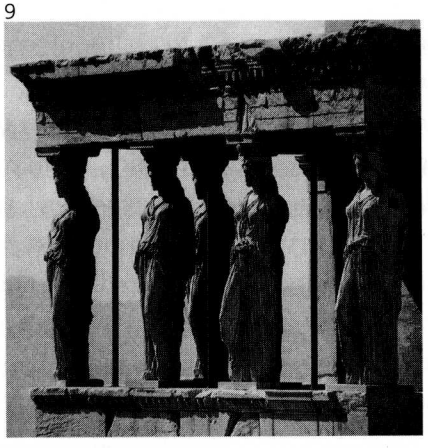
Juhani Pallasmaa

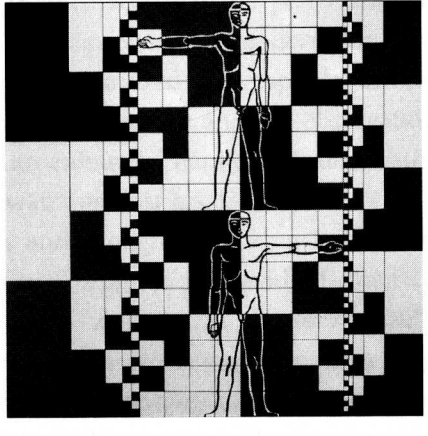
THE EYES OF THE SKIN

Architecture and the Senses

9



10



ARCHITECTURE AND THE HUMAN FIGURE

9
We tend to interpret a building as an analogue to our body, and vice versa.

Caryatids of the Erechtheum on the Acropolis (421– 405 BC).

10
Since the dynasties of ancient Egypt, measures of the human body were used in architecture. The anthropocentric tradition has been almost entirely forgotten in modern times.

Aulis Blomstedt's study of a proportional system for architecture based on the Pythagorean subdivision of a basic 180 cm measure (presumably from the early 1960s). The Aulis Blomstedt Estate/S.Blomstedt.

PART 2

As the preceding brief survey suggests, the privileging of the sense of sight over the other senses is an inarguable theme in Western thought, and it is also an evident bias in the architecture of our century. The negative development in architecture is, of course, forcefully supported by forces and patterns of management, organisation and production as well as by the abstracting and universalising impact of technological rationality itself. The negative developments in the realm of the senses cannot, either, be directly attributed to the historical privileging of the sense of vision itself. The perception of sight as our most important sense is well grounded in physiological, perceptual and psychological facts.[74] The problems arise from the isolation of the eye outside its natural interaction with other sense modalities, and from the elimination and suppression of other senses, which increasingly reduce and restrict the experience of the world into the sphere of vision. This separation and reduction fragments the innate complexity, comprehensiveness and plasticity of the perceptual system, reinforcing a sense of detachment and alienation.

In this second part, I will survey the interactions of the senses and give some personal impressions of the realms of the senses in the expression and experience of architecture. In this essay I proclaim a sensory architecture in opposition to the prevailing visual understanding of the art of building.

The Body in the Centre

I confront the city with my body; my legs measure the length of the arcade and the width of the square; my gaze unconsciously projects my body onto the facade of the cathedral, where it roams over the mouldings and contours, sensing the size of recesses and projections; my body weight meets the mass of the cathedral door, and my hand grasps the door pull as I enter the dark void behind. I experience myself in the city, and the city exists through my embodied experience. The city and my body supplement and define each other. I dwell in the city and the city dwells in me.

Merleau-Ponty's philosophy makes the human body the centre of the experiential world. He consistently argued, as Richard Kearney summarises, that '[i]t is through our bodies as living centres of intentionality … that we choose our world and that our world chooses us'.[75] In Merleau-Ponty's own words, 'Our own body is in the world as the heart is in the organism: it keeps the visible spectacle constantly alive, it breathes life into it and sustains it inwardly, and with it forms a system';[76] and '[s]ensory experience is unstable and alien to natural perception, which we achieve with our whole body all at once, and which opens on a world of interacting senses'.[77]

Sensory experiences become integrated through the body, or rather, in the very constitution of the body and the human mode of being. Psychoanalytic theory has introduced the notion of body image or body schema as the centre of integration. Our bodies and movements are in constant interaction with the environment; the world and the self inform and redefine each other constantly. The percept of the body and the image of the world turn into one single continuous existential experience; there is no body separate from its domicile in space, and there is no space unrelated to the unconscious image of the perceiving self.

'The body image … is informed fundamentally from haptic and orienting experiences early in life. Our visual images are developed later on, and depend for their meaning on primal experiences that were acquired haptically,' Kent C Bloomer and Charles W Moore argue in their book

Body, Memory, and Architecture, one of the first studies to survey the role of the body and of the senses in architectural experience.[78] They go on to explain: 'What is missing from our dwellings today are the potential transactions between body, imagination, and environment';[79] … 'To at least some extent every place can be remembered, partly because it is unique, but partly because it has affected our bodies and generated enough associations to hold it in our personal worlds.'[80]

Multi-Sensory Experience

A walk through a forest is invigorating and healing due to the constant interaction of all sense modalities; Bachelard speaks of 'the polyphony of the senses'.[81] The eye collaborates with the body and the other senses. One's sense of reality is strengthened and articulated by this constant interaction. Architecture is essentially an extension of nature into the man-made realm, providing the ground for perception and the horizon of experiencing and understanding the world. It is not an isolated and self-sufficient artifact; it directs our attention and existential experience to wider horizons. Architecture also gives a conceptual and material structure to societal institutions, as well as to the conditions of daily life. It concretises the cycle of the year, the course of the sun and the passing of the hours of the day.

Every touching experience of architecture is multi-sensory; qualities of space, matter and scale are measured equally by the eye, ear, nose, skin, tongue, skeleton and muscle. Architecture strengthens the existential experience, one's sense of being in the world, and this is essentially a strengthened experience of self. Instead of mere vision, or the five classical senses, architecture involves several realms of sensory experience which interact and fuse into each other.[82]

The psychologist James J Gibson regards the senses as aggressively seeking mechanisms rather than mere passive receivers. Instead of the five detached senses, Gibson categorises the senses in five sensory systems: visual system, auditory system, the taste–smell system, the basic-orienting

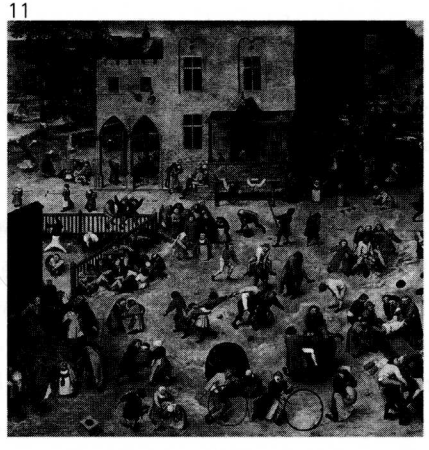
system and the haptic system.[83] Steinerian philosophy assumes that we actually utilise no less than 12 senses.[84]

