities comprises aspects related to its *"character and expression."* Within this group, part of the sample generally stated that a façade needs to have *"character"* to be perceived as beautiful (n=4). What constitutes character was not clearly identified, due to the fact that it could come from several features. In this regard, a resemblance to a person was posed by some interviewees, as when we encounter certain people that have a presence, an aura of self-confidence, or seem to be in balance (Table 4). Therefore, it could be something about the whole façade, or about certain features that capture our attention and give identity to the façade.

The perceived attractiveness of a façade arose in the responses, in the sense that it needs to attract our attention to be perceived as beautiful. Mentions of a *"wow-effect,"* amazement, or surprise were stated to be conditions pertaining to finding a façade beautiful (n=5), related to originality and innovation on its design. Certainly, this surprise effect could be generated in a myriad of ways; however, three specific façade features that boost their potential for attraction were identified among the responses: having a dynamic or changing expression; having a layered design; and the use of colour.

First, the choice of façades that do not always look the same, and thus change their expression, was declared to be an explicit preference by some interviewees (n=6), arguing that it increases the liveliness of the façade. Moreover, this dynamic expression comes from the reaction of the façade, or its components, to variable environmental stimuli, mostly light inputs from local weather conditions. Hence, through the use of particular materials, special surface treatments, or texture; these façades look differently throughout the day, or differ between sunny and overcast days, for example.

The second identified feature refers to another way to generate different expressions in the façade, through a layered design approach (n=4). Here, the façade is designed with consideration given to different layers of detail and information (and sometimes literal constructive layers), responding to different scales of perception. Thus, instead of making the façade itself change or react to the environment, a layered façade uses the relative position of the observer to seemingly change its expression when perceived from different points of view. In other words, the building and its façade will be recognised from a distance, but distinct elements and details will appear as we approach it, enriching the visual experience and thus increasing the attractiveness of the façade.

TABLE 4 Selected quotations from the interviewees categorised under "Character & expression"

IDENTIFIED ASPECTS / KEYWORDS	SELECTED QUOTATIONS	POSITION (YEARS OF EXPERIENCE)
Character	"It's beautiful when it has this radicality. When you see that it is self-evident and it gives the building.. It's like with people, some people are self-assured and they have a presence when they walk somewhere".	Founding Partner (33)
Character	"I think for me it's character which makes something beautiful. It could be anything. It can be something that is enlarged. It can also be something that is very much in proportion".	Founding Partner (20)
Character	"If a building has a good character and it approaches me on the same adult level as I am. So if the approach to the building is equal to mine, I think there is beauty. I recognise the building as my partner and I can love it as such".	Founding Partner (40)
Amazement	"I think buildings should never be boring. So architecture needs to be discovered (...) that you really have this wow-effect and that you kind of have the feeling 'how did they do this' for instance".	Architect (6)
Amazement	"I think it's beautiful when it sort of fits the building itself, fits its environment, but it also surprises you a bit".	Partner (21)
Changing expression	"I think it's nearly always important that there is a liveliness to the materials that you use, so that they are different on a rainy day or on a light day, so they're in some way responsive to the light and the conditions around them".	Founding Partner (18)
Changing expression	"I think it's very beautiful if the building can transform a bit over the day and the night, that it plays with light, I guess, as an effect on the façade".	Founding Partner (30)
Changing expression	"Sometime I prefer facades that have a change in themselves. If you think about anodised aluminium as an example, it changes with the lights. So in the morning, it has a different reflection than in the twilight. So it really changes with the weather and the sun, that can make a facade very alive".	Founding Partner (15)
Colour; character	"I do like to use colour, because it works fantastic with light. I've made a lot of buildings in colour. And colour is important though you must not over react. Colour might express a certain character, but it's not so 'I have a green shirt so I'm now all of a sudden durable', not at all. It is actually the tone of the light versus the dark, that works. So it's the tone colour and it's tone value rather than colour itself".	Founding Partner (40)
Colour	"I spend a lot of time for colour, in the interior is quite difficult. I really think about the outside facade for instance, I often give another colour than the inside because of the sun, because of the contrast, because... I think of a lot of complimentary materials and colours because I like when an interior speaks".	Partner (37)
Colour	"Generally I'm wary of colour, lots of colour, unless it's done well. It has to be regarded with a bit of distrust until you're absolutely sure".	Founding Partner (18)
Colour	"A mere colour is very cheap and shallow. It has no deeper meaning or it's not very... intellectually, it's not very pleasing".	Partner (23)

Third, the use of colour was found to be somehow controversial, and different viewpoints were gathered on the matter. While some interviewees considered it as a feature that may make a façade beautiful (n=4); some others were wary of it, advising its use only when absolutely necessary, and one interviewee even declared the use of colour as *"cheap and shallow,"* and not pleasing from an intellectual point of view. These claims, being gathered from open questions, show that this is clearly

a relevant issue on the visual perception of façades, acknowledging it even if it did not fall within their own preferences. An interesting point regarding the use of colour was brought by one of its advocates, stating that colour is important, but it is not really about the colour itself, but instead about its tone value, in contrast with other visual elements. This sentiment somehow grounds its application in façades, adding a deeper understanding of colour and its role within a composition, as opposed to the mere *"shallow"* application of paint coating over a building surface.

