Fundamental Concepts of Architecture

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The Vocabulary of Spatial Situations

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Introduction

A description solely in terms of form, dimensions, construction and materials would hardly do justice to Balthasar Neumann's staircase in the Bruchsal Palace. Even the most penetrating characterization, taking into consideration the structure's history and context and its original and current functions, would miss its specifically architectural qualities if we fail to account for our experience in concrete terms. An initial approach to the staircase leads into darkness; at the same time, we are confronted with an alternative to the cave-like atmosphere below in the form of ascending to the right or to the left, guided upwards by light, sweeping outward in an almost dancelike manner between dark depths and bright natural light, with no indication as yet of where the staircase ultimately leads. We continue upwards, sweeping back until we reach an oval platform that seems to be suspended in space, detached from the walls and deprived of support, and vaulted over by the colourful, mysteriously illuminated depiction of the heavens on the ceiling, which serves as an antipode to the darkness below.

The specifically architectural qualities which concern us here pertain to the articulation of all conceivable spatial relationships by means of specifically architectural resources.

Neither technically nor formally is the production of objects the principal task of architecture; instead, it is charged principally with creating suitable spatial situations for lingering at various locations, for movement and for action. Decisive here is the interplay between the spatial features of the constructive elements involved and the circumstances under which they are perceived, used, and experienced.

Fundamental Concepts in Architecture comprehends these architectural situations from the perspective not of de-

sign, but of experience. The key consideration of architectural design is the way in which people experience the buildings that have been created for them. Although the terms 'roof', 'base' and 'wall' do appear in this volume, the individual concepts do not refer primarily to constructive contexts; while the terms 'axis', 'enfilade' and 'proportion' are considered, we do not represent an aesthetic doctrine of building shapes; nor is it our intention to locate these terms within the history of architecture. Nor, finally, will concepts be generalized within a broad sociocultural context. Instead, the concrete architectural phenomenon is foremost; description concentrates on the situative contents of the respective term in close connection with concrete structural-spatial form.

Fundamental Concepts in Architecture contains no scientific definitions and does not offer the kind of information normally found in reference books; instead, the reader is invited to examine architecture from an experiential perspective. Via observations of architectural situations in relationship to these basic concepts, the reader is offered an instrument designed to orient, hone and expand his or her perceptions, a resource for clarifying one's own concrete experiences of architecture in relation to the terms elucidated here.

That the contents of these terms can only be adequately comprehended in relation to subjective experience does not mean that they possess only individual validity. As soon as subjective perceptions and experiences are described with lucidity and precision, they are amenable, in principle, to verification by anyone who exposes himself to the conditions specified. We can speak with Josef König in saying that the immediate aptness of such statements cannot be certified, but instead only recognized in specific instances (1957, 284). To restrict our descriptions to the measurable, the quantifiable, to putatively objective fact, would constitute culpable neglect, would exclude what is most valuable in architecture, including its essential aspects. Our psychological states depend upon the significance and the intellectual demands made upon us by

the physical environment, by its appeals and atmospheres, at least as much as they do upon things like 'street-cleaning' and 'house keys' (Karl Kraus) – although we often lack a term for the former. As a rule, in any event, a precise and comprehensive description of the phenomena of architectural experience surpasses the degree of differentiated attention entailed by the casual perceptions of the typical architectural consumer. But because subliminal effects are just as important, architects must possess an exact knowledge of the phenomena they are responsible for generating.

For ancillary architectural disciplines such as building technology, architectural and art history, building law and planning theory, there exist very precise, codified terminological definitions. It is considerably more difficult to attain conceptual clarity in the core area of architecture, so often plagued by imprecise and clichéd terminology. It is much easier to define terms such as 'vapour barrier', 'wimperg' or 'Land Use Ordinance' than it is to explain in words what constitutes a spatial > gesture or a spatial > sequence. The specificity of architectural situations can be grasped less through historical, technical or planning-theoretical terminology than through the phenomenological description upon which *Fundamental Concepts in Architecture* relies.