The eyes want to collaborate with the other senses. All the senses, including vision, can be regarded as extensions of the sense of touch – as specialisations of the skin. They define the interface between the skin and the environment – between the opaque interiority of the body and the exteriority of the world. In the view of René Spitz, 'all perception begins in the oral cavity, which serves as the primeval bridge from inner reception to external perception'.[85] Even the eye touches; the gaze implies an unconscious touch, bodily mimesis and identification. As Martin Jay remarks when describing Merleau-Ponty's philosophy of the senses, 'through vision we touch the sun and the stars'.[86] Preceding Merleau-Ponty, the 18th-century Irish philosopher and clergyman George Berkeley related touch with vision and assumed that visual apprehension of materiality, distance and spatial depth would not be possible at all without the cooperation of the haptic memory. In Berkeley's view, vision needs the help of touch, which provides sensations of 'solidity, resistance, and protrusion';[87] sight detached from touch could not 'have any idea of distance, outness, or profundity, nor consequently of space or body'.[88] In accord with Berkeley, Hegel claimed that the only sense which can give a sensation of spatial depth is touch, because touch 'senses the weight, resistance, and three-dimensional shape (gestalt) of material bodies, and thus makes us aware that things extend away from us in all directions'.[89]

Vision reveals what the touch already knows. We could think of the sense of touch as the unconscious of vision. Our eyes stroke distant surfaces, contours and edges, and the unconscious tactile sensation determines the agreeableness or unpleasantness of the experience. The distant and the near are experienced with the same intensity, and they merge into one coherent experience. In the words of Merleau-Ponty:

> We see the depth, the smoothness, the softness, the hardness of objects; Cézanne even claimed that we see their odour. If the painter is to express

11



12

THE CITY OF PARTICIPATION – THE CITY OF ALIENATION

11
The city of sensory engagement.

Peter Bruegel the Elder, *Children's Games*, 1560. Detail.

Kunsthistorisches Museum mit MVK und ÖTM, Vienna.

12
The modern city of sensory deprivation.

The commercial section of Brasilia, Brasil, 1968.

Photo Juhani Pallasmaa.

the world, the arrangement of his colours must carry with it this indivisible whole, or else his picture will only hint at things and will not give them in the imperious unity, the presence, the insurpassable plenitude which is for us the definition of the real.[90]

In developing further Goethe's idea that a work of art must be 'life-enhancing',[91] Bernard Berenson suggested that when experiencing an artistic work, we imagine a genuine physical encounter through 'ideated sensations'. The most important of these he called 'tactile values'.[92] In his view, the work of authentic art stimulates our ideated sensations of touch, and this stimulation is life-enhancing. Indeed, we do feel the warmth of the water in the bathtub in Pierre Bonnard's paintings of bathing nudes and the moist air of Turner's landscapes, and we can sense the heat of the sun and the cool breeze in Matisse's paintings of windows open to a view of the sea.

In the same way, an architectural work generates an indivisible complex of impressions. The live encounter with Frank Lloyd Wright's Fallingwater weaves the surrounding forest, the volumes, surfaces, textures and colours of the house, and even the smells of the forest and the sounds of the river, into a uniquely full experience. An architectural work is not experienced as a collection of isolated visual pictures, but in its fully embodied material and spiritual presence. A work of architecture incorporates and infuses both physical and mental structures. The visual frontality of the architectural drawing is lost in the real experience of architecture. Good architecture offers shapes and surfaces moulded for the pleasurable touch of the eye. 'Contour and profile (modénature) are the touchstone of the architect,' as Le Corbusier put it, revealing a tactile ingredient in his otherwise ocular understanding of architecture.[93]

Images of one sensory realm feed further imagery in another modality. Images of presence give rise to images of memory, imagination and dream. '[T]he chief benefit of the house [is that] the house shelters daydreaming, the house protects the dreamer, the house allows one to dream in peace,' writes Bachelard.[94] But even more, an architectural space

frames, halts, strengthens and focuses our thoughts, and prevents them from getting lost. We can dream and sense our being outdoors, but we need the architectural geometry of a room to think clearly. The geometry of thought echoes the geometry of the room.

In *The Book of Tea*, Kakuzo Okakura gives a subtle description of the multi-sensory imagery evoked by the simple situation of the tea ceremony: 'Quiet reigns with nothing to break the silence save the note of the boiling water in the iron kettle. The kettle sings well, for pieces of iron are so arranged in the bottom as to produce a peculiar melody in which one may hear the echoes of a cataract muffled by clouds, of a distant sea breaking among the rocks, a rainstorm sweeping through a bamboo forest, or of the soughing of pines on some faraway hill.'[95] In Okakura's description the present and the absent, the near and the distant, the sensed and the imagined fuse together. The body is not a mere physical entity; it is enriched by both memory and dream, past and future. Edward S Casey even argues that our capacity of memory would be impossible without a body memory.[96] The world is reflected in the body, and the body is projected onto the world. We remember through our bodies as much as through our nervous system and brain.

The senses not only mediate information for the judgement of the intellect; they are also a means of igniting the imagination and of articulating sensory thought. Each form of art elaborates metaphysical and existential thought through its characteristic medium and sensory engagement. 'Any theory of painting is a metaphysics,' in Merleau-Ponty's view,[97] but this statement might also be extended to the actual making of art, for every painting is itself based on implicit assumptions about the essence of the world. 'The painter "takes his body with him", says [Paul] Valéry. Indeed we cannot imagine how a mind could paint,' Merleau-Ponty argues.[98]

It is similarly inconceivable that we could think of purely cerebral architecture that would not be a projection of the human body and its movement through space. The art of architecture is also engaged with

metaphysical and existential questions concerning man's being in the world. The making of architecture calls for clear thinking, but this is a specific embodied mode of thought that takes place through the senses and the body, and through the specific medium of architecture. Architecture elaborates and communicates thoughts of man's incarnate confrontation with the world through 'plastic emotions'.[99] In my view, the task of architecture is 'to make visible how the world touches us', as Merleau-Ponty said of the paintings of Cézanne.[100]

The Significance of the Shadow

The eye is the organ of distance and separation, whereas touch is the sense of nearness, intimacy and affection. The eye surveys, controls and investigates, whereas touch approaches and caresses. During overpowering emotional experiences, we tend to close off the distancing sense of vision; we close the eyes when dreaming, listening to music, or caressing our beloved ones. Deep shadows and darkness are essential, because they dim the sharpness of vision, make depth and distance ambiguous, and invite unconscious peripheral vision and tactile fantasy.

How much more mysterious and inviting is the street of an old town with its alternating realms of darkness and light than are the brightly and evenly lit streets of today! The imagination and daydreaming are stimulated by dim light and shadow. In order to think clearly, the sharpness of vision has to be suppressed, for thoughts travel with an absent-minded and unfocused gaze. Homogenous bright light paralyses the imagination in the same way that homogenisation of space weakens the experience of being, and wipes away the sense of place. The human eye is most perfectly tuned for twilight rather than bright daylight.

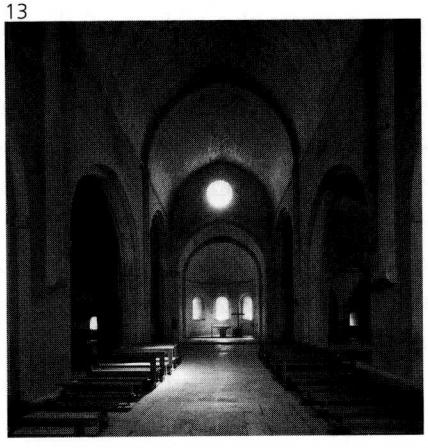
Mist and twilight awaken the imagination by making visual images unclear and ambiguous; a Chinese painting of a foggy mountain landscape, or the raked sand garden of Ryoan-ji Zen Garden give rise to an unfocused way of looking, evoking a trance-like, meditative state. The absent-minded gaze penetrates the surface of the physical image and focuses in infinity.

