

Language Structure and Building Types

by Thomas A. Markus



Thomas A. Markus
University of Strathclyde
Glasgow

Language gives useful insights into design processes, especially through the categories it establishes and forms into a classification system. This paper focuses on the development and use of language categories which describe and prescribe function and tries to derive a definition of building type from this classification.

MANY WORKERS HAVE EXPLAINED the way building design solutions are rooted in, and developed from, a lexicon of types. The question of language is central to that of typology. But there is another reason why, in any discussion of design, unstated assumptions about the use of language in design should be brought to the surface and examined. Simply because language is involved at every stage. Members of a design team and their clients communicate in ordinary language. The *prescription* of what is to be designed and built – the brief – is a text. Equally, once the design or the building is complete, the same *descriptive* terms are used. Once it is in use, the rules for using a building – the management régime – are formulated in ordinary language. When designers invent special languages such as graphical simulations and computer systems these too are translations from the same ordinary root.

To examine all these uses of language is clearly impossible here. So I have chosen to focus on the language used for defining building types, in the belief that this is of interest in the design context.

The argument is based on the link between experience and language. Two kinds of experience are referred to – the general experience of other people (social experience) and the specific experience of a major part of material culture – the space built by and in society. Both of these experiences are given meaning through language and they become part of the inner world.

It is taken as axiomatic that the inner world of thought and feeling about other people and about the built space we share with them not only requires language for its expression, but for its creation. If there is no word for an experience it remains unformed and unremembered. So language has a dual role: it is active both in the

creation of experience and in its *recreation* – that is its communication. And through experience transformed by language we come to know ourselves, others and the world – including the world of buildings. That is we discover meanings. We structure these meanings by forming language categories and classes, which are the basis of a typology.

But language is involved not only in creating the inner world, so that it has meaning, but in creating the outer world of the very social and spatial structures which we experience. To establish social relations we depend on nameable categories of participants. The design of usable space depends on the ability to name, at the outset, what is being built and all its parts and, on completion, to respond to what has been created by recognising the same categories.

This way of looking at society, space and language has been made familiar by structuralists, especially in anthropology, but because language is so central, studies of metaphor are also relevant, and in so far as both space and language produce and reproduce social structures, with all their asymmetries of power, so are those of political processes. A key notion here is Giddens' of 'structuration' (for a review of these and other approaches Lawrence and Low, in Siegel, Biels and Tyler, 1990, is useful).

If the outer, social and material worlds are the source for our experience which becomes meaningful in our inner world, the sharing of these meanings with anyone else involves communication with the same language which enabled us to make sense of it the first place. The problems arise when people share a language but not necessarily the experience. Kouwenhoven (1982), in the context of material culture, explains this problem. By using words to describe a rich and unique experience we use something which is 'inherently "defective" ... a sort of generalised, averaged-out substitute for complex reality comprising an infinite number of individual particularities'. If my only experience of working in a factory is that of a Lancashire textile mill and someone else's that of a part-automated Swedish

car assembly plant, then by using the word 'factory' we are likely to misunderstand each other. The spoken word's value is that it enables us, by means of a limited vocabulary, to share the myriads of possible experiences. 'Words do not *have* meaning; they *convey* it. But they can convey it only if the receiving consciousness can complete the current of meaning by grounding it in comparable particulars of experience'. Of course too rigid an adherence to such a view eliminates the possibility of meanings shared through language alone; a good writer or poet may be able to re-create the textile mill even for someone who has not experienced it in the flesh. But even then there must be *some* germ of shared experience between writer and reader, and in any case Kouwenhoven is talking about prosaic communication well below the level of the novel or poem.

An argument which connects experience, language, meaning and type raises several questions. First, what is the nature of the experience of buildings; what are its components? Secondly, what does this experience mean; does it make sense to ask that question? If it does, is there a single meaning, a set of related meanings, or a set of unrelated meanings? And do meanings vary with culture – that is dislocations in space and time – and for individuals within a culture? Do meanings for individuals change with time? Thirdly, what language categories are used to give meaning a structure? And fourthly, last of all, what have language categories to do with 'type'?

Experience of the material world – buildings

It may seem odd to start a discussion of such abstract topics as language and type with a discussion of concrete experience. There is both a practical and a theoretical reason for this, which are two sides of the same coin. The practical one is the natural resistance to any abstraction which does not, in an evident way, relate to experience. In the concrete practice of 'architecture' those who are, or have, been involved with students or design practitioners have experienced this. Its

deep-rootedness arises from an instinctive grasp of the second, theoretical, reason: the relationship between sense experience and ideas which is philosophy's most ancient concern.

Towns, settlements and buildings are created to produce articulated space for use. If people are asked to categorise their experience of this material world, they produce a wide range. But I am going to focus on just three, in the belief that there is general agreement that they are significant, and one way or another they would appear on most lists. They arise from the three basic features of built space. It is articulated by material divisions such as walls which not only have a surface physiognomy of formal elements, but give the space they enclose form; the spaces are used for something; and they are related to each other in a spatial structure. Form, function and space are part of everyone's daily experience of buildings and are the three features which I shall use in my analysis.

Form

There is nothing new in an emphasis on the experience of form. It is one of the most powerful and has been the traditional concern of architectural theory, teaching and practice. And it is the one which today is the dominant focus of both professional publications and of the lay media. Questions of plan composition, volumetric massing and geometry, the treatment of surfaces by articulation, ornament or iconographic elements, the control of solid to void ratios, the exploitation of the formal properties of constructional and structural systems – all these are the traditional means of creating a formal language which, when it is coherent, is a style. For centuries it focussed around the Classical Orders.