3.2 EXTRINSIC ASPECTS FOR THE AESTHETIC PERCEPTION OF FAÇADES

As mentioned earlier, the extrinsic aspects that may explain aesthetic preferences when it comes to façades, are defined by the relations between these façades (or their components) and external agents. These agents are the foundations for the sub-groups presented in this section: (a) contextual connection, (b) human connection, and (c) intellectual connection.

Out of all the identified sub-groups (both intrinsic and extrinsic), the relationship of a façade to its context was the one that received the least number of mentions (n=8). Within this sub-group, most mentions referred to the explicit reaction of the façade to its local urban context (n=6), followed by its interpretation or acknowledgement of local culture (n=3). The low number of relative mentions may seem surprising, especially considering that virtually all interviewees stressed in a different section of the questionnaire that awareness of the context is one of the key issues in façade design. Even though further information is needed to pose a comprehensive explanation for this seeming mismatch, this may be regarded as a basic competence when it comes to architectural design. As one of the interviewees articulated it, the design of the façade in an urban setting always entails a *"balance between blending in and standing out."* Therefore, it could be the case that this dichotomy is one more set of aspects to successfully integrate in a design, without being largely understood as an explicit condition to find a façade beautiful (although probably the opposite would hold true, with façades that do not fit their environment being perceived as unappealing or shallow).

TABLE 5 Selected quotations from the interviewees categorised under "Contextual connection"

IDENTIFIED ASPECTS / KEYWORDS	SELECTED QUOTATIONS	POSITION (YEARS OF EXPERIENCE)
Urban context	"I think when a building is beautiful it's when it reacts to its urban context".	Founding Partner (17)
Local culture	"It is several things, it's culture and it's history".	Founding Partner (41)
Urban context	"The question is, does it work in the public space? So, as an object, I could really like it. In relation to the public space? Hmm... Is it something I want to relate to if I'm just walking by?	Partner (34)
Urban context	"Last century the opinion, the common opinion was that the facade is not a free thing. It is directly connected with the interior, with the structure. I believe very much that the facade can be separated (...); in that opinion the facade belongs to the public space and not to the structure"	Founding Partner (45)
Urban context	"It depends really on all aspects; how it is connected to the context (...), how you can see what the program is inside".	Founding Partner (40)

TABLE 6 Selected quotations from the interviewees categorised under "Human connection"

IDENTIFIED ASPECTS / KEYWORDS	SELECTED QUOTATIONS	POSITION (YEARS OF EXPERIENCE)
Human touch	"Facades I like, somehow they should not be perfect. Perfect façades are normally not very human; so, they look perfect but they're very anonymous (...) I like it when there's some kind of personal touch in the façade, you see a certain struggle in the façade, you know? The beauty of imperfectness".	Founding Partner (13)
Human touch	"So we like to strive also for little imperfection now and then. So adding the human hand in the process and in the design. That makes it even more special and it works on this (small) scale, but it also works from a big distance as well".	Architect (10)
Readability	"For me, for us, for the office, it is this important than you can read and understand, in a way, the facade. That means that it has to be regular, on the edge of getting boring".	Founding Partner (27)
Readability	"I think that the readability of buildings is very important for people. That they can understand, read the language of the architecture, because architecture is also a form of communication. Too much abstraction makes buildings dead and public spaces dead".	Founding Partner (45)
Readability	"Understandableness. You have to understand the façade, what is it about, that it is still understandable how it works. And that you know if it is closed or that it can be opened".	Founding Partner (40)
Human scale	"That it also reacts to.. or at least.. knows how it behaves itself to the human proportion and you can deliberately say 'I want to be bold' by making a huge building. But at least that it reflects to the human scale".	Founding Partner (17)
Human scale	"I think relief in general in a facade is an architectural means of relating to human scale and people".	Founding Partner (33)
Human scale	"Something on the human scale that gives something to the people".	Architect (10)
How it feels	"It's about haptics. How does a façade feel for instance. Is it very shiny? or is it a combination of reflections?".	Founding Partner (13)
How it feels; user interaction	"I like a facade to be not.. let's say hard, in the sense of getting a facade that you just walk by and it doesn't interact with you".	Partner (34)
How it feels; user interaction	"It's always that it's not like this cold thing which is inside-outside, but it has like a bench going on through the inside or the outside".	Partner (15)

Unsurprisingly, several mentions of extrinsic aspects referred to different relations we can establish between the building façade and ourselves, the observers, which were then grouped under the label *"human connection."* The first identified aspect that is worth mentioning is the preference for façades that acknowledge the human scale (n=5), as a way for the building to relate to us. It was stated in one of the answers that this may not particularly imply a direct translation of human dimensions, but rather it is about a clear approach that guides how the building behaves in relation to human proportions, reflecting the human scale even in large scale buildings (Table 6). Related to this human reflection, another aspect mentioned by a group of interviewees was their preference for façades that are not perfectly finished, but rather have imperfections caused by *"having a human hand in the process and in the design,"* alluding to a *"beauty of imperfectness"* (n=3). "Perfect" façades, on the contrary, were described as anonymous and not very human. Thus, the result of a human touch in façade construction was stated to convey *"a certain struggle"* that makes them relatable.