In his book *In Praise of Shadows*, Junichiro Tanizaki points out that even Japanese cooking depends upon shadows, and that it is inseparable from darkness: 'And when *Yokan* is served in a lacquer dish, it is as if the darkness of the room were melting on your tongue.'[101] The writer reminds us that, in olden times, the blackened teeth of the geisha and her green-black lips as well as her white painted face were all intended to emphasise the darkness and shadows of the room.

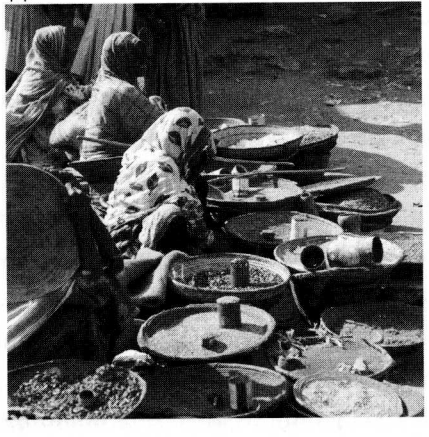
Likewise, the extraordinarily powerful sense of focus and presence in the paintings of Caravaggio and Rembrandt arises from the depth of shadow in which the protagonist is embedded like a precious object on a dark velvet background that absorbs all light. The shadow gives shape and life to the object in light. It also provides the realm from which fantasies and dreams arise. The art of chiaroscuro is a skill of the master architect too. In great architectural spaces, there is a constant, deep breathing of shadow and light; shadow inhales and illumination exhales light.

In our time, light has turned into a mere quantitative matter and the window has lost its significance as a mediator between two worlds, between enclosed and open, interiority and exteriority, private and public, shadow and light. Having lost its ontological meaning, the window has turned into a mere absence of the wall. 'Take [...] the use of enormous plate windows [...] they deprive our buildings of intimacy, the effect of shadow and atmosphere. Architects all over the world have been mistaken in the proportions which they have assigned to large plate windows or spaces opening to the outside [...] We have lost our sense of intimate life, and have become forced to live public lives, essentially away from home,' writes Luis Barragan, the true magician of intimate secrecy, mystery and shadow in contemporary architecture.[102] Likewise, most contemporary public spaces would become more enjoyable through a lower light intensity and its uneven distribution. The dark womb of the council chamber of Alvar Aalto's Säynätsalo Town Hall

13



14



ARCHITECTURES OF HEARING AND SMELL

13
In historical towns and spaces, acoustic experiences reinforce and enrich visual experiences.

The early Cistercian Abbey of Le Thoronet, first established at Florielle in 1136, transferred to its present site in 1176.

Photo David Heald.

14
In rich and invigorating experiences of places, all sensory realms interact and fuse into the memorable image of the place.

A space of smell: the spice market in Harrar, Ethiopia.

Photo Juhani Pallasmaa.

recreates a mystical and mythological sense of community; darkness creates a sense of solidarity and strengthens the power of the spoken word.

In emotional states, sense stimuli seem to shift from the more refined senses towards the more archaic, from vision down to hearing, touch and smell, and from light to shadow. A culture that seeks to control its citizens is likely to promote the opposite direction of interaction, away from intimate individuality and identification towards a public and distant detachment. A society of surveillance is necessarily a society of the voyeuristic and sadistic eye. An efficient method of mental torture is the use of a constantly high level of illumination that leaves no space for mental withdrawal or privacy; even the dark interiority of self is exposed and violated.

Acoustic Intimacy

Sight isolates, whereas sound incorporates; vision is directional, whereas sound is omni-directional. The sense of sight implies exteriority, but sound creates an experience of interiority. I regard an object, but sound approaches me; the eye reaches, but the ear receives. Buildings do not react to our gaze, but they do return our sounds back to our ears. 'The centring action of sound affects man's sense of cosmos,' writes Walter Ong. 'For oral cultures, the cosmos is an ongoing event with man at its centre. Man is the *umbilicus mundi*, the navel of the world.'[103] It is thought-provoking that the mental loss of the sense of centre in the contemporary world could be attributed, at least in part, to the disappearance of the integrity of the audible world.

Hearing structures and articulates the experience and understanding of space. We are not normally aware of the significance of hearing in spatial experience, although sound often provides the temporal continuum in which visual impressions are embedded. When the soundtrack is removed from a film, for instance, the scene loses its plasticity and sense of continuity and life. Silent film, indeed, had to compensate for the lack of sound by a demonstrative manner of overacting.

Adrian Stokes, the English painter and essayist, makes perceptive observations about the interaction of space and sound, sound and stone. 'Like mothers of men, the buildings are good listeners. Long sounds, distinct or seemingly in bundles, appease the orifices of palaces that lean back gradually from canal or pavement. A long sound with its echo brings consummation to the stone,' he writes.[104]

Anyone who has half-woken up to the sound of a train or an ambulance in a nocturnal city, and through his/her sleep experienced the space of the city with its countless inhabitants scattered within its structures, knows the power of sound over the imagination; the nocturnal sound is a reminder of human solitude and mortality, and it makes one conscious of the entire slumbering city. Anyone who has become entranced by the sound of dripping water in the darkness of a ruin can attest to the extraordinary capacity of the ear to carve a volume into the void of darkness. The space traced by the ear in the darkness becomes a cavity sculpted directly in the interior of the mind.

The last chapter of Steen Eiler Rasmussen's seminal book *Experiencing Architecture* is significantly entitled 'Hearing Architecture'.[105] The writer describes various dimensions of acoustical qualities, and recalls the acoustic percept of the underground tunnels in Vienna in Orson Welles' film *The Third Man*: 'Your ear receives the impact of both the length and the cylindrical form of the tunnel.'[106]

One can also recall the acoustic harshness of an uninhabited and unfurnished house as compared to the affability of a lived home, in which sound is refracted and softened by the numerous surfaces of objects of personal life. Every building or space has its characteristic sound of intimacy or monumentality, invitation or rejection, hospitality or hostility. A space is understood and appreciated through its echo as much as through its visual shape, but the acoustic percept usually remains as an unconscious background experience.

Sight is the sense of the solitary observer, whereas hearing creates a sense of connection and solidarity; our look wanders lonesomely in the dark depths of a cathedral, but the sound of the organ makes us immediately experience our affinity with the space. We stare alone at the suspense of a circus, but the burst of applause after the relaxation of suspense unites us with the crowd. The sound of church bells echoing through the streets of a town makes us aware of our citizenship. The echo of steps on a paved street has an emotional charge because the sound reverberating from surrounding walls puts us in direct interaction with space; the sound measures space and makes its scale comprehensible. We stroke the boundaries of the space with our ears. The cries of seagulls in the harbour awaken an awareness of the vastness of the ocean and the infiniteness of the horizon.

Every city has its echo which depends on the pattern and scale of its streets and the prevailing architectural styles and materials. The echo of a Renaissance city differs from that of a Baroque city. But our cities have lost their echo altogether. The wide, open spaces of contemporary streets do not return sound, and in the interiors of today's buildings echoes are absorbed and censored. The programmed recorded music of shopping malls and public spaces eliminates the possibility of grasping the acoustic volume of space. Our ears have been blinded.