While this compendium makes no claim to constitute a complete, self-contained conceptual system, the form of this dictionary, with its hypertextual structure of references, defines individual terms not solely within a given entry; instead, each term acquires precision by registering differences and potentials for connection in relationship to others. This intricate and closely woven set of relationships forms a conceptual network, one capable of capturing essential features of architectural experience.

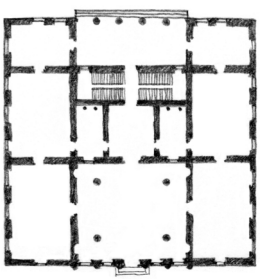
While our experience of architecture is describable, it can only be illustrated graphically to a limited degree. For the most part, the accompanying sketches are intended to illustrate a few basic structural conditions as examples.

Terms

Access

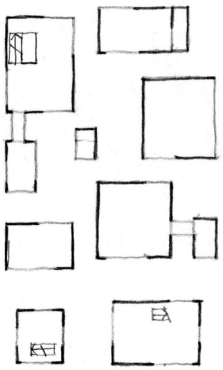
Streets and routes, corridors and staircases are not only systems of access but also keys to the communal lives of occupants. Because they provide information concerning the distribution of spaces and the patterns of movement that connect them, access systems and the gestalts of access spaces condition and express social structures. The structure and development of urban districts and entire cities is recognizable through the development of transport infrastructure; neighbourly relations are mirrored in the types of vertical accesses found in multistorey buildings; forms of residency are displayed in the accesses of apartment layouts.

All types of accesses simultaneously reflect and influence living conditions: playing a role in everyday life is the question of whether a family lives in direct proximity to open space or in an upper storey, whether they live alone or together with several neighbours in a two-family house, or with many neighbours in a balcony access building. Everyday working conditions are also affected by whether a workplace is set in an office cell along a corridor or in a large open-plan office. Corridors were invented as independent distribution spaces in order to exclude disturbances from main or common rooms, which then, ideally, had only single doorways. The precondition for this arrangement is a strict distinction between the corridor as a > route and the room as the destination towards which it leads. To be sure, the corridor access as a primary system of routes simplifies connections between rooms, but at the same time it reduces contact. Purposeful, regulated communication is facilitated, while reducing contingent contacts. As Robin Evans has shown, this access structure determines the role and the spatial character of the private sphere to a substantial degree. It stands in opposition to an access system that facilitates informal contact via a plan in which rooms are not accessed via corridors that serve as distribution channels, but instead via connecting rooms with multiple doors, as was customary up until the seventeenth century. In this instance, the basic concept of the building was that of an open form,



a ‘matrix of discrete but thoroughly interconnected chambers’ (Evans 1996) that served the nuanced navigation of desired or habitual contact and promoted conviviality.

The configuration of access provides information about the architectural > concept within which the > spatial structure is concentrated. In typologies of building design, access is the most common parameter. Often, a building’s architectural composition and its appearance are substantially shaped by the configuration of accesses. Striking instances include Andrea Palladio’s Villa Rotonda, Frank Lloyd Wright’s Guggenheim Museum, and Hans Scharoun’s Ledigenwohnheim (single men’s hostel). Individual access spaces such as hallways, staircases or entrance halls may be shaped in such a way that they open up spaces of > orientation or overviews (> gallery) or serve to introduce (> introduction) the building’s structure rather than being downgraded in design terms as ancillary rooms.



Theatre and hotel lobbies serve purposes not only of access, but also of informal encounter; the same is true of the lobbies of research institutes, since incidental communication can be highly productive and promote knowledge exchange. In apartment buildings as well, access spaces can be designed to promote incidental contacts as well as facilitating circulation. This task is also assumed by contained outer spaces, such as the > courtyard of an atrium or courtyard residence, and in some cultures also the enclosed or open > intermediate space between small houses for the members of the family, a flat sharing community, or individual functions. In the Moriyama House by SANAA, the open space – which alternates between public and private – merges with the urban realm.