Two other identified aspects associated with this human connection seem to be related to distinct ways of how we perceive and react to façades, either from a more intuitive standpoint or a more rational approach to the object. The first aspect refers to statements about how a façade feels, grouping different sensorial inputs that shape our interactions with it (n=5). Besides general notions of the feeling that a façade gives and references to our experience of it, different themes expressed by the interviewees were its reaction to touch (haptics), the perceived temperature of façade surfaces, visual cues related to its specularity, and a certain softness on the façade that allows us to interact with it, through specific functional elements (like a bench), or other unidentified features that makes it approachable as a whole.

On the other hand, the readability of façades was considered to be an important issue by some interviewees, as a means by which they can connect to a façade in a rational manner (n=4). Hence, it was declared that people need to understand what the façade is about and how it works, providing clear visual cues that help us interact with it (making clear which elements can be operated, or the location of the entrance for instance). This was also argued in one of the responses, which stressed that architecture is also a form of communication, a role that, according to the interviewee, does not relate to the abstraction that seems to be increasingly used in architectural design, which may lead to disconnected buildings and *"dead public spaces."* Another respondent stated that the need for readable façades shapes their designs through the use of regularity, *"on the edge of getting boring,"* a sentiment that may clash with other recorded preferences for originality and amazement when it comes to façade design.

The last sub-group identified within the boundaries of the study expands on this rational connection to façades, comprising aspects that reflect the intellectual process behind façade design (intellectual connection). Therefore, while this set of aspects also speaks of a connection between the façade (the object) and humans (us, the subjects experiencing it), the focus here is on the appreciation of the reasoning behind a certain façade design, rather than a clear reading of its visual elements and functions. Consequently, responses that fall into this category refer to the logic behind façades (n=8), the story that the designer tries to tell with it (n=8), and in a more general way, how all the different requirements are integrated into a successful design (n=5). These three themes were, in one way or another, regarded by almost half the interviewees (n=15) as aspects by which to judge the beauty of a façade, which shows their relevance within the sample. Nonetheless, it must be stressed that this is true for designers, which clearly makes sense from the point of view of professional curiosity, but it is not expected to be necessarily relevant for people without a background in architecture, design, or building engineering.

The responses coded by *"logic behind it,"* address beauty *"in the thinking behind,"* as declared by one interviewee. Moreover, in these cases, the way a façade looks should come from logical design decisions that could be reasonably traced back by looking at the façade and its details; simply put, it has to make sense. Similarly, mentions of façades telling the *"right story"* imply that we should recognise the idea behind a façade, and this in turn needs to be an appropriate answer to the goals it sought to achieve. The difficulty of handling multiple, distinct (and, most of the time, clashing) requirements throughout the design process was expressed by generally mentioning how all aspects are integrated in the final façade design, as a guiding aspect for its aesthetic perception. This sentiment was explicitly declared by one interviewee who declined to pinpoint specific aspects that shape his aesthetic preferences, due to the influence of all aspects on each other (*"I think I cannot really answer the question (...) because it's actually all. How everything is coming together"*).

TABLE 7 Selected quotations from the interviewees categorised under " Intellectual connection"