Most of the analytical tools have their origins in art-historical methods, with roots in the Renaissance post-Vitruvian treatise, elaborated in seventeenth and eighteenth century France, transformed by nineteenth century German idealism and archeology, and finally matured in the present one. Throughout much of this time the system of Classical Orders was being developed

into such a refined and coherent system that Summerson (1964) speaks of it as a language.

The most important recent addition to the tools for analysis of form is that which treats them as signs (e. g. Eco 1986). Semiotics has added a rich set of techniques and insights which ought to have played an important role in architectural theory and practice; in fact it has remained marginal, whilst all around – in literature, film and painting for instance – it has brought about quite permanent shifts.

Of course it is naturally assumed that the sense experience which matters is that produced by what is seen. But for a blind person form is communicated through the other senses – touch, hearing, smell and perhaps even taste. This point is worth making to emphasise that experience of form involves all the senses. It is also usual to assume that the experience of form springs from buildings; but representations of form in drawings, models and photographs are also sources of experience.

Function

This is dry-sounding word. The Modern Movement has much to answer for – it has given the word narrow biological, mechanical or technical connotations whereas all human purpose is embedded in it. Function is experienced directly when we are actors or participants in an activity. Or we may be observers of others' activities. If we are neither actors nor observers – if nothing is going on and there is no one else present or we are decoding a drawing – we obtain functional experience indirectly, through inference. The location of a space in a town and in a building, its formal features, and its contents (for instance the beds in a hospital ward, the seats, podium and audio-visual equipment of a lecture room, or the equipment and furniture in an office), within a culture that is familiar, are read as signs from which purposeful activity is inferred. The semiotic methods referred to earlier have attempted to relate formal and functional signs. I will come back to them. Texts about buildings contain explicit functional knowledge.

Descriptions of functions are probably the most ubiquitous event that occur in the design process – traces of this are evident in every discussion, meeting, drawing and computer program. They are verbal. Single words such as ‘parlour’, ‘canteen’ or ‘classroom’ are labels which carry a rich set of meanings about the function of the referant spaces. Of course, once again, it requires cultural knowledge for these to be clear. And even within a homogenous culture there will be inter-personal differences in the meanings attached to these words. The words are embedded in entire texts; these have their own properties such as are possessed by any text and which arise from the values and perceptions of the author and which become evident in the length, degree of elaboration, the hierarchical structure which gives them depth, the ‘voice’ or ‘tone’ and the things they could say but do not. This is the silent discourse. No human language, whether spoken or written, can ever be ‘innocent’. Probably the most powerful texts in architecture are *prescriptive* rather than *descriptive*. These range from simple oral instructions, to letters, Town Council or Parliamentary Acts, and competition or fully elaborated client briefs. Design guides are prescriptive of a class of buildings rather than of a unique case.

The labels can be further elaborated; a canteen might be a military mess or a student cafeteria. It is possible to tear the actual activity and its space out of context. For instance one could put a school classroom into, and even conduct its teaching in, a railway station or an art gallery. But what would one make of it? What would one call such a place? What label would one give it? The unease and bizarre feelings are due a lack of consonance between the label and its functional and spatial – that is social – context. Whilst the activity and its space can be thus torn out of context, language is resistant. It remains firmly context-bound, that is woven into a structure which is created by familiar experience. That is precisely its beauty and value. If there is no word which carries familiar meanings then space loses its meaning.

For the reasons put forward by Kouwenhoven the picture of ‘function’ given by a text always narrows experience to a greater or lesser degree, staying nearer the surface than its origins. It became even more constrained under the influence of the Modern Movement which defined the word as having to do with technical, material and biological issues. Just how much texts reduce the richness of reality becomes clear if we consider places which we use repeatedly or where memorable events in our life have occurred. There are limits to the fulness of meaning any text can give about our house, the place where we worked for years, our old school or the seaside hotel of childhood holidays. Whatever claims are made for the richness of formal experience, and its inner meanings, are every bit as true of functional experience. No one should be allowed to suggest that it is somehow less ‘poetic’ or less connected to our inner ‘life-world’ (Husserl 1970).

And, as before, functional experience involves all the senses.

Space

Every space in a town or inside a building has formal properties which our senses tell us about. And in each space something is going on – actually or potentially. But there is something else about each space: it is in a spatial structure in relation to all the surrounding spaces. It is next to some, far from others – not in the sense of physical distance but in the sense of being separated from them by few or many others. On entering a building some spaces are immediately accessible, others only by passing through numerous intermediate spaces. The former are ‘shallow’ with respect to the entry point, the latter ‘deep’. The route to some spaces leaves no choice. Others can be accessed by two or more routes – we can choose between them. Topologically the former lie on tree-like structures, the latter on rings. In fact all these are all topological relations, not the geometrical ones of distances, shape, or proportion, nor that of style. And to absorb spatial information we use all our senses.

In this context kinaesthetics – the sensation of movement – is significant too.

A whole range of graphical techniques, based on adaptations of topological graphs, and precise methods of description and measurement, are available. Most of them originate in the work of Hillier and Hanson (1984) and their colleagues at University College, London. No matter how abstract the graphics or the measurement techniques may appear, they describe concrete, everyday experience. The experience of bodies in space is as universal a defining property of what it means to be human, as is that of language. There is no a-spatial society; and equally since all space carries information on social relations, there is no a-social space.