Silence, Time and Solitude

The most essential auditory experience created by architecture is tranquillity. Architecture presents the drama of construction silenced into matter, space and light. Ultimately, architecture is the art of petrified silence. When the clutter of construction work ceases, and the shouting of workers dies away, a building becomes a museum of a waiting, patient silence. In Egyptian temples we encounter the silence that surrounded the pharaohs, in the silence of the Gothic cathedral we are reminded of the last dying note of a Gregorian chant, and the echo of Roman footsteps has just faded away from the walls of the Pantheon. Old houses take us back to the slow time and silence of the past. The silence of architec-

ture is a responsive, remembering silence. A powerful architectural experience silences all external noise; it focuses our attention on our very existence, and as with all art, it makes us aware of our fundamental solitude.

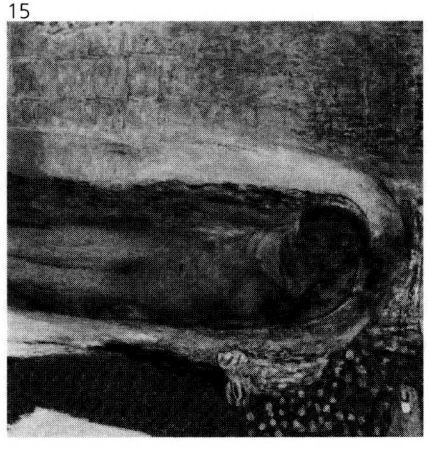
The incredible acceleration of speed during the last century has collapsed time into the flat screen of the present, upon which the simultaneity of the world is projected. As time loses its duration, and its echo in the primordial past, man loses his sense of self as a historical being, and is threatened by the 'terror of time'.[107] Architecture emancipates us from the embrace of the present and allows us to experience the slow, healing flow of time. Buildings and cities are instruments and museums of time. They enable us to see and understand the passing of history, and to participate in time cycles that surpass individual life.

Architecture connects us with the dead; through buildings we are able to imagine the bustle of the medieval street, and picture a solemn procession approaching the cathedral. The time of architecture is a detained time; in the greatest of buildings time stands firmly still. In the Great Peristyle at Karnak time has petrified into an immobile and timeless present. Time and space are eternally locked into each other in the silent spaces between these immense columns; matter, space and time fuse into one singular elemental experience, the sense of being.

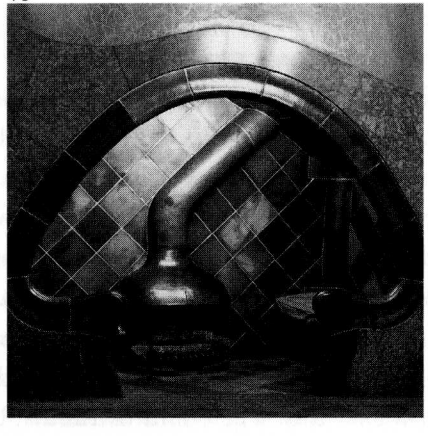
The great works of modernity have forever halted the utopian time of optimism and hope; even after decades of trying fate they radiate an air of spring and promise. Alvar Aalto's Paimio Sanatorium is heartbreaking in its radiant belief in a humane future and the success of the societal mission of architecture. Le Corbusier's Villa Savoye makes us believe in the union of reason and beauty, ethics and aesthetics. Through periods of dramatic and tragic social and cultural change, Konstantin Melnikov's Melnikov House in Moscow has stood as a silent witness of the will and utopian spirit that once created it.

Experiencing a work of art is a private dialogue between the work and the viewer, one that excludes other interactions. 'Art is memory's *mise-en-scène*', and 'Art is made by the alone for the alone', as Cyril Connolly

15



16



SPACES OF INTIMATE WARMTH

15
Heightened experiences of intimacy, home and protection are sensations of the naked skin.

Pierre Bonnard, *The Nude in the Bath*, 1937. Detail. Musée du Petit-Palais, Paris.

16
The fireplace as an intimate and personal space of warmth.

Antonio Gaudí, Casa Batlló, Barcelona, 1904–06.

writes in *The Unquiet Grave*. Significantly, these are sentences underlined by Luis Barragan in his copy of this book of poetry.[108] A sense of melancholy lies beneath all moving experiences of art; this is the sorrow of beauty's immaterial temporality. Art projects an unattainable ideal, the ideal of beauty that momentarily touches the eternal.

Spaces of Scent

We need only eight molecules of substance to trigger an impulse of smell in a nerve ending, and we can detect more than 10,000 different odours. The most persistent memory of any space is often its smell. I cannot remember the appearance of the door to my grandfather's farmhouse in my early childhood, but I do remember the resistance of its weight and the patina of its wood surface scarred by decades of use, and I recall especially vividly the scent of home that hit my face as an invisible wall behind the door. Every dwelling has its individual smell of home.

A particular smell makes us unknowingly re-enter a space completely forgotten by the retinal memory; the nostrils awaken a forgotten image, and we are enticed to enter a vivid daydream. The nose makes the eyes remember. 'Memory and imagination remain associated,' as Bachelard writes; 'I alone in my memories of another century, can open the deep cupboard that still retains for me alone that unique odour, the odour of raisins, drying on a wicker tray. The odour of raisins! It is an odour that is beyond description, one that it takes a lot of imagination to smell.'[109]

What a delight to move from one realm of odour to the next, through the narrow streets of an old town! The scent sphere of a candy store makes one think of the innocence and curiosity of childhood; the dense smell of a shoemaker's workshop makes one imagine horses, saddles, and harness straps and the excitement of riding; the fragrance of a bread shop projects images of health, sustenance and physical strength, whereas the perfume of a pastry shop makes one think of bourgeois felicity. Fishing towns are especially memorable because of the fusion of the smells of the sea and of the land; the powerful smell of seaweed makes one sense the depth and weight of the sea, and it turns any prosaic harbour town into the image of the lost Atlantis.

A special joy of travel is to acquaint oneself with the geography and microcosm of smells and tastes. Every city has its spectrum of tastes and odours. Sales counters on the streets are appetising exhibitions of smells: creatures of the ocean that smell of seaweed, vegetables carrying the odour of fertile earth, and fruits that exude the sweet fragrance of sun and moist summer air. The menus displayed outside restaurants make us fantasise the complete course of a dinner; letters read by the eyes turn into oral sensations.