IDENTIFIED ASPECTS / KEYWORDS	SELECTED QUOTATIONS	POSITION (YEARS OF EXPERIENCE)
Logic; right story	"The best feeling is when aesthetics and reasons to be, are so closely linked that it's undisputedly the best answer to the question".	Founding Partner (18)
Logic	"It will only be beautiful if it's well-designed. If it does what it does, if you understand why we did it; even if you sometimes make a facade that's very special, then you should be able to see on it, or to recognize what's the idea behind a façade".	Founding Partner (42)
Logic	"That the building, thereby also the facade, shows really well the ideas you had. If it is a showcase of the ideas you had, then the building will be good and beautiful in that way. If there is a disruption between the ideas and the things, or you don't built it in a logical way, you changed your mind during the way, there are a lot of possible disruptions, then it is not a nice and aesthetic valuable building".	Founding Partner (34)
Logic; ties to architectural history	"It works for me if it's beautiful, but in such a way that I can understand; in such a way that beautiful has this aesthetic aspect to it, but also this intelligent aspect. So, if we manage to make something that from an engineer point of view, turns out to be the right answer to the most important questions; and it's also then, culturally something that is embedded in architectural history; and it is also very aesthetically pleasing, that is, I think, what it's all about".	Partner (23)
Logic	"The beauty is for me in the thinking behind. If I see something that is extremely excessive in shape and form and you know, an explosion of things, this is not beautiful for me. Beautiful is for me is if somebody really put a lot of thought in there. I mean that is probably my perception of beauty, logic. I find a lot of beauty in logic".	Associate Architect (14)
Right story	"I would say the best facade is the facade who tells the right story".	Partner (37)
Logic; right story	"If I turn the question around. What I dislike in a facade is when it looks very not-logic or when you think 'What are they doing here?', 'What is the story.' Expressive architecture is interesting if it comes with a reason or with a story".	Founding Partner (30)
Honesty	"I think a beautiful facade is somehow making sense, and it's also honest. And it utilises its materiality in a very clever way. I think that's what I mean by making sense (...) So, I think it's when something is not trying to be something it's not".	Founding Partner (14)
Right story; relation to building function	"That's because the story of the façade... the façade is trying to tell you something, and to explain you something which is happening behind the façade. If it's only just an empty façade, then it's, I think, after 5 years It's boring (...) What's really beautiful, that's coming from the inside, and you were looking to a translation of the inside".	Founding Partner (30)
Honesty; right story	"Also what I think, the honesty. So it's not only about making it beautiful; but also if it's correct, if it's fitting the program and the location, if it's an honest façade, that's also beautiful. It's not only in the bricks, but also in the story that the façade tells".	Associate Architect (17)
Honesty	"Honesty is of course, a very problematic thing in architecture (...) if you bring it up, you have to choose sides. Do you think that a building needs to be honest or not? I don't know. I'm not sure, but it's interesting to think about that, I think. And it comes up in facades all the time".	Partner (23)

Due to the nature and diversity of ways to explain aesthetic preferences, it is not possible to directly relate façade characteristics to potential preferences; the perception of the resulting façade will depend on the successful balance of various different requirements, following a narrative that shapes the building through logical design decisions. Nonetheless, when expanding on their answers, a set of interviewees did declare their preference for *"honest façades"* (n=5)—an aspect that is worth mentioning due to some conflicting views on the topic. Honesty was explicitly declared as a desired attribute for a beautiful façade by five respondents, referring to both the need for it to reflect the programme behind it, and a coherent use of the material (*"It utilises materiality in a very clever way (...) I think it's when something is not trying to be something it's not"*), seeing it as a way to strengthen the consistency between story and resolution.

On the other hand, some interviewees declared their apprehension for façades that directly reflect the indoor programme, alluding to the fact that it may decrease the flexibility of the building to cope with new functions in the future, making it less resilient. Similarly, when discussing material choices, two interviewees stated their annoyance with the whole discussion about *"the honesty of materials"* that seems to come up every now and then in the field. According to one of them, the discussion is a fake one, because *"there is no honesty in façade detailing anymore,"* considering the irruption of polymers and multi-material components, besides the aforementioned use of cladding as finishing layer. In the view of the interviewee, this argument renders the whole discussion moot, because if we were to completely follow material honesty in façades nowadays, we would greatly limit our architectural repertoire. Instead, his advice was to avoid choosing sides and embrace the artistic potential from the *"contradiction of honesty and fake building technology."*

4 DISCUSSION

Figure 7 shows a bar-graph summarising the main identified aspects and the frequency of their mentions, categorised in the themes discussed in the previous section (the graph only considers aspects with more than two mentions). As previously discussed, material expression, the quality of the detail, and proportion were the aspects most mentioned within the sample, which shows certain proclivities of the surveyed group of designers.

When comparing the results from the interviews with the existing literature, certain aspects appear in both. This is explicitly true for aspects such as proportion, material, and colour, declared in previous studies as relevant factors (Keshtkaran et al., 2017; Krier, 1988). Likewise, the mention in the literature of underlying structural orders in façades, to explain their perceived beauty (Bell, 1993; Salingaros, 1999, 2000; Smith, 2003); considers the use of a series of compositional resources, such as proportion, stratification, and rhythm, which were separately mentioned by the interviewees. In that sense, the aspects identified from the interviews tend to be more concrete when compared to the more general theoretical treaties, which does not come as a surprise given the grounded experience of the practitioners. Another mentioned aspect that echoes the literature is the expression of the character of a building, through its façade, to explain our perception of it. This view circles back to de Botton's ideas (de Botton, 2006), when declaring that architecture embodies social values, so we find appealing certain features that remind us of values we hold dear, at conscious and subconscious levels. This becomes evident in the answers that explicitly compare buildings to people, assigning them a certain presence and self-assurance. Lastly, some aspects from both primary and distinctive groups of aspects defined by Keshtkaran et al. (2017) appeared in the responses. Proportion, materials, simplicity, and the importance of being able to understand or read

façades from the former, and depth, the play of solids and voids, and a certain spontaneity related to the changing expression of the façade or its capacity to amaze the viewer, as distinctive factors for design. The categories presented by Keshtkaran et al. (2017) reflect a dichotomy between blending-in and standing-out when it comes to façade design, which was stated as a relevant practical issue in some responses. Consequently, it is not really about choosing one or the other approach, but rather about using diverse design resources from both approaches to find a balance between them, one that suits the brief and context of the building.