In archeology all this is more obvious. First, because the material traces are so sparse, and secondly because normally there are no written texts. There are forms – geometry of room and town shapes, ornament, physiognomy of surfaces. Secondly there are signs of function – tools, remnants of food, household implements, sacred shrines or burial places and weapons. Thirdly the spaces are connected and divided from each other within a structure. From all this evidence the archeologist pieces together a picture of what happened: who did what, with whom, when, why. In other words a picture of the productive and social relations. Deciphering a modern building is really no more than an exercise in living archeology, with the extra difficulty of coping with much richer evidence, which sometimes makes it difficult to see the wood for the trees.

Language and class

Underlying the language categories is a very simple notion: buildings are primarily objects of use. They are *for* something. So the key words are about use, function. These labels work at all levels of space; the surface of the globe, world regions, zones, cities, buildings, spaces within buildings, and small activity areas. For entire buildings – ‘hospital’, ‘school’ or ‘museum’; for individual spaces – ‘ward’, ‘classroom’ or ‘shop’; for activity areas – ‘nurse’s station’, ‘map table’

or ‘counter’ – they work unambiguously. They are drawn from a lexicon itself hierarchically arranged. The categories within the lexicon make up the classification system. A great deal of anthropology and linguistics is about the way classifications form people’s world view. Unfortunately little of this has rubbed off on architectural theory.

I have briefly examined (1987) how buildings work as classifying devices. It is easy to see that prescriptive texts such as briefs and design guides use classes of space. In important ways, since such classifications determine the types of space and their relationships in terms of clustering, they ‘design’ buildings before a designer is involved. This is most evident in buildings such as art galleries, museums and libraries which house strongly classified collections. But it is present in any building. A factory is defined in terms of production space (for blue collar workers), office or control space (for white collar workers), sanitary, eating and recreational spaces (probably sub-divided by the kinds of personnel who have access to them), and visitors’ spaces. This map of industrial relations is translated into material forms.

Up to, roughly, the mid-eighteenth century form, function and space cohered in such regular and predictable ways that the giving of a functional name to a building raised no problem because that also identified the formal expression and spatial structure it was expected to possess. We shall see how the fragmentation occurred. For two hundred years naming has become increasingly problematic. By intuition or the use of meticulous analysis we now struggle to re-establish some coherence. But not with much success. If we are told that we are about to visit a school, we would make no assumptions about what formal – stylistic or geometrical – or spatial experiences to expect. Nevertheless we hang on to functional rather than any other labels; the intention to visit a building is still announced by ‘school’ rather than by, say, a ‘slightly post-Modernist’ or a ‘deep, tree-like’ building! So even though the links open endless possibilities

*General View of the Plan of Classification, and of the Distribution of the Classes in the GLASGOW
LUNATIC ASYLUM.*

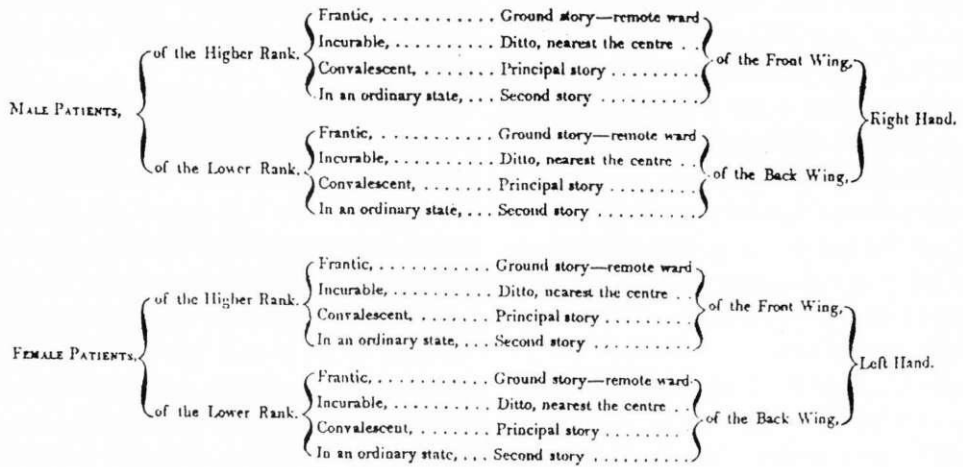


Figure 1. Glasgow Lunatic Asylum (1807). Stark's diagram of the brief.

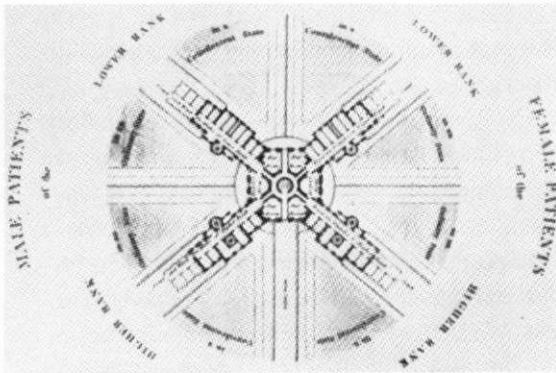


Figure 2. Glasgow Lunatic Asylum (1807), plan.

of conjunctions, functional labels are so securely bound into social relations that the possibility of using any other is never even contemplated.