Why do abandoned houses always have the same hollow smell: is it because the particular smell is stimulated by emptiness observed by the eye? Helen Keller was able to recognise 'an old-fashioned country house because it has several levels of odours, left by a succession of families, of plants, of perfumes and draperies'.[110]

In *The Notebooks of Malte Laurids Brigge*, Rainer Maria Rilke gives a dramatic description of images of past life in an already demolished house, conveyed by traces imprinted on the wall of its neighbouring house:

> There stood the middays and the sicknesses and the exhaled breath and the smoke of years, and the sweat that breaks out under armpits and makes clothes heavy, and the stale breath of mouths, and the fusel odour of sweltering feet. There stood the tang of urine and the burn of soot and the grey reek of potatoes, and the heavy, smooth stench of ageing grease. The sweet, lingering smell of neglected infants was there, and the fearsmell of children who go to school, and the sultriness out of the beds of nubile youths.[111]

The retinal images of contemporary architecture certainly appear sterile and lifeless when compared with the emotional and associative power of the poet's olfactory imagery. The poet releases the scent and taste concealed in words. Through his words a great writer is capable of constructing an entire city with all the colours of life. But significant works

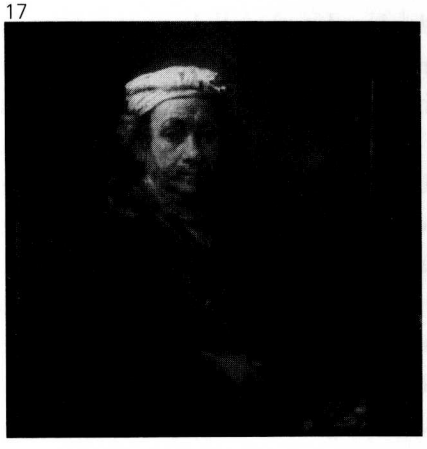
of architecture also project full images of life. In fact, a great architect releases images of ideal life concealed in spaces and shapes. Le Corbusier's sketch of the suspended garden for a block of flats, with the wife beating a rug on the upper balcony, and the husband hitting a boxing bag below, as well as the fish and the electric fan on the kitchen table of the Villa Stein-de Monzie, are examples of a rare sense of life in modern images of architecture. Photographs of the Melnikov House, on the other hand, reveal a dramatic distance between the metaphysical geometry of the iconic house, and the traditionally prosaic realities of life.

The Shape of Touch

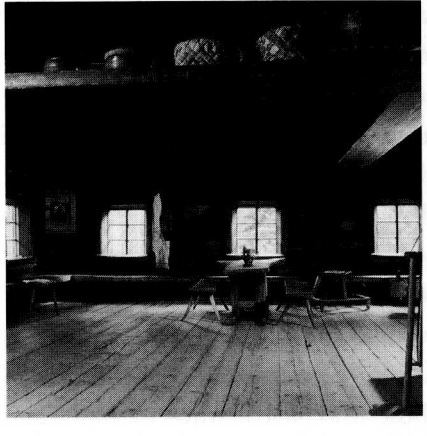
'[H]ands are a complicated organism, a delta in which life from the most distant sources flows together surging into the great current of action. Hands have histories; they even have their own culture and their own particular beauty. We grant them the right to have their own development, their own wishes, feelings, moods and occupations,' writes Rainer Maria Rilke in his essay on Auguste Rodin.[112] The hands are the sculptor's eyes; but they are also organs for thought, as Heidegger suggests: '[the] hand's essence can never be determined, or explained, by its being an organ which can grasp [...] Every motion of the hand in every one of its works carries itself through the element of thinking, every bearing of the hand bears itself in that element [...].'[113]

The skin reads the texture, weight, density and temperature of matter. The surface of an old object, polished to perfection by the tool of the craftsman and the assiduous hands of its users, seduces the stroking of the hand. It is pleasurable to press a door handle shining from the thousands of hands that have entered the door before us; the clean shimmer of ageless wear has turned into an image of welcome and hospitality. The door handle is the handshake of the building. The tactile sense connects us with time and tradition: through impressions of touch we shake the hands of countless generations. A pebble polished by waves

17



18



THE SIGNIFICANCE OF SHADOW AND DARKNESS

17
The face is embedded in darkness as a precious object on a dark surface of velvet.

Rembrandt, *Self-Portrait*, 1660. Detail.

Musée du Louvre, Paris.

18
The darkness and shadows of the Finnish peasant's house create a sense of intimacy and silence; light turns into a precious gift.

The Pertinotsa House from the late 19th century in the Seurasaari Outdoor Museum, Helsinki.

Museum of Finnish Architecture/Photo István Rácz

is pleasurable to the hand, not only because of its soothing shape, but because it expresses the slow process of its formation; a perfect pebble on the palm materialises duration, it is time turned into shape.

When entering the magnificent outdoor space of Louis Kahn's Salk Institute in La Jolla, California, I felt an irresistible temptation to walk directly to the concrete wall and touch the velvety smoothness and temperature of its skin. Our skin traces temperature spaces with unerring precision; the cool and invigorating shadow under a tree, or the caressing sphere of warmth in a spot of sun, turn into experiences of space and place. In my childhood images of the Finnish countryside, I can vividly recall walls against the angle of the sun, walls which multiplied the heat of radiation and melted the snow, allowing the first smell of pregnant soil to announce the approach of summer. These early pockets of spring were identified by the skin and the nose as much as by the eye.

Gravity is measured by the bottom of the foot; we trace the density and texture of the ground through our soles. Standing barefoot on a smooth glacial rock by the sea at sunset, and sensing the warmth of the sun-heated stone through one's soles, is an extraordinarily healing experience, making one part of the eternal cycle of nature. One senses the slow breathing of the earth.

'In our houses we have nooks and corners in which we like to curl up comfortably. To curl up belongs to the phenomenology of the verb to inhabit, and only those who have learned to do so can inhabit with intensity,' writes Bachelard.[114] 'And always, in our daydreams, the house is a large cradle,' he continues.[115]

There is a strong identity between naked skin and the sensation of home. The experience of home is essentially an experience of intimate warmth. The space of warmth around a fireplace is the space of ultimate intimacy and comfort. Marcel Proust gives a poetic description of such a fireside space, as sensed by the skin: 'It is like an immaterial alcove, a warm cave carved into the room itself, a zone of hot weather with floating boundaries.'[116] A sense of homecoming has never been

stronger for me than when seeing a light in the window of my childhood house in a snow-covered landscape at dusk, the memory of the warm interior gently warming my frozen limbs. Home and the pleasure of the skin turn into a singular sensation.

The Taste of Stone

In his writings, Adrian Stokes was particularly sensitive to the realms of tactile and oral sensations: 'In employing smooth and rough as generic terms of architectural dichotomy I am better able to preserve both the oral and the tactile notions that underlie the visual. There is a hunger of the eyes, and doubtless there has been some permeation of the visual sense, as of touch, by the once all-embracing oral impulse.'[117] Stokes writes also about the 'oral invitation of Veronese marble',[118] and he quotes a letter of John Ruskin: 'I should like to eat up this Verona touch by touch.'[119]

There is a subtle transference between tactile and taste experiences. Vision becomes transferred to taste as well; certain colours and delicate details evoke oral sensations. A delicately coloured polished stone surface is subliminally sensed by the tongue. Our sensory experience of the world originates in the interior sensation of the mouth, and the world tends to return to its oral origins. The most archaic origin of architectural space is in the cavity of the mouth.

Many years ago when visiting the DL James Residence in Carmel, California, designed by Charles and Henry Greene, I felt compelled to kneel and touch the delicately shining white marble threshold of the front door with my tongue. The sensuous materials and skilfully crafted details of Carlo Scarpa's architecture as well as the sensuous colours of Luis Barragan's houses frequently evoke oral experiences. Deliciously coloured surfaces of *stucco lustro*, a highly polished colour or wood surfaces also present themselves to the appreciation of the tongue.