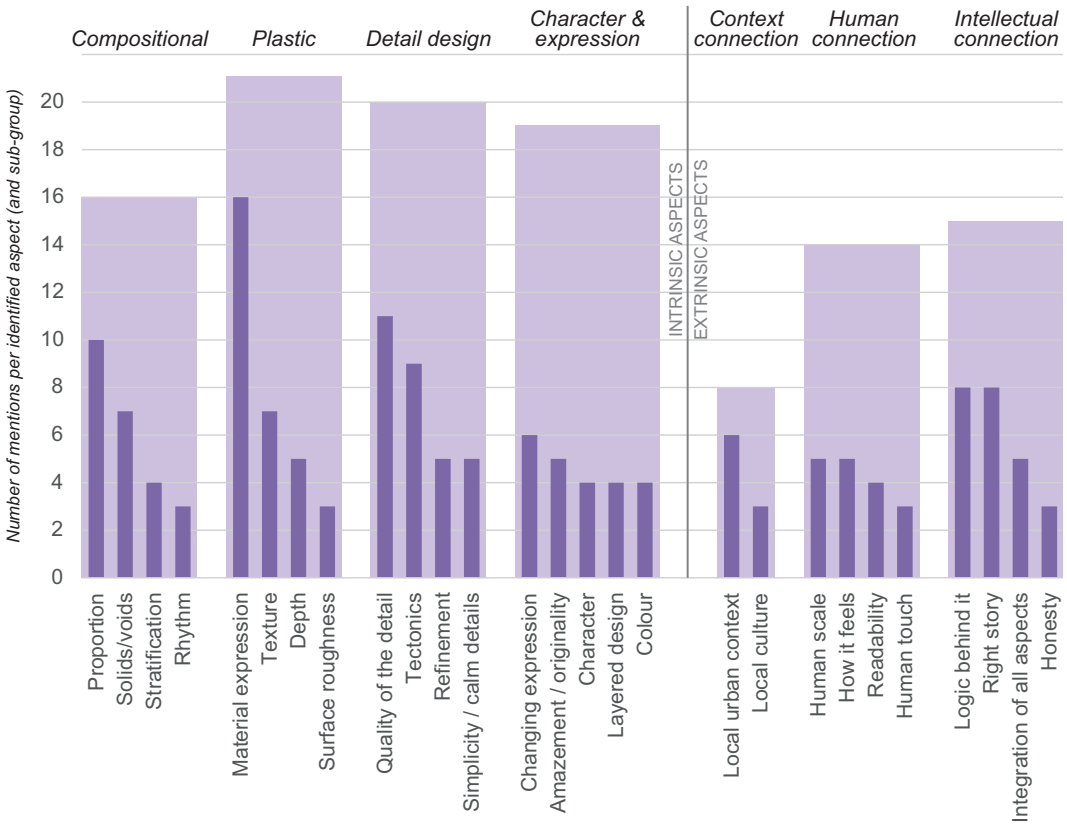


FIG. 7 Number of mentions per identified aspect (and sub-group)

Having discussed common aspects between the responses and the literature, it is also important to shed light on some of their differences. First, regarding aspects that commonly appear in the specialised literature, there was no direct mention of nature-based or organic forms and patterns as an aspect behind aesthetic preferences. Similarly, there was no mention of symmetry—a classical feature related to beauty—nor complexity, an aspect that appeared extensively in the reviewed literature (Akalin et al., 2009; Jennath & Nidhish, 2016; Keshtkaran et al., 2017; Megahed & Gabr, 2010; Nasar, 1994; Salingaros, 1999, 2000; Smith, 2003; Tinio & Leder, 2009). In this regard, it is important to reiterate the fact that the interviews helped to identify conscious preferences from the sample; this means that non-disclosed aspects previously studied by scholars may very well be highly relevant at a subconscious level, but they are not consciously perceived as such by the interviewed practitioners when asked to discuss their aesthetic preferences. Moreover, while complexity was not explicitly mentioned, simplicity on the other hand, was declared to be something to strive for when it comes to detailing.

Nevertheless, the strong sentiment expressed in favour of plasticity (texture, depth, and material expression) over flat façades, arguably speaks of a higher surface complexity. Furthermore, the appeal of façades with changing expressions, and an overall amazement or originality as conditions to find façades beautiful, also advocate for visually complex experiences as opposed to dull surfaces. In that sense, for the interviewed sample, there seems to be a conscious preference for simplicity, but a subconscious desire for complexity, mixed together to explain their aesthetic preferences. Hence, simplicity and complexity do not seem to stand in direct contradiction, but rather it appears to be a matter of how these concepts are being considered in the design, where simpler and refined details are preferred, but without compromising complex visual experiences that capture our attention, through the use of expressive materials, plasticity or a layered design, among other resources.