I have looked at several cases of the way classifications work. One (1982) is William Stark's 1807 design for Glasgow's lunatic asylum. The doctors and sponsors gave him a brief in which patients were categorised by three systems,

applied hierarchically. First, by gender – male and female. Second by economic class – 'higher' and 'lower rank'. This meant the ability to pay a fee or being a pauper patient. And third by the standard medical diagnostic categories of lunacy of the time – 'frantic', 'incurable', 'convalescent' and 'in an ordinary state'. This in essence described the distance between a patient's condition and his or her ability to return to a productive state. Stark set out these 16 classes on the lefthand side of a diagram, which in fact forms an abbreviated brief. In a symmetrical righthand side he mapped the location in space of each class, in terms of floor level and distance from the centre (Figure 1). The idea of a central controlling and surveying point was implicit in institutional design at the time and Stark simply made it explicit. The fact that the final building had a four-armed radial plan and had a dome over the centre (Figure 2) is no surprise; it could hardly have been anything else once the brief had been set out in the way it was.

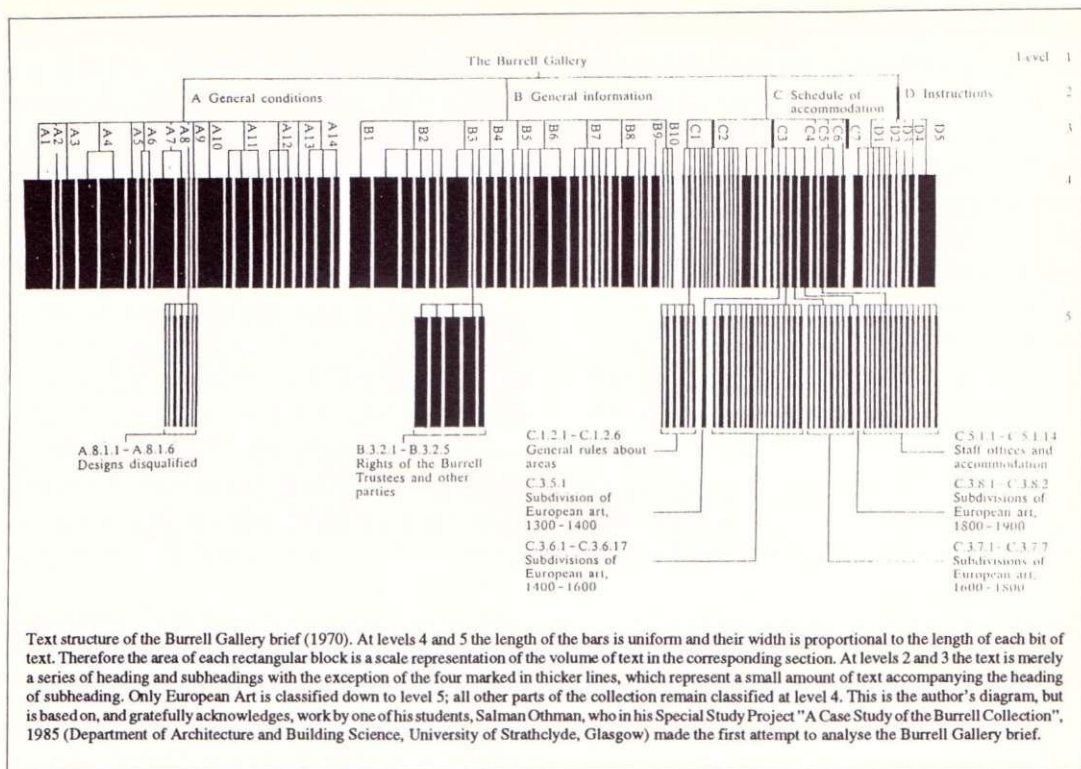


Figure 3. The Structure of the Burrell Gallery Brief (1970).

Another case I have examined (1987) is the competition brief for Glasgow's Burrell art gallery (1970). If the text is drawn so that each block is represented by a rectangle whose area is proportional to the volume of text, and whose level is the result of the hierarchical division of the text by headings, subheadings and paragraphs, the diagram in Figure 3 is obtained. Only three sections go to its deepest level. One defines the entries that would be excluded; another the rights of the Trustees and other parties; and the third contains that part of the collection which is European art classified by period and place of origin. Despite 242 entries, which had of course a huge range of formal solutions and spatial structures, all of them had the same set of spaces, to house the same groups of objects. And all had provision for the reproduction of three key rooms of the donor's house – Hutton Castle – as demanded by the brief. The text and the building embodied both a particular version of art history

and a particular view of the relation between the private collector and art objects.

In their entirety, and in their parts, both the asylum and the gallery are clearly recognisable types, and this is evident in the prescriptive language used about them. How do we obtain meaning from the rich experiences they create?

Meaning

If form, function and space were related to each other in some immutable way then the problem of meaning in buildings would be quite simple. One would merely have to discover, by use, the rules of this immutable relationship. Once learnt, the unified nature of the experience would always lead to unambiguous and clear meanings. For those constructing a theory of architecture the task would also be simplified into articulating the rules. Sullivan's 'form follows function', apart from the fact that it misses out space entirely, would have the makings of a theory, of a practice

and of an explanation for daily experience. Unfortunately the world is not like this, and never was.

Though up to the Enlightenment it *appeared* as if there was such a 'natural' system of internal relations within architecture. The social relations which determined what was built were those of a relatively homogenous and dominant class. It specified the briefs for buildings, provided the land and resources for producing them, managed them, controlled the publications of and for architects, as well as their education and, on the whole, provided the recruits to the profession. Moreover the types of buildings were few in number, and their functional requirements changed very slowly. Because the meaning of buildings was self-evident and unproblematic, it was possible to use this as a model of 'architecture' and to make the claim that the meaning arose from an internal, coherent discourse, without the need to refer the properties of buildings to any other field.