Junichiro Tanizaki describes impressively the spatial qualities of the sense of taste, and the subtle interaction of the senses in the simple act of uncovering a bowl of soup:

> With lacquerware there is a beauty in that moment between removing the lid and lifting the bowl to the mouth when one gazes at the still, silent liquid in the dark depths of the bowl, its colour hardly differing from the bowl itself. What lies within the darkness one cannot distinguish, but the palm senses the gentle movements of the liquid, vapor rises from within forming droplets on the rim, and a fragrance carried upon the vapor brings a delicate anticipation. … A moment of mystery, it might almost be called, a moment of trance.[120]

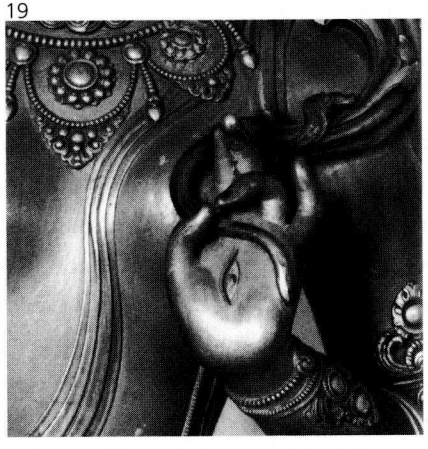
A fine architectural space opens up and presents itself with the same fullness of experience as Tanizaki's bowl of soup. Architectural experience brings the world into a most intimate contact with the body.

Images of Muscle and Bone

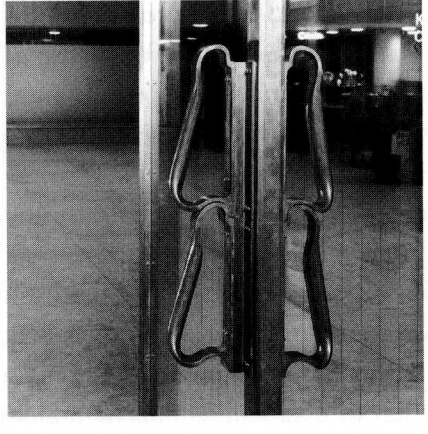
Primitive man used his own body as the dimensioning and proportioning system of his constructions. The essential skills of making a living in traditional cultures are based on the wisdom of the body stored in the haptic memory. The essential knowledge and skill of the ancient hunter, fisherman and farmer, as well as of the mason and stone cutter, was an imitation of an embodied tradition of the trade, stored in the muscular and tactile senses. Skill was learned through incorporating the sequence of movements refined by tradition, not through words or theory.

The body knows and remembers. Architectural meaning derives from archaic responses and reactions remembered by the body and the senses. Architecture has to respond to traits of primordial behaviour preserved and passed down by the genes. Architecture does not only respond to the functional and conscious intellectual and social needs of today's city-dweller; it must also remember the primordial hunter and farmer concealed in the body. Our sensations of comfort, protection and home are

19



20



VISION AND HAPTICITY

19
A tactile ingredient is concealed in vision.

The Buddhist goddess Tara possesses five additional eyes, on the forehead and in her hands and feet. These are considered as signs of enlightenment. Bronze figure from Mongolia, 15th century.

State Public Library, Ulan Bator, Mongolia

20
The door pull is the handshake of a building, which can be inviting and courteous, or forbidding and aggressive.

Alvar Aalto, The Iron House, Helsinki, 1954. Doorpulls.

Museum of Finnish Architecture/Photo Heikki Havas

rooted in the primordial experiences of countless generations. Bachelard calls these 'images that bring out the primitiveness in us', or 'primal images'.[121] '[T]he house we were born in has engraved within us the hierarchy of the various functions of inhabiting. We are the diagram of the functions of inhabiting that particular house, and all the other houses are but variations on a fundamental theme. The word habit is too worn a word to express this passionate liaison of our bodies, which do not forget, with an unforgettable house,' he writes of the strength of the bodily memory.[122]

Modern architecture has had its own conscience in recognising a bias towards the visual nature of designs. 'Architecture of the exterior seems to have interested architects of the avant-garde at the expense of architecture of the interior. As if a house were to be conceived for the pleasure of the eye rather than for the wellbeing of the inhabitants,' writes Eileen Gray,[123] whose design approach seems to grow from a study of the minute situations of daily life rather than visual and compositional preconceptions.

Architecture cannot, however, become an instrument of mere functionality, bodily comfort and sensory pleasure without losing its existentially mediating task. A distinct sense of distance, resistance and tension has to be maintained in relation to programme, function and comfort. A piece of architecture should not become transparent in its utilitarian and rational motives; it has to maintain its impenetrable secret and mystery in order to ignite our imagination and emotions.

Tadao Ando has expressed a desire for a tension or opposition between functionality and uselessness in his work: 'I believe in removing architecture from function after ensuring the observation of functional basis. In other words, I like to see how far architecture can pursue function and then, after the pursuit has been made, to see how far architecture can be removed from function. The significance of architecture is found in the distance between it and function.'[124]

Images of Action

Stepping stones set in the grass of a garden are images and imprints of footsteps. As we open a door, the body weight meets the weight of the door; the legs measure the steps as we ascend a stairway, the hand strokes the handrail and the entire body moves diagonally and dramatically through space.

There is an inherent suggestion of action in images of architecture, the moment of active encounter, or a 'promise of function'[125] and purpose. 'The objects which surround my body reflect its possible action upon them,' writes Henri Bergson.[126] It is this possibility of action that separates architecture from other forms of art. As a consequence of this implied action a bodily reaction is an inseparable aspect of the experience of architecture. A meaningful architectural experience is not simply a series of retinal images. The 'elements' of architecture are not visual units or gestalt; they are encounters, confrontations that interact with memory. 'In such memory, the past is embodied in actions. Rather than being contained separately somewhere in the mind or brain, it is actively an ingredient in the very bodily movements that accomplish a particular action,' Edward Casey writes of the interplay of memory and actions.[127]

The experience of home is structured by distinct activities – cooking, eating, socialising, reading, storing, sleeping, intimate acts – not by visual elements. A building is encountered; it is approached, confronted, related to one's body, moved through, utilised as a condition for other things. Architecture initiates, directs and organises behaviour and movement.

A building is not an end in itself; it frames, articulates, structures, gives significance, relates, separates and unites, facilitates and prohibits. Consequently, basic architectural experiences have a verb form rather than being nouns. Authentic architectural experiences consist then, for instance, of approaching or confronting a building, rather than the formal apprehension of a facade; of the act of entering and not simply the visual design of the door; of looking in or out through a window, rather than the window itself as a material object; or of occupying the sphere

of warmth, rather than the fireplace as an object of visual design. Architectural space is lived space rather than physical space, and lived space always transcends geometry and measurability.

In his analysis of Fra Angelico's *Annunciation* in the charming essay 'From the Doorstep to the Common Room' (1926), Alvar Aalto recognises the *verb-essence* of architectural experience by speaking of the act of *entering* the room, not of the formal design of the porch or the door.[128]

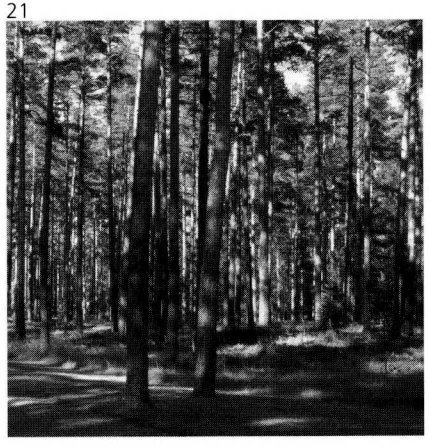
Modern architectural theory and critique have had a strong tendency to regard space as an immaterial object delineated by material surfaces, instead of understanding space in terms of dynamic interactions and interrelations. Japanese thinking, however, is founded on a relational understanding of the concept of space. In recognition of the verb-essence of the architectural experience, Professor Fred Thompson uses the notions of 'spacing' instead of 'space', and of 'timing' instead of 'time', in his essay on the concept of *Ma*, and the unity of space and time in Japanese thinking.[129] He aptly describes units of architectural experience with gerunds, or verb-nouns.