On the other hand, aspects identified in the responses which have not been particularly explored in the literature mostly refer to the specialised background of the sample. This clearly applies to the focus on the quality of the detail and the tectonics of the façade, which understandably sparks attraction out of professional curiosity (how did they do that?). Moreover, the same applies to the intellectual connection that experts can build with the subject of the study, which makes them appreciate a façade by understanding the logic that shaped it through the design process, or by acknowledging the appropriateness of the physical response to a set of requirements. It is confidently expected that these aspects would not be present, or at least their frequency would greatly decrease, had the questionnaire been aimed at a general audience instead.

Also, besides certain exceptions, such as the work of de Botton (2006), previous studies in the field have focused almost exclusively on the aspects dubbed as intrinsic in this study. These aspects have been easier to explore through experimental research, assessing the response of people to a set of pictures, previously categorised according to said aspects. However, the task grows in difficulty if we need to consider the context of where a particular picture was taken from, or the scale of it compared to the observer, to name a couple of other aspects that will definitely have an impact on our perception of a given façade. On-site questionnaires and/or interviews would help on this regard, for instance, while understanding the intellectual connection to façades will require an open debate on these topics alongside practitioners.

Up to this point, the assessment of the results has focused on the different identified aspects, discussing their mentions independently. However, aesthetic perception is a multi-variable phenomenon, where all the discussed aspects are present at once, having an impact on each other in an interlinked map which informs the observer's experience. This was clearly evidenced in the study by the fact that the majority of interviewees declared more than one aspect when asked to describe what makes a façade beautiful in their opinion, showing the complexity of succinctly describing their aesthetic preferences. Therefore, as a second layer in the study, the mentions were assessed considering the full responses of the interviewees, mapping what informs their aesthetic experience in terms of the relations between the aspects they declared, or in other words, which themes/sub-groups were mentioned in the responses from each interviewee. This was conducted in an effort to further understand and qualify the gathered responses, potentially leading to the identification of distinct profiles or types within the interviewed sample.

These maps are shown as Venn-diagrams in Figures 8 and 9. The former shows the relations between the mentions of intrinsic aspects, categorised in the four discussed sub-groups, while the latter does the same for the three sub-groups of extrinsic aspects. Each dot represents one interviewee, so its position shows the themes that were mentioned within her/his response. 32 interviewees mentioned aspects categorised in one of the four intrinsic sub-groups (Figure

8), while 27 declared aspects categorised as extrinsic (Figure 9), out of the total 34 interviewed designers. The relations within each set of sub-groups will be discussed separately to simplify the assessment and will then be finalised with a comprehensive view of the crossovers between them.

First, looking at the intrinsic sub-groups (Figure 8), it is possible to see that the mentions are fairly distributed, and most interviewees mentioned aspects belonging to more than one sub-group (24 out of 32). Moreover, the number of responses that mentioned aspects from two different sub-groups is quite similar for virtually all the pair combinations, ranging from 11 to 13 matches, with the sole exemption of the intersection between character & expression aspects and compositional aspects, which gathered just 7 mentions. This shows that compositional aspects were less present for the interviewees who mentioned those relating to character & expression (and vice versa), which could lead to the possible conclusion that compositional aspects have a lesser role in defining the character of buildings, as expressed by the interviewees. Nevertheless, further research on this relation would be needed in order to fully assert this as a valid statement.