Paradoxically, the Age of Reason, which defined itself in terms of bringing the power of reason to clarify the world, shed obscurity rather than light. The American, French and industrial revolutions completed the fragmentation. In less than a century from 1750 buildings and towns changed almost beyond recognition. There was an explosion of new building types (a term which remains to be precisely defined), briefs became much more explicit and complex in response to new social relations and functions, new technology and legislation, and architects entered the profession from a wide variety of class backgrounds. It was no longer safe for a client, or sponsor, to assume anything about the outcome of a commission. Nor was the Classical system any longer an inevitable choice – not only did Gothic and the 'battle of the styles' open other possibilities, but the new technology of iron and glass, and of services, even put a question-mark over the very notion of 'style'.

The real fragmentation was in the discourse of architecture which had seemed so stable and coherent. It became apparent that form, function and space were independent of each other. A

school could be and was Classical or Gothic; and it could it have a deep, tree-like spatial structure or a shallow, ringy one. This gave designers much greater freedom, but, at the same time presented users with a baffling set of experiences. It was no longer possible to say, unambiguously, from the formal (stylistic) features, or from the spatial structure, what a building was *for*.

To answer the question 'what is the meaning of this building?' – in its totality, taking all of its properties into account – was now only possible by referring each property to a common field. And the only field which directly relates to everyday experience is that of social relations. These occur at three levels – though it may be argued that two of these stretch the meaning of 'social' too far.

The first is the relation of self-to-self. It is the kind of relation which answers Gaugin's age-old questions – 'who am I?', 'where have I come from?' and 'where am I going?'. There is much about all the properties of buildings which help to answer such questions; in other words, which help each of us to discover ourselves. Only if the experience of a building and of everything that goes on in it makes no impression at all, if, after using it, one is in *no* way changed, is this not true.

The second relation is 'social' in the ordinary sense. Here we are in the traditional area of the social sciences, concerned with structures, roles and power distribution. As a social being, from infancy onwards, I develop and grow in such social relations. So the separation between the first level and this is not so hard-and-fast – for it is in relating to others that I become myself.

The third level is concerned with relations to structures of a more durable, and abstract kind. Here the field of belief systems and ideology is the focus. We are concerned not with others but with myths and the cosmic Other, be it formulated in explicitly religious or numinous language, or in that of Reason, Art, History, Justice, Nature or Science.

To Marx it was the denial of these three levels of relation which was of interest: alienation from self, others or Nature (the only 'Other' which

had a material presence and which could therefore be admitted into his perspective) which occur when the power relations of capitalist modes of production shape society.

Everything about forms, functions and space carries meanings at each of these three levels of relation. We experience the forms chosen by a client or sponsor – and inevitably because of the organic link between resources and power, these are the forms of a dominant class. Functions and space are prescribed and controlled to reproduce the same power relations. It is feasible, and necessary, to analyse these properties of buildings in terms of social relations. What will be found is that all these are facets of power. They describe the way finite resources – of money, land, information, energy or control – are distributed. It is a zero-sum game – more here is less there. The cake is sliced into segments of various angles. Such cake-slicing can be symmetrical or asymmetrical; the critique of power is justice.

But there is another kind of human relation which in many ways is the inverse of power. Gorz (1989) calls it 'subversive' for it undermines all forms of contract, structure and obligation. He cites the mother-infant relation as its best known form. Justice does not enter into it. Poets and theologians speak of love; in everyday life we experience it as friendship and in politics as solidarity. The stronger the relation between two individuals or within a group, the more there is to give away. 'Bonds' seems to be an apt description. And just as form, function and space speak of power, so they do of bonds.

In Figure 4 this argument about meanings is developed step by step. Each of the (three) properties of a building are mapped into a field called 'social relations' (SR). That represents the world of power and bonds at its various levels, which each of us knows both as a socially constituted being and as a person with an inner, and unique 'lifeworld', which, though it has grown *within* the framework of evolution and genetics, and the cultural and environmental forces of our own material history, is not constituted *by* it. The boundaries of this field can be extended by lear-