Bodily Identification

The authenticity of architectural experience is grounded in the tectonic language of building and the comprehensibility of the act of construction to the senses. We behold, touch, listen and measure the world with our entire bodily existence, and the experiential world becomes organised and articulated around the centre of the body. Our domicile is the refuge of our body, memory and identity. We are in constant dialogue and interaction with the environment, to the degree that it is impossible to detach the image of the Self from its spatial and situational existence. 'I am my body,' Gabriel Marcel claims,[130] but 'I am the space, where I am,' establishes the poet Noël Arnaud.[131]

Henry Moore writes perceptively of the necessity of bodily identification in the making of art:

21



22

PERIPHERAL VISION AND A SENSE OF INTERIORITY

21
The forest enfolds us in its multisensory embrace. The multiplicity of peripheral stimuli effectively pull us into the reality of its space.

Finnish pine forest in the vicinity of Alvar Aalto's Villa Mairea in Noormarkku.

Mairea Foundation/Photo Rauno Träskelin.

22
The scale and painterly technique of American Expressionist painters provide peripheral stimuli and invite us into the space.

Jackson Pollock, *One: Number 31*, 1950. Detail.

> This is what the sculptor must do. He must strive continually to think of, and use, form in its full spatial completeness. He gets the solid shape, as it were, inside his head – he thinks of it, whatever its size, as if he were holding it completely enclosed in the hollow of his hand. He mentally visualizes a complex form from all round itself; he knows while he looks at one side what the other side is like; he identifies himself with its centre of gravity, its mass, its weight; he realizes its volume, and the space that the shape displaces in the air.[132]

The encounter of any work of art implies a bodily interaction. The painter Graham Sutherland expresses this view on the artist's work: 'In a sense the landscape painter must almost look at the landscape as if it were himself – himself as a human being.'[133] In Cézanne's view, 'the landscape thinks itself in me, and I am its consciousness.'[134] A work of art functions as another person, with whom one unconsciously converses. When confronting a work of art we project our emotions and feelings on to the work. A curious exchange takes place; we lend the work our emotions, whereas the work lends us its authority and aura. Eventually, we meet ourselves in the work. Melanie Klein's notion of 'projective identification' suggests that, in fact, all human interaction implies projection of fragments of the self on to the other person.[135]

Mimesis of the Body

A great musician plays himself rather than the instrument, and a skilful soccer player plays the entity of himself, the other players and the internalised and embodied field, instead of merely kicking the ball. 'The player understands where the goal is in a way which is lived rather than known. The mind does not inhabit the playing field but the field is inhabited by a "knowing" body,' writes Richard Lang when commenting on Merleau-Ponty's views on the skills of playing soccer.[136]

Similarly, during the design process, the architect gradually internalises the landscape, the entire context, and the functional requirements as well as his/her conceived building: movement, balance and scale are felt unconsciously through the body as tensions in the muscular system and in the positions of the skeleton and inner organs. As the work interacts with the body of the observer, the experience mirrors the bodily sensations of the maker. Consequently, architecture is communication from the body of the architect directly to the body of the person who encounters the work, perhaps centuries later.

Understanding architectural scale implies the unconscious measuring of the object or the building with one's body, and of projecting one's body scheme into the space in question. We feel pleasure and protection when the body discovers its resonance in space. When experiencing a structure, we unconsciously mimic its configuration with our bones and muscles: the pleasurably animated flow of a piece of music is subconsciously transformed into bodily sensations, the composition of an abstract painting is experienced as tensions in the muscular system, and the structures of a building are unconsciously imitated and comprehended through the skeletal system. Unknowingly, we perform the task of the column or of the vault with our body. 'The brick wants to become an arch,' as Louis Kahn said, and this metamorphosis takes place through the mimetic capacity of the body.[137]

The sense of gravity is the essence of all architectonic structures and great architecture makes us aware of gravity and earth. Architecture strengthens the experience of the vertical dimension of the world. At the same time as making us aware of the depth of the earth, it makes us dream of levitation and flight.

Spaces of Memory and Imagination

We have an innate capacity for remembering and imagining places. Perception, memory and imagination are in constant interaction; the domain of presence fuses into images of memory and fantasy. We keep constructing an immense city of evocation and remembrance, and all the

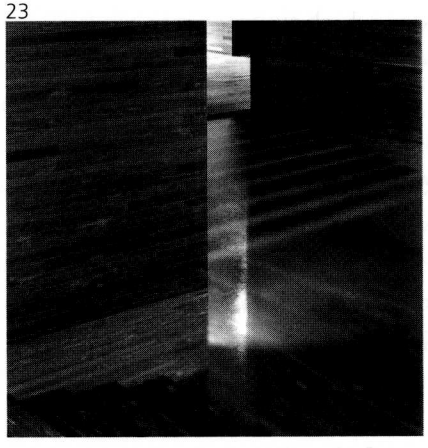
cities we have visited are precincts in this metropolis of the mind.

Literature and cinema would be devoid of their power of enchantment without our capacity to *enter* a remembered or imagined place. The spaces and places enticed by a work of art are real in the full sense of the experience. 'Tintoretto did not choose that yellow rift in the sky above Golgotha to signify anguish or to provoke it. It is anguish and yellow sky at the same time. Not sky of anguish or anguished sky; it is an anguish become thing, anguish which has turned into yellow-rift of sky,' writes Sartre.[138] Similarly, the architecture of Michelangelo does not present symbols of melancholy; his buildings actually mourn. When experiencing a work of art, a curious exchange takes place; the work projects its aura, and we project our own emotions and percepts on the work. The melancholy in Michelangelo's architecture is fundamentally the viewer's sense of his/her own melancholy enticed by the authority of the work. Enigmatically, we encounter ourselves in the work.

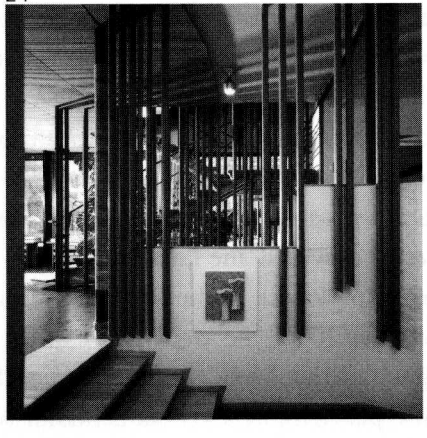
Memory takes us back to distant cities, and novels transport us through cities invoked by the magic of the writer's word. The rooms, squares and streets of a great writer are as vivid as any that we have visited; the invisible cities of Italo Calvino have forever enriched the urban geography of the world. The city of San Francisco unfolds in its multiplicity through the montage of Hitchcock's *Vertigo*; we *enter* the haunting edifices in the steps of the protagonist and see them through his eyes. We *become* citizens of mid-19th-century St Petersburg through the incantations of Dostoyevsky. We *are* in the room of Raskolnikov's shocking double murder, we *are* among the terrified spectators watching Mikolka and his drunken friends beat a horse to death, frustrated by our inability to prevent the insane and purposeless cruelty.