If we consider that accesses not only mediate between public and private areas, but must also differentiate between various degrees of > accessibility, then – according to Dorothea and Georg Franck – they represent a hierarchy of fractal structures within which each room contains further forms of access as well as being accessed. They form a continuous

sequence all the way from the city as a whole down to the room as a 'space of access for cabinets and compartments'.
Literature: Evans 1996; Franck/Franck 2008

Accessibility and exclusivity

Architecture may be grasped as a complex, graduated system of accessibility. Wherever people live simultaneously as individuals and in collectives, there is a task of grading the individual's private sphere in relation to communal and public areas. But it is not enough simply to distinguish between the poles of private and public: accessibility and exclusivity must be continuously graded, either as a > sequence of rooms or in the > spatial structure of the building of the whole. These relationships are organized architecturally through the subdivision and arrangement of separate rooms that are distinguished from one another in terms of their qualities of intimacy and publicness through size, illumination and furnishings, thereby suggesting specific modes of comportment. Their accessibility is steered additionally by insertion of > intermediate spaces and by differentiated degrees of the permeability (> filtering) of > screening.

The positioning and arrangement of rooms thereby forms a sequence of opening and opened up (screened off) rooms, from the most secluded and increasing by degrees of accessibility, so that the number of people admitted is staggered gradually. In the broadest sense, we find a continuous spectrum from streets and squares, to semipublic zones such as the interiors of residential blocks or entrance lobbies, and all the way to individual rooms.

Within a building, we may find a series of spaces graded according to exclusivity, as in the > enfilades of princely palaces. In other plans, the entry to private rooms is via the building's semipublic spaces, including atriums, halls, or salons, depending on the type of > access. Decisive is the degree of the isolated position in the plan, and its reachability or distance from the building's (semi-)public spaces. If access to a room

is via a series of connecting rooms rather than a corridor, the number of rooms to be traversed is a measure of accessibility (> depth). The relationship between a sense of security and freedom of movement is displaced at every stage. The constitution of the screening is also decisive. It determines the degree of closeness, views into the room, and acoustic separation. Gradual filtering facilitates various degrees of separation, from total closure to a semi-permeable screening that only alludes to separation, and all the way to the lightweight folding screen. The sliding walls found in a traditional Japanese house, for example, regulate accessibility without sharp spatial limitations and unambiguous hierarchies, allowing the possibility, for example, for figures behind the wall to be seen, albeit dimly, and for voices and noises to remain audible without their sources becoming visible. The background for requirements of accessibility and exclusivity are formed by various culturally conditioned notions of intimacy.

It is not just a question of providing opportunities for individual seclusion or social interaction found at the far ends of a scale of privacy; instead, every gradation of accessibility and exclusivity shapes the conditions of social interaction in subtle ways. Individual activities can be assigned corresponding positions on the privacy scale; the spectrum covers types of sociability, discreet encounters, concentrated work, or total encapsulation. At every gradation, the type of > personal space finds its corresponding extension.

Literature: Evans 1996; Franck/Franck 2008

Acoustics > sound

Aesthetics > beauty, experience, image, picturesque, scene, sensory perception, use

Age/Ageing > materiality, monument, patina, time

Ambulation > arcade, movement, rhythm (spatial), route, sequence

Angle and corner

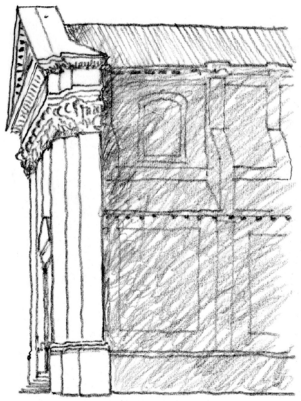
A simple > concavity results when two planes converge to form an angle. The Greek word ἀγκύλος *(ankylos)*, from which the word *angle* derives, means 'crooked' or 'curved'; the Latin *angulus* means 'corner'. When a wall surface is bent, or when a pair of walls are configured to form an angle that is not excessively acute or obtuse, they begin to enclose a space, a volume that is perceptible as being an > interior, producing a condition of 'insideness'. And an angle formed by folding a wall around an adjacent floor area spans a diffusely delimited space like a kind of cast shadow (> space shadow). Three walls that form a 'U' represent an extension of the angle. When forming an acute angle, the planes seem constricting; if they form an obtuse one, expansive; a right angle tends to have a neutral effect, and occupies an inconspicuous intermediate position.