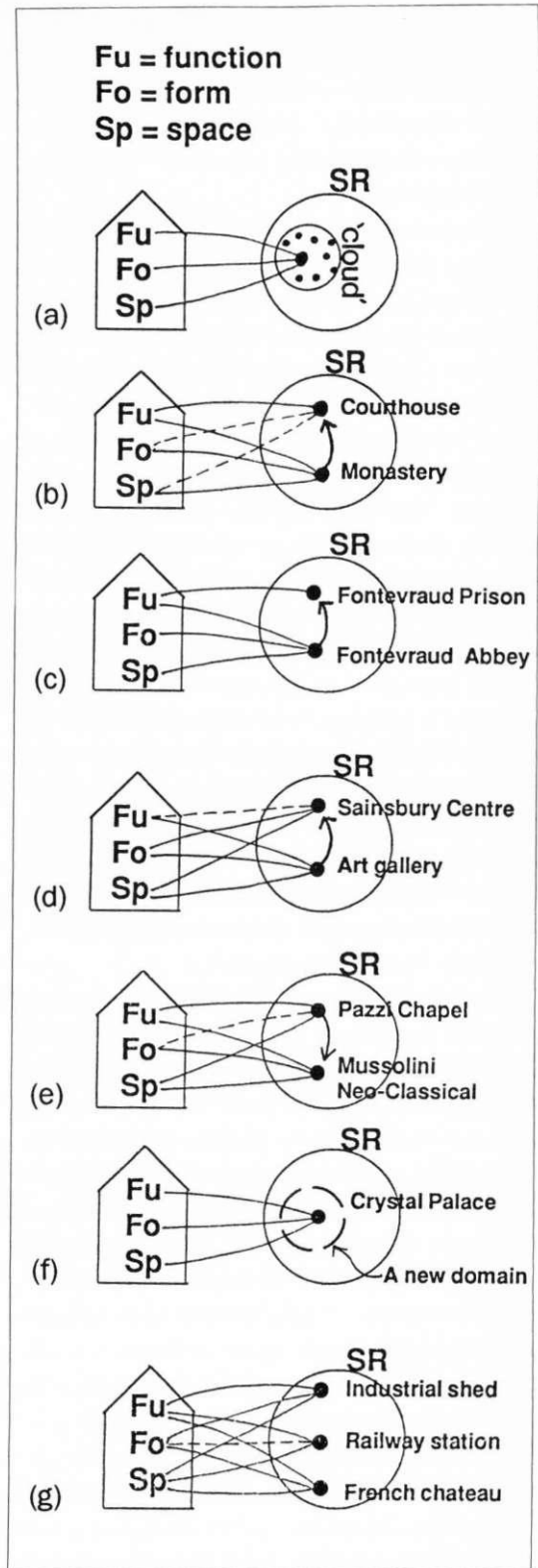


Figure 4.

ning and analysis. *It is in social relations that meanings are found.*

If a building in its totality carries a meaning it does so because the meanings of its individual discourses converge to a point in the domain of social relations.

This point is located by everyday use and by everyday function-language created and shared by a using and speaking community. That such a point is unique to an individual is the result of their inner 'lifeworld'. But that it shares a common zone with others – so we can speak of a 'cloud' of points in this domain – is the result of belonging to a community (a).

Up to about the middle of the eighteenth century the meanings of form, function and space converged in a regular and predictable way, without ambiguity. A Renaissance prince's town palace, a church, or a market had forms and spatial structures which were understood and accepted as appropriate for each of these uses. As a result of the fracture already described, a whole range of formal solutions became possible and the traditional spatial structures were no longer reproduced without question. Above all the new social relations demanded all kinds of new types – created by aggregations of earlier ones, or disaggregation and specialisation.

The new freedom which the fracture made possible worked in several ways, which are usefully considered through six historical cases showing how meaning changes – that is how it moves around in the domain of social relations.

The first case is the dramatic narrative such as the conversion of a medieval monastic church into a new Tribunal in the Revolutionary France of the 1790s. The shift of function to a new use, representing new social relations with new meanings, 'drags' form and space with it to a newly convergent point. The fact that the church may continue to carry echoes of the worshipping, liturgical community might serve a useful ideological purposes for the new State. But it is seen as a new place. The meaning of its forms and spaces is transformed and the word 'courthouse' adequately defines it (b).

The long tradition of Classical forms had made them adaptable to many places and for many uses. This freedom now became a feature of other formal languages. Existing medieval forms are not only adapted to a range of new uses, but inspired new, equally adaptable, versions (Gothic Revival). And as new formal languages developed, right up to twentieth century Modernism, they were seen as usable universally, for any function.

The freedom to design for a given use in many ways creates another 'cloud' in the domain of meanings. Just as a community of individuals can share meanings in a 'cloud', a given individual may assign a whole range of different buildings the same meaning, inside a 'cloud'. For instance we can read all kinds of buildings as a library.

The second case is that of another change of use in this period – this time also accompanied by material changes – the conversion of the ancient abbey of Fontevraud to a prison. When such a splendid building is used for a squalid or oppressive purpose, the meaning of its function may refuse to converge with that of its form and space. That is another way of saying we find it difficult or impossible to accept that this is a prison. There is a contradiction, which is measurable by the distance between two or three points in the domain of social relations. Things are not what they seem or feel to be. In extreme cases such a gap is sensed as bizarre or meaningless; in less extreme ones as simply puzzling and destroying the sense of feeling at home (c).

When someone's words, facial expression and gestures are contradictory we respond in much the same way. Modern drama has exploited such contradictions on stage as a way of probing everyday relations, not as a model of what they should be off-stage. There is certainly room for such creative experiments in architecture; but once everyday urban experience becomes as alienating and bizarre as this, the experiments cease to be of any significance.

In the third case the power of form and space is used to redefine completely the meaning of a

traditional function. The use of forms derived from the high-tech imagery of industrial buildings and machines, and spatial structures derived from the supermarket in the Sainsbury building at the University of East Anglia, makes it possible to redefine art objects as commodities in an industrial-market economy. In another case, the placing of a community of university scholars into a building with the deep, tree-like spatial structure of an institution, makes it possible, despite the rhetoric of creative intellectual freedom, to undermine the community's traditional function by introducing features associated with surveillance, control and absence of communication (d).