The cities of filmmakers, built up of momentary fragments, envelop us with the full vigour of real cities. The streets in great paintings continue around corners and past the edges of the picture frame into the invisible with all the intricacies of life. '[The painter] makes [houses], that is, he creates an imaginary house on the canvas and not a sign of a

23



24



LIFE-ENHANCING ARCHITECTURE OF THE SENSES

23
An architecture of formal restraint with a rare sensuous richness addressing all the senses simultaneously.

Peter Zumthor, Thermal Baths, Vals, Graublunden, 1990–6.

24
An architecture that addresses our sense of movement and touch as much as the eye, and creates an ambience of domesticity and welcome.

Alvar Aalto, Villa Mairea, Noormarkku, 1938–9. Entry hall, living room and the main staircase.

Mairea Foundation/Photo Rauno Träskelin.

house. And the house which thus appears preserves all the ambiguity of real houses,' writes Sartre.[139]

There are cities that remain mere distant visual images when remembered, and cities that are remembered in all their vivacity. The memory re-evokes the delightful city with all its sounds and smells and variations of light and shade. I can even choose whether to walk on the sunny side or the shaded side of the street in the pleasurable city of my remembrance. The real measure of the qualities of a city is whether one can imagine falling in love in it.

An Architecture of the Senses

Various architectures can be distinguished on the basis of the sense modality they tend to emphasise. Alongside the prevailing architecture of the eye, there is a haptic architecture of the muscle and the skin. There is architecture that also recognises the realms of hearing, smell and taste.

The architectures of Le Corbusier and Richard Meyer, for instance, clearly favour sight, either as a frontal encounter, or the kinesthetic eye of the *promenade architecturale* (even if the later works of Le Corbusier incorporate strong tactile experiences in the forceful presence of materiality and weight). On the other hand, the architecture of the Expressionist orientation, beginning with Erich Mendelsohn and Hans Scharoun, favours muscular and haptic plasticity as a consequence of the suppression of ocular perspectival dominance. Frank Lloyd Wright's and Alvar Aalto's architectures are based on a full recognition of the embodied human condition and of the multitude of instinctual reactions hidden in the human unconscious. In today's architecture, the multitude of sensory experiences is heightened in the work of Glenn Murcutt, Steven Holl and Peter Zumthor, for instance.

Alvar Aalto was consciously concerned with all the senses in his architecture. His comment on the sensory intentions in his furniture design clearly reveals this concern: 'A piece of furniture that forms a part of a person's daily habitat should not cause excessive glare from light reflection: ditto, it should not be disadvantageous in terms of sound, sound absorption, etc. A piece that comes into the most intimate contact with man, as a chair does, shouldn't be constructed of materials that are excessively good conductors of heat.'[140] Aalto was clearly more interested in the encounter of the object and the body of the user than in mere visual aesthetics.

Aalto's architecture exhibits a muscular and haptic presence. It incorporates dislocations, skew confrontations, irregularities and polyrhythms in order to arouse bodily, muscular and haptic experiences. His elaborate surface textures and details, crafted for the hand, invite the sense of touch and create an atmosphere of intimacy and warmth. Instead of the disembodied Cartesian idealism of the architecture of the eye, Aalto's architecture is based on sensory realism. His buildings are not based on a single dominant concept or gestalt; rather, they are sensory agglomerations. They sometimes even appear clumsy and unresolved as drawings, but they are conceived to be appreciated in their actual physical and spatial encounter, 'in the flesh' of the lived world, not as constructions of idealised vision.

The Task of Architecture

The timeless task of architecture is to create embodied and lived existential metaphors that concretise and structure our being in the world. Architecture reflects, materialises and eternalises ideas and images of ideal life. Buildings and towns enable us to structure, understand and remember the shapeless flow of reality and, ultimately, to recognise and remember who we are. Architecture enables us to perceive and understand the dialectics of permanence and change, to settle ourselves in the world, and to place ourselves in the continuum of culture and time.

In its way of representing and structuring action and power, societal and cultural order, interaction and separation, identity and memory,

architecture is engaged with fundamental existential questions. All experience implies the acts of recollecting, remembering and comparing. An embodied memory has an essential role as the basis of remembering a space or a place. We transfer all the cities and towns that we have visited, all the places that we have recognised, into the incarnate memory of our body. Our domicile becomes integrated with our self-identity; it becomes part of our own body and being.

In memorable experiences of architecture, space, matter and time fuse into one singular dimension, into the basic substance of being, that penetrates our consciousness. We identify ourselves with this space, this place, this moment, and these dimensions become ingredients of our very existence. Architecture is the art of reconciliation between ourselves and the world, and this mediation takes place through the senses.

In 1954, at the age of 85, Frank Lloyd Wright formulated the mental task of architecture in the following words:

> What is needed most in architecture today is the very thing that is most needed in life - Integrity. Just as it is in a human being, so integrity is the deepest quality in a building … If we succeed, we will have done a great service to our moral nature - the psyche - of our democratic society … Stand up for integrity in your building and you stand for integrity not only in the life of those who did the building but socially a reciprocal relationship is inevitable.[141]

This emphatic declaration of architecture's mission is even more urgent today than at the time of its writing 50 years ago. And this view calls for a full understanding of the human condition.

NOTES

Preface

1 Maurice Merleau-Ponty, *The Visible and the Invisible*, Northwestern University Press (Evanston, IL), 1968. pp 148–9.

Introduction

1 James Turrell, 'Plato's Cave and Light within', in *Elephant and Butterfly: permanence and change in architecture*, ed Mikko Heikkinen, 9th Alvar Aalto Symposium (Jyväskylä), 2003, p 144.

2 Ashley Montagu, *Touching: The Human Significance of the Skin*, Harper & Row (New York), 1986, p 3.

3 A notion of Johann Wolfgang von Goethe, as referred to in ibid, p 308.

4 Ludwig Wittgenstein, MS 112 46: 14.10.1931, in *Ludwig Wittgenstein – Culture and Value*, ed GH von Wright, Blackwell Publishing (Oxford), 2002, p 24 e.

5 See Anton Ehrenzweig, *The Psychoanalysis of Artistic Vision and Hearing: An Introduction to a Theory of Unconscious Perception*, Sheldon Press (London), 1975.

The Eyes of the Skin

1 As quoted in *Not Architecture But Evidence That It Exists – Lauretta Vinciarelli: Watercolors*, ed Brooke Hodge, Harvard University Graduate School of Design (Harvard), 1998, p 130.

2 Friedrich Nietzsche, *Thus Spake Zarathustra*, Viking Press (New York), 1956, p 224.

3 Richard Rorty, *Philosophy and the Mirror of Nature*, Princeton University Press (New Jersey), 1979, p 239.

4 Jorge Luis Borges, *Selected Poems 1923–1967*, Penguin Books (London), 1985, as quoted in Sören Thurell, *The Shadow of A Thought – The Janus Concept in Architecture*, School of Architecture, The Royal Institute of Technology (Stockholm), 1989, p 2.

5 As quoted in Richard Kearney, 'Maurice Merleau-Ponty', in Richard Kearney, *Modern Movements in European Philosophy*, Manchester University Press (Manchester and New York), 1994, p 82.

6 Heraclitus, Fragment 101a, as quoted in *Modernity and the Hegemony of Vision*, ed David Michael Levin, University of California Press (Berkeley and Los Angeles), 1993, p 1.