As a screening element, the angled wall is a simple means of excluding gazes and of sequestering a space. Outdoors, it serves as a wind shield, and the combination of wall and roof forms a primitive shelter. In the urban context, spaces are formed by the interplay of structures, and the angle between two facades is a basic element for stabilizing spatial figures, in particular the edges of public squares; in Venice, for example, many church forecourts are framed by two facades set at an angle *(a canto)* between the church front and the neighbouring building.

In interiors, corners are zones characterized by heightened forms of introversion. In contrast to straight walls and rounded rooms, corners embody narrowness. In angles, space becomes condensed, gathered together. Just as a pair of outspread arms in a receptive gesture encloses a small space, the angle between walls opens up to receive space. A stance with the corner of the room behind one's back offers a good overview, while the (right) angle formed by the walls corresponds, for example, to the angle of vision. Given the geometry of the angle, withdrawing into a corner means entering an increasingly narrow space, opting for restriction of movement,

which however may be exited again by taking a few steps. The general significance of the angle as a secluded and sheltering space comes into its own when it is used as a place of individual refuge, as a play or sulking corner, as an intimate interspace between bed and wall, or heightened ritually to become a domestic shrine.

The corner displays, in connection with the building as a whole, and generally on the outside, the relationship between two adjacent walls. From the corner, one's > gaze is guided around the building. A unified appearance may be aimed for all the way around, in which case the corners – as the results of the spatial condensation of specific rhythms of articulation – must resolve certain conflicts associated with corners since antiquity. Or else walls of divergent characters meet at a corner, making it clear that the building turns towards contrasting neighbouring structures by means of differing wall design. Also recognizable at the corner is the way in which a facade is set in front of the building, thereby assuming priority as its principal side. Aimed for via the alternation of concave and convex corners is a > folding of the walls, which result in transitions between open spatial areas and introverted zones. A space may be folded into itself and everted, the result being a spatial > inversion. The niches, angles and corners formed in this way are available for differentiated individual uses, and may take on the character of a > space-containing wall.
Literature: Bachelard 1964/1994



Announcement > intimation
Anteroom > courtyard, intermediate space, inversion, square and street
Apartment > furnishing, residence, territory

Appeal

Appeals are architectural > expressions, by which we feel ourselves influenced especially strongly. In architecture, they are conveyed through structures and spatial situations that ad-

dress the beholder directly in an initial phase of perception within which moods and feelings emerge, subliminal expectations are aroused, and corresponding reactions are triggered. Among the expressive qualities of > form character and > atmosphere, an appeal is distinguished by the way in which it is intensified to constitute a suggestive effect that is not easily evaded.

The appeal of a concave form, for example, is often experienced as receptive in character, while the expressive quality of a tall, looming tower is perceived as commanding, if not menacing. Many appeals address us in relation to our spatial comportment, for example, when forms and situations appear seductive or uninviting, approachable or constricting. The appeal of dynamic expressive qualities is apparent in particular in relation to spatial > gesture; a low, dark ceiling, for example, seems oppressive, a vault containing an ascending spatial form uplifting. In appeals, atmospheric qualities appear especially insistently by virtue of their influence on our mental states; through their suggestiveness, buoyant atmospheres may cheer or attract us, and gloomy ones may seem hostile or depressive. More strongly than with other architectural forms of expression, appeals elicit a specifically emotional interaction with the respective situation. Our responses are dependent upon personal predispositions; we involuntarily make adjustments between appeals and our own needs, expectations and experiences. Impulses towards spatial behaviour that emerge from an appeal, i.e. to avoid hurrying in a church, are perceived as imperative – independently of whether or not we heed them. Of relevance for concrete experience, in any event, is the extent to which an appeal – despite all of its indeterminacy – suggests movements such as approach, entrance or traverse (> invitation character), or commends the adoption of specific postures and positions in space.