The danger of the new freedom is precisely that such innovatory and often highly exhilarating designs do not seem to be contradictory; the buildings redefine social practices by assigning them new (and seemingly coherent) meanings which are hard to reject without analysis. Not surprisingly their sponsors work hard to block analysis. Of course the contradictions, whilst intentional, are not calculated. And neither are the three blocking strategies each, in a different way, focussing on the formal discourse:

One strategy, whilst rightly stressing the independence of the discourses, also insists on their autonomy. Venturi's (1966) 'complexities and contradictions' and Derrida's and Tschumi's 'deconstructions' (Derrida 1986: 65-75) are two recent attempts to make this theoretically respectable. The unease, the contradiction, dislocation and historical cannibalism are not seen as defects but as the authentic experience of post-industrial society. Form is autonomous, free of functional connotations. Function is trivialised to a technical-utilitarian definition which, since it is self-evident, can be contained within the boundary of architecture'. Neither needs analysis in social relations. But function-labels are still used.

Another insists that the form-function link still has the same strength, internal to architecture, as it possessed in the old tradition. Function is treated in the same way as in the first strategy

and since this offers little scope for criticism of any depth – it is its concomitant, form, which absorbs critical energy.

The last strategy is to define architecture by the single, dominant and autonomous discourse of form. In architecture-as-art function effectively disappears.

In none of the three does space (in its structural sense) appear.

It is language that saves the day and prevents these three strategies from succeeding. In the first two, since the functional labels still used, based on everyday use and parts of everyday language, cannot fail to point to our social and 'lifeworld' relations. This undermines the trivial definitions of function as well their autonomy. But the relations between the three discourses may appear so random that we may give up the struggle and simply learn to live with multiple, even contradictory meanings. Or we may cling, despite constant disappointments – despite things not being what they seem to be – to the promise which the second version holds out that the stable form-function link is still in place. The third version – that buildings are imply art objects – despite Prince Charles and the massive efforts of the profession, does not seem to carry conviction yet. Few people, if asked where they had been, would answer 'I was in a swirling Baroque space' or '... in a high-tech red cube' (shades of Parc de la Villette).

But to return to the cases; the fourth shows how meanings may become contradictory unintentionally. The destruction of the harmony of the Pazzi Chapel, for the generation which lived through Mussolini's régime and his use of Classicism, may also have created for it a contradiction which simply cannot be eradicated. For that generation the forms carry meanings which will never again converge with the meaning of a civilised use such as a school or theatre (e).

In the fifth case a radically new function generates an equally new formal language and spatial structure. The meanings, astonishing as they are, converge, but in a new place in the domain of social relations. Something quite new is being

said. The Crystal Palace did this for machinery, nature, art and labour relations (f).

The new juxtaposition of two previously clear and unambiguous types represents the sixth, and final, case. The Classical or Gothic facade building hiding the engineering shed behind, which reached its epitome in St Pancras Station with Scott's French chateau hotel and station offices in front of Barlow's great shed, is an example. At first the combination was contradictory, non-convergent. But it came to be accepted as the very essence of the type 'railway station'; so much so that when, in the same year as the Crystal Palace was built a rare case occurred where the shed was exposed at the front – Cubitt King's Cross – this came to be seen as atypical. The contradiction here was not between two discourses, or two different types, but between one and an absence, a void (g).

It should be clear that coherent meaning in a building is no guarantee that this will be a cause for rejoicing. We are as likely discover oppressive or asymmetrical relations as ones which give us a dignified place in a just process, enlarge our 'lifeworld' or support the formation of bonds. All we have avoided is 'gibberish'; as with spoken language, there is no reason why the truth should be palatable.

For buildings to have clear meanings, we need to be able to place each unique experience into some kind of framework, a structure which makes sense at a more general level. This is what 'type' does.

Type

The form-function relation was taken for granted in the Renaissance. Type was unambiguously that of function, and theory simply expanded on social and linguistic aspects. Alberti for instance says that society is stratified and that each class of people '... should have designed (for it) a different type of building' (1980 ed.). Thus some buildings were suitable 'for society as a whole', others only for its 'foremost citizens' and yet others only for 'common people' (a classification

which is repeated almost *verbatim* by Le Corbusier 500 years later when he describes the three classes of inhabitant and the buildings suited to them in his City for Three Million People). He goes on to describe the basilica in terms of its original function as a 'covered assembly room where princes met to pronounce justice' with an apse or *tribunal* and porticos added to 'give it greater dignity'. This description links ancient use, language labels and spatial articulation into an archetype. Alberti distinguishes a range of artistic, sporting and entertainment functions in another ancient type – the theatre – each of which '... requires a different building ... each with a different *name*' (my emphasis) such as 'theatre', 'circus' or 'amphitheatre'. Each is given its specific plan form and appropriate Order.

By the eighteenth century one can sense that there was deep anxiety about the threat that function and form might become separated. Blondel (1771–77) develops a whole theory, based on a biological analogy, of *genres* of buildings – such as factories, colleges, military buildings, hospitals, mints, baths, vauxhalls and fountains – each of which achieves its 'own manner of being, suitable for it alone, or those of its kind', by matching the *genre*, pairwise, with the appropriate *charactère*. Examples of the latter are 'male', 'frivolous', 'rustic', 'light', 'naive', 'terrible', 'uncertain', 'vague', 'masculine' and 'cold'! A key discussion for each genre is the appropriate Order; very few plans are given (though some are briefly described) other than for town and country mansions, churches and gardens. The final outcome of this thinking was the neo-Classical *architecture parlante* which, through analogy and metaphor, expressed such functions directly in a language of forms.

There are still those who cling to the hope that form and function are this closely related. The most serious attempt to develop the theory of this hope has been made by semiotics, though as Lefebvre points out (1974) Vitruvius had already been there: 'in all matters, but particularly in architecture, there are these two points: the thing

signified and that which gives it significance. That which is signified is the subject of which we may be speaking; and that which gives it significance is a demonstration on scientific principles'. Vitruvius developed a full lexicon of elements, a syntax for their combination and a style manual based on the Orders.