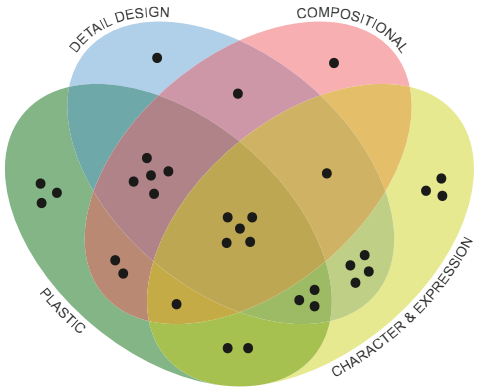


FIG. 8 Intrinsic aspects mentioned per interviewee

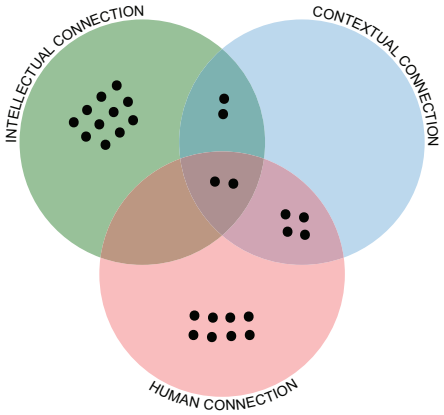


FIG. 9 Extrinsic aspects mentioned per interviewee

The wide distribution of the responses across all the intrinsic sub-groups shows how interlinked all these themes are for the interviewees, when asked to explain their aesthetic preferences in façade design. Therefore, it was not possible to relate isolated themes to their declared preferences. On the other hand, looking at the extrinsic groups, the situation drastically changes. Figure 9 shows that about a third of the sample only mentioned extrinsic aspects later categorised under *"intellectual connection"* (n=11), while the same holds true for mentions under "human connection" (n=8). No interviewees declared only aspects categorised under "contextual connections," hence, the interviewees who mentioned aspects within that group also mentioned aspects belonging to the other two. The fact that the contextual connection theme had no standalone mentions, on top of the minor number of overall mentions for that theme, seems to show that it is perceived as less relevant compared to the other themes. Nonetheless, it is the authors' opinion that the relation of the building with its context is largely perceived as a given when it comes to basic architectural design. Thus, this could explain that while it appeared within the responses, it did not do so manifestly.

The most noteworthy takeaway from assessing the mentions gathered under extrinsic themes, are the marked preferences encountered between either the *"human connection"* or *"intellectual connection"* themes. Further research will be undoubtedly needed in order to fully explore the validity of this assertion, but the separate recognition of these distinct preferences seems to point

towards two clear profiles among the sample: designers who explain their façade preferences in terms of the relations they establish with us, human observers; and others who explicitly favour façades where it is possible to understand the logic behind them. In fairness, these two groups speak of a relatable connection between object and subject, however the former focuses on the relations that we can experience directly from the façade as a physical object, while the latter seeks to establish a connection to the design process that led to that object, aiming to follow the rationale behind such an object.

The relation between intrinsic and extrinsic aspects was also explored throughout the interviewees' responses. Figure 10 depicts a Sankey-graph that shows the links between mentioned aspects belonging to either the intellectual connection or the human connection group, and mentions of other aspects by the same interviewee, which belong to any of the identified intrinsic groups. Mentions within the contextual connection theme were not depicted separately, given that those responses were already contained in one of the other extrinsic groups. At first glance, it is possible to see that not only are there several links between both columns, but these links are also fairly distributed among the intrinsic sub-groups. This means that these aspects are definitely interlinked in the interviewees' minds, but no direct correlation between specific groups is distinguished.

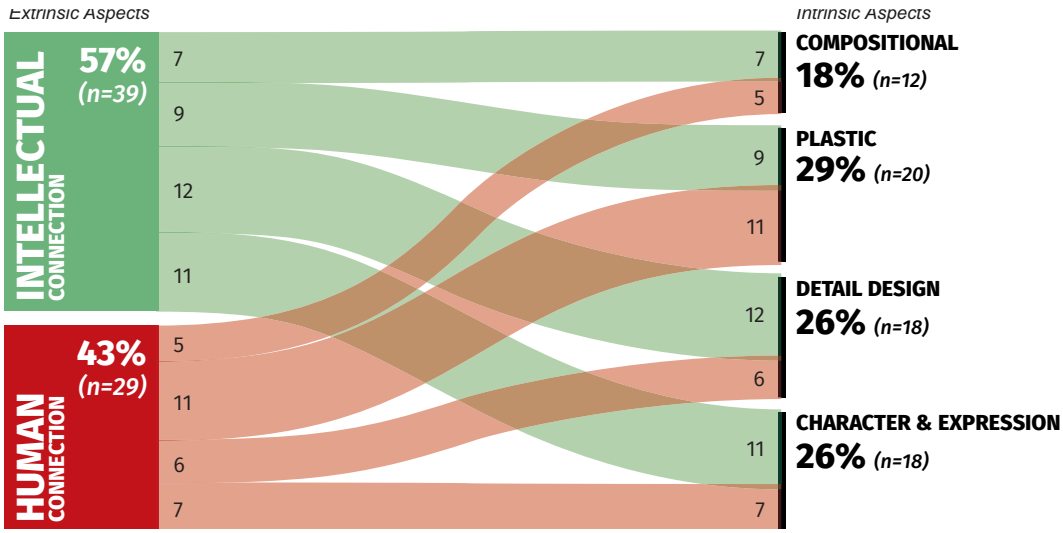


FIG. 10 Mentions of extrinsic and intrinsic aspects by the interviewees

The mention of both intrinsic and extrinsic aspects by the majority of the interviewees (25 out of 34) shows that both types of aspects are relevant to define their aesthetic preferences when it comes to façades. Moreover, just two interviewees declared only extrinsic aspects in their responses, while seven only declared aspects later categorised as intrinsic. By looking at these responses, the two who only mentioned extrinsic aspects provided a more general answer to the question, stating that a façade is beautiful when everything fits in a logical way. On the other hand, when interviewees provided a more detailed response, intrinsic aspects would appear, as a way to pinpoint specific façade design elements or resources, and thus grounding a more general design intent. In that sense, intrinsic aspects seem to have a twofold condition when it comes to the aesthetic perception of façades. These aspects could be perceived as beautiful features on themselves (a nice composition, sculptural quality, pattern, among others), or they could be used as design resources to enhance certain relations between the façade and its context, or between the façade and the observer, being

regarded as the physical expression of these underlying relations. The exploration of the relation between the design intent and the physical result, and its role in the aesthetic perception of façades, although highly interesting, escapes the scope of the present article.