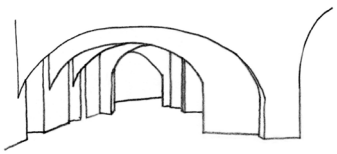
Literature: Arnheim 1977/2009; Böhme 1998; Dürckheim 2005

Approach > intimation, introduction, sequence
Appropriateness > complexity, light, meaning, ornament, proportion, size
Appropriation > capacity, complexity, order, ornament, territory, residence, urban design

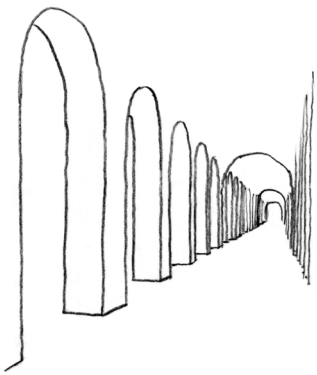
Arcade

Set in front of a building, an arcade constitutes an > intermediate space belonging simultaneously to the building and the space outside. Primarily the arcade is a range of arches carried on piers or columns. The term also refers to the space as a whole, which – as in the cases of the pergola, covered walk, loggia, colonnade and > gallery – constitutes an independent spatial category that emerges from the superposition of exterior and exterior spaces (> transparency). Everything said below about the arcade is true by analogy of these forms as well. As roofed passageways or halls that are open on at least one side and delimited as a rule only by a series of supports, columns or pillars, such spaces possess a public character, while also allowing more sheltered forms of use; at the same time, functions taking place in the building's interior may expand outward into the space of the arcade.

In its most economical form, this function is assumed already by the open > space-containing wall of a > facade. When we traverse such permeable spatial layers, which create distance, on the way between > inside and outside, they influence the act of transition as zones of interaction and changing behaviour. Spacious, open arcades are easily traversed; stocky covered walks with thick pillars seem to lead into dark, cool grottoes, while the columned portico is still an especially dignified form.



In cities with streets lined with spacious arcades, the street fronts seem to have been covered with a permeable, porous layer that loosens up facade contours. As a lengthwise extension along the street, the arcade forms a continuous link between individual buildings and effects unity in relation to their heterogeneity. In the arcade passageway, we move along



a space-containing boundary between inside and outside, and enjoy the option of exiting into the outer space or retreating into the interior. Arcades allow us to pass without interruption through a town in a weather-protected 'shadow gap' that is set alongside architectural masses. The curve of each arch *(arcus)*, which leads without interruption from one zone to the next, along with the continuous > sequence of the supports, endows our promenade with > rhythm. When the gaze is directed into the distance, the optical narrowing of the intercolumnar zones generates the impression of a closed interior space. Without warning, passersby enter through the 'wall' formed of the supports; but we never actually reach this 'wall'; upon approach, we find it has already dissolved.

The uniform repetition of arches, pillars and spatial units promotes a contemplative > circulation or relaxed strolling. From the outside, the passerby is perceived as continually vanishing and reappearing; by the same token, the outer world lying beyond the arcade disappears and returns to sight. When the sun is shining, we alternate ceaselessly between shadowy and light-flooded zones. By virtue of their perpetual alternation, such contrasts of light and shadow – so typical of the arcade – seem to possess a magical potential – as in the paintings of Giorgio de Chirico's *pittura metafisica*, where arcades serve as frames and backdrops for enigmatic and concealed events (> picturesque). In roofed pilgrimage routes, pergolas and foyers, the arcade gains its independence as a freestanding structure. When turned inward as peristyle or cloister to form the ambulatory of a > courtyard or garden, it may be regarded as an eversion (> inversion) of the street arcade – not unlike the side aisle of a basilica that flanks the nave.
Literature: Schmalscheidt 1987

Arch > arcade
Archetype > dwelling, type

Architecture

The concept of architecture is extensible – all the way to Hans Hollein's assertion: 'Everything is architecture'. If we regard the function of architecture as being primarily to 'articulate spaces' (Eco 1986), then the 'architectonic' element of architecture can be characterized (1) in terms of the application of specific resources; (2) in terms of its structural systematics; and (3) in terms of the way in which it is experienced.