Eco (1986) identifies five codes in architecture – (i) based on engineering technology, (ii) syntactical, based on plan forms, (iii) semantic, which consists of words describing function, (iv) social utility – ‘ideologies of inhabitation’ (which are function labels for individual spaces) and (v) a ‘sociological’ typology for entire buildings. He says that the architectural codes are strictly limited by ‘social exigencies’ – only there can genuine innovation occur, and it lies outside architecture. At first sight this seems to be the argument I have been making for mapping the properties of buildings into social relations. But he then denies architecture any possibility of autonomous forms – ‘a system of pure “arrangement”’ such as, he says, exists in poetry, painting and music. It is only when forms are transformed into social signs that art become architecture.

This then makes a double statement. He asserts that the ‘pure arrangement’ of art forms is autonomous – it does not need to be referred to social relations. And he asserts that architecture, precisely because of this narrow first definition, has no possibility of genuine innovation. He thus misses a great opportunity, which for a moment opened up – to find a framework to accommodate all creative activity, denying none of them

freedom but, at the same time, granting none of them total autonomy.

For those who no longer hope to re-establish the form-function link, another possibility exists: to affirm that one property alone, that of form, has meaning. Buildings are then a kind of large public sculpture; whatever function they may have can be described in simple utilitarian terms and is self-evident. Moreover it is an accident. First Venturi (1966) and later the Deconstructionists have attempted to provide a theoretical basis for this affirmation.

The map of social relations is multi-dimensional. Characteristic dimensions might be: power-bonds; closed-open; constrained-free; hierarchical pyramids-non-hierarchical nets; centipetal-centrifugal; co-operative-competitive; conforming-subversive; traditional-innovative; tightly defined-loosely articulated; productive-existential; local (and spatial)-global (and transpatial); insitutional-negotiated; or central-peripheral. Using such dimensions a co-operative workshop may be nearer, typologically, to a community broadcasting station than to a factory, and the factory to a military barracks, despite the machinery and production processes in the workshop and the factory being identical.

A typology based on relations is not yet within reach. It will not be till ordinary language and daily experience are tuned to it. In the meantime, for design purposes as for others, language remains the one secure anchor, even if it has to struggle with the fragmented chaos that surrounds us.

NOTE: This paper is based on a chapter in a forthcoming book Building Types and the Ordering of Space, eds. K. Franck and L. Schneekloth, Van Nostrand Reinhold, New York, and on a Chapter in Buildings and Power, to be published by Routledge, London. The permission of both publishers to use it here is acknowledged with thanks.

Thomas A. Markus, Emeritus Professor of Building Science, University of Strathclyde, Glasgow; Jubilee Professor at the School of Architecture, Chalmers University 1992–93.

References

- Alberti, L. B. (1980), *The Art of Building in Ten Books* trans. J. Rykwert & R. Taverner, Cambridge, Mass.: MIT Press.
- Blondel, J-F. (1771–77), *Cours d'Architecture ... donnée en 1750 et les années suivantes*, Paris.
- Derrida, J. (1986), "Pointe de Folie – Maintenant l'Architecture; Bernard Tschumi: La Casa Vide – La Villette", *A. A. Files* 12: 65–75.
- Eco, U. (1986), "Function and Sign: Semiotics of Architecture" in Gottdiemer, M. & Alexandros, Ph. L., *The City and the Sign: an Introduction to Urban Semiotics*, New York: Columbia University Press. (First published 1969).
- Frankl, P. (1914), *Die Entwicklungsphasen der Neueren Baukunst*, trans. J. F. O'Gorman, (1969) *Principles of Architectural History: the Four Phases of Architectural Style, 1420–1900*, Cambridge, Mass.: MIT Press.
- Gorz, A. (1989), *Critique of Economic Reason*, trans. G. Handiside & C. Turner, London: Verso.
- Hillier, B. & Hanson, J. (1984), *The Social Logic of Space*, Cambridge: Cambridge University Press.
- Husserl, E. (1970), *The Crisis of European Sciences and Transcendental Phenomenology: an Introduction to Phenomenological Philosophy*, trans. D. Carr, Evanston, Illinois, Northwestern University Press.
- Kouwenhoven, J. A. K. (1982). "American Studies: Words and Things" in T. J. Schlereth (ed.) *Material Culture in America*, Nashville, Tennessee: American Association for State and Local History, Chapter 2: 79–92.
- Lawrence, D. L. & Low, S. M. (1990) "The Built Environment and Spatial Form" in B. J. Siegel, A. R. Beals & S. A. Taylor (eds.) *Annual Review of Anthropology*, 19: 453–505.
- Lefebvre, H. (1974), *The Production of Space*, trans. D. Nicholson-Smith, 1991, Oxford: Blackwell.
- Markus, T. A. (1982), "Buildings for the Sad, the Bad and the Mad in Urban Scotland 1780 – 1830" in T. A. Markus (ed.) *Order in Space and Society: Architectural Form and its Context in the Scottish Enlightenment*, Edinburgh: Mainstream.
- Markus, T. A. (1987), "Buildings as Classifying Devices", *Environment and Planning B*, 14: 467–84.
- Summerson, J. (1964), *The Classical Language of Architecture*, London: Methuen.
- Venturi, R. (1966), *Complexity and Contradiction in Architecture*, New York: Museum of Modern Art.