5 CONCLUSIONS

This paper tackled aesthetic preferences in façade design from the point of view of designers, aiming to identify certain parameters and relevant aspects involved in the aesthetic perception of the building façade. The study was based on a series of interviews with practitioners from 34 architectural firms in The Netherlands. In this regard, the research project was devised as an exploratory study, providing insights on aesthetic preferences through the perspective of a sample of Dutch architects, so the outcomes, while valuable for the broader discussion around these aspects, do not claim to be exhaustive or universally valid.

After gathering and coding the responses from the interviews, two main groups were identified to categorise the aspects that inform the aesthetic perception of façades for the sample: intrinsic and extrinsic; the former dealt with characteristics of the façade as an object, and the latter focused on the relational features between façades and an outside agent. Moreover, sub-groups were identified in an effort to further explain the differences and similarities between the mentioned aspects. Both intrinsic and extrinsic aspects were mentioned in the responses from the majority of the interviewees, which shows that both types of aspects play a role in defining their aesthetic preferences when it comes to façades, considering potential relations between them to nurture their aesthetic experience. Nonetheless, while these mentions were fairly distributed among the different sub-groups in the case of intrinsic aspects, it was possible to see a clear distinction within the sample between extrinsic aspects, where some interviewees declared aspects that refer to a human connection (human scale, human touch) while others clearly mentioned aspects that refer to an intellectual connection to the façade design process (logic behind it, story) to explain what aspects inform their aesthetic preferences.

When compared to the existing literature on the topic, the results showed both similarities and divergences. On the one hand, mentions of proportion, material, and colour have been largely documented in the literature, along with the notion of structural orders in façades, and the expression of the character of a building through its façade, to explain our attraction or preference towards it. On the other hand, regarding aspects commonly discussed in the literature, there was no direct mention in the responses of nature-based or organic forms, as an influence on aesthetic preferences. Similarly, there was no mention of symmetry, a classical feature related to beauty, nor complexity, an aspect that appeared extensively in the reviewed literature. Simplicity, in contrast, was declared to be something to strive for when it comes to detailing. Nonetheless, in this regard, the authors speculate that the strong sentiment expressed in favour of plasticity over flat façades, or the pursue of changing building expressions throughout the day, arguably speak of a desire for visually complex experiences in opposition to dull surfaces. Thus, the responses from the sample may be exhibiting a conscious preference for simplicity and refinement when it comes to the design of details, but a subconscious desire for complexity in the overall character of the façade, through the use of expressive materials, plasticity, or a layered design, among other resources.

Finally, it feels important to reiterate the specialised profile of the interviewed sample, composed of architectural design practitioners, which explains the focus on the quality of the detail and the tectonics of the façade, or the intellectual connection that architects can establish with the thinking behind a façade, and not just the building as an object. This undoubtedly shaped the outcomes discussed in the paper, following the initial goals of the study; however, as next steps, it will be interesting to compare and test these findings with a larger sample, and against the aesthetic preferences of the general public, to include societal perspectives into an open discussion striving for the design of beautiful façades, buildings, and cities.

Acknowledgements

This paper is part of the project PrettyFace – Exploration of aesthetics in façade design, funded by The Dutch Research Council (NWO) through their programme Creative Industry - Knowledge Innovation Mapping (KIEM), under the dossier number KI.18.037. The consortium behind the project comprises Delft University of Technology, KAAN Architecten, BARCODE Architects, Thijs Asselbergs architectuurcentrale and ArchDaily.

The authors wish to acknowledge the architectural firms that took part in the study (in alphabetical order): Architecten van Mourik, Arconiko, Thijs Asselbergs architectuurcentrale, Atelier Kempe Thill, BARCODE Architects, Benthem Crouwel Architects, Braaksma & Roos Architecten, Cepezed architectenbureau, De Nijl Architecten, Dok Architecten, DUS Architects, Ector Hoogstad Architecten, Gaaga, Gortemaker Algra Feenstra, Heren5 Architects, Hulshof Architects, KAAN Architecten, KCAP Architects&Planners, Kraaijvanger Architects, MECANOO, mei architects and planners, Moederscheim Moonen Architects, Mollink Soeters PPHP, MVRDV, MVSA Architects, NEXT Architects, ORANGE Architects, OZ Architects, Paul de Ruiter Architects, Team V Architectuur, UN Studio, V8 Architects, VanSchagen Architecten, and WDJ Architecten.

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