1. Contributing to architectural resources, to be sure, is a multiplicity of factors (form, construction, material, light, colour), all of them also effective in other domains. Some components, on the other hand, are essential to architecture as they are for no other discipline.

These include the reciprocal conditioning of three-dimensional masses (convexities) and contained volumes (concavities), i.e. the complementary relationship between > bodies and > spaces. Space can be shaped and experienced, can be rendered habitable, only when it is contained and shaped by bodily elements, while architectural structures and masses count as such only when they are surrounded by space. Physical masses offer resistance to our own bodies, while the voids between them afford us space for movement and for vision. In the relationship between bodies and space, architecture articulates the relationship between figure and ground (> space-body continuum), one that is fundamental for perception.

The instrument referred to as > screening is also based on complementary and reciprocal effects. It controls the relationship, which is constitutive for architecture, between > interior and exterior, i.e. by simultaneously separating and linking them.

A primordial architectural act is the generation of an interior space via its delimitation from a surrounding external space, whether natural or urban. The condition of a space's usability, in turn, is the overcoming of this separation by means of openings that join interior and exterior. In a corresponding way, screening also regulates the relationship between various interior spaces or between separate urban spaces. As a

consequence, and despite the opposition between interior and exterior, between vision and connection, the architecture provides us with a sense of their unity.

An originary task of architecture, finally, is its confrontation with a concrete > place. From the special features of a place, the work of architecture develops an identity and achieves a stable presence via its rootedness in the place. As soon as a building occupies a location, it interacts with the local context and transforms it. The building's continued existence requires stability and solid construction. But as a spatial totality, it cannot be perceived from a static position, but must be experienced and used through the act of traversing it, via continual changes of position. Architecture, then, despite its permanent rootedness in a place, always also consists of > sequences of spatial units linked together by > movement into a temporal progression. It thereby endows the relationship between simultaneity and succession with concrete expression (> time).

2. By 'architecture' in a general sense, we understand a methodical construction in which the configuration of parts results in a whole, such as the elements of a set of agreements or the components of an equipment system. 'Architecture' also means, in a figurative sense, the elaborated structuring of a theory, the well-constructed composition of a picture or a piece of music. Because it refers to something specifically architectural, and in contrast to the non-architectural cases in which the term is also used, clearly, it refers to a necessary and essential feature in the case of architecture. Only structures that manifest this feature should be regarded as genuinely architectural. Such structures go beyond building as a technical undertaking in particular by virtue of the way in which the systematic interplay between part and whole is communicated to our senses coherently (> readability). By bringing the existing structural > order to > expression by means of its architectural design, it fulfils a precondition for providing intellectual satisfaction. A higher level of expectation would

even call on architecture to render the world graspable via the medium of its spatial structuring.

3. Architecture is not restricted to the erection of buildings, but conditions our habitation of spaces, and shapes our experience in relation to them. Architecture allows spatial > situations to emerge that are equipped with > atmospheres, and that we experience with all of our senses, as well as through the interplay between constructive-spatial properties and our bodily movements, our activity as users, and our mental states. In contrast to the objective reality that is attributed to a building as a mere object, and differently from the ideal reality of a pictorial work of art, the situative reality of architecture as I perceive it is at the same time my subjective reality. In a performative act, we experience our interaction with space – including its practical > use – from a self-referential perspective – if often only subliminally. It is tempting to draw a parallel with a > scene in a theatre. We watch ourselves during our activities in a spatial framework designed for this purpose, or become aware of them incidentally. But unlike a performance with actors and audience, we are simultaneously actors and onlookers. We experience the spatial relationships described above – including those between body and space, interior and exterior, place and movement, as well as the structural order of the whole – as situations in which we ourselves play active parts.

Architecture parlante > image, readability

Arrival > dramaturgy, ingress and exit, intermediate space, introduction, route

Ascent To experience one's own body with intensity while ascending constitutes a very special form of enjoyment. One must exert oneself, lift one's own body, maintain equilibrium, and avoid falling. But our efforts are rewarded when we reach an