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I want to address the principles and design techniques of surfaces. I will slice through several projects very thinly and focus on surface characteristics rather than on those of volume. Many issues already discussed at the previous conferences are relevant for this, but let me briefly articulate three of them.

The first is the micro-landscape of form and material in total design. The interplay between the light qualities of texture and the visual sense of surfaces and volumes of architecture is one that is not traditionally studied. In the total design of the surface of a project, it is with points and flat surfaces that there is a reductionism, purity, and expansion of every possible surface. Actually, there is no one who is more interested in something contemporary and experimental than in the world with surfaces, in that one can have early detection. For example, an athletic shoe with surfaces that when a plan and section, this also implies a conjunction at the level of tools, with other areas of design. In any case, architecture shares techniques with other fields and can more freely migrate into other disciplines. Inevitably, when this happens, the other disciplines are carried back into architecture. So to further the analogy, we might be able to design the doors for our occupants, and thus extend the idea of the architecture that encloses them.

Second, issues of mass and variation have been discussed. Due to the needs of both change and continuity, products demand a constant identity in media culture and at the same time accelerated degrees of variation and change. This problem is a marketing and mass production phenomenon and is provocative to architecture—a design field based on timelessness and uniqueness rather than production and development. Contemporary identity must be both stable and fluid. In the world of products, unlike architecture, as we understand it, there is a need for techniques of variation and identity.

The third discussion occurring at this conference is a theme that links the first two. The scope of design is expanding as more and more of the world is being designed. There will be an increasing need for architects to interface with design and manufacturing. Here the term ‘architect’ is expanded to describe not only building design but also the management, invention, and conceptualization of production and assembly processes. To relate to the discussion of athletic footwear, one could then need an architect to design a pair of shoes. This is distinct from having a cobbler make a pair of shoes because it involves customizing a generic product.
Nike", "Adidas", "Puma", "Converse", and perhaps even Prada could turn to professionals resembling architects to control the color, shape, materials, and dimensions of their product lines to direct contact with consumers. As an increasing number of products are designed in a generic fashion, with an increasing number of options, soon there will be a need for architects at car showrooms, fashion boutiques, appliance stores, etc. In order to organize these types of processes, there will be a parallel need for new techniques of managing variation and identity.

One of the many uses of surface is for the production of special effects. This is related to a shift from typology, which is fixed, to traits, which are variable and interchangeable. Special effects not only imply film techniques but also the addition of features and contours in a surface continuum. Traits can be manifest without regard to the typologies in which they occur.

This discussion that I have prepared unashamedly focuses upon style. Unashamedly because I blame Willy Maas, who at the Architec conference in Athens accused me and several of my fellow protestors of constituting a "neo-Jugendstil," or perhaps a "new art nouveau" or even a "new Secessionism." I think Willy voiced this accusation as an extreme condemnation, but I found it enlightening. The Jugendstil, the art nouveau, and Secessionists' styles are often portrayed as premodern. Occurring at roughly the turn of the century and involving new technologies of production and design, the Jugendstil is interesting to examine in light of the transitional character of these germano-avantgarde, such as Secession, Jugendstil, and others argued that these styles were modern in two senses: first, to the extent to which they rejected classical orders in favor of the abstraction of nature; and second, for their use of new techniques for production and fabrication. An instance of the abstraction of nature would be both the vegetal abstraction of nature linked to Louis Sullivan's "bird germ" studies by the Brussels School and the essential abstraction of surface and skin by the Viennese Secessionists. Despite these modern interpretations, Secession and Jugendstil exclude these transitional figures from the avant-garde in part because of the use of these new technologies for ornamentation and the decoration of surfaces. But their primary reason for excluding art nouveau--Secessionism, and Jugendstil was that the designers behind these movements were seen as architects of surface rather than as architects of space. The dichotomy between volumetric decoration and space/surface was, however, naively for...
mutated. The progressive increase in the use of design and fabrication technologies based on a geometry of reflected surfaces suggests a new spatial sensibility rather than the disappearance of spatial realities altogether. Today, surface and space are no longer opposed to one another; volume and envelope are being formed through the manipulation of continuously curved surfaces rather than through volumes defined by discrete points. In other words, Winy’s critique can hold for a number of contexts: yes, there is a renaissance today with the premodern interests in industrial fabrication, in decoration, and in surface. But I disagree with him in one important sense: that the work of Bernard Tschumi, Mark Gellbarg, and others is not neo-Joycean, because it treats surface as a space-colocating medium.

Unlike my texts in previous Any conference publications, this discussion focuses more on the disciplinary issues and history of architecture than on the medium of surface-geometry tools. The necessity for discipline-specific discussions has already been called for by Rosalind Krauss. This paper focuses primarily on the spatial and material properties intrinsic to architectural design that emerge from the work of topology, and not on the mathematical and philosophical issues inherent in digital surface design itself. The first task is notice in an architectural surface — rather than in a point-based volume — that surface tends to be continuous, in the sense that it is curved and reflected. Surface can also warp; they can stretch and shrink. They can aggregate; they can disperse; they can coalesce. These five spatial effects emerge from the unique problems of architectural design and the need to enclose space while allowing visual and physical transparency, movement, and modulation.

The first example of these spatial effects of surfaces is that of aggregation. For the Korean Presbyterian Church in New York, a project designed in collaboration with Michael Maltzan and Douglas Sanders, we generated massing and volume through the blending together of a collection of bubble columns. The properties of this type of modeling produce a continuity of envelopes with distinct bodies, or features that are the residue of the generating primitive volumes. In order to make the view and entry into this continuous form we employed a technique of offset surface layers. The first instance of this surface effect is in the outdoor entry, where movement into the building occurs through what is a seemingly closed volume due to the overlapping panels. Movement in the other direction, out of the building and...
down the stair, reveals the openness rather than the overlap between lowered surfaces and provides a modulated flicker-effect of views toward the planes of Manhattan. The trait of lowered surfaces is their ability to orient motion and view through overlap and alignment. Similarly, in the interior space of the sanctuary, the directionality of the volume is conditioned through manipulations of surface rather than volumetric forms. There is no point on terminal point in the space, but there is a general drift organized by the differential offsets of the ceiling and wall. Any view from the altar toward the seats yields a converted volume, ceiling, and wall surface, arranged to provide slits of frontal surfaces, blind and drop-poor toward the middle of the space. When one looks from the seats toward the altar, those seats smooth out a roof overlap, so that a volume exists only, the ceiling and wall (offset) approach a more overlapped, blind wall of light. A rotary movement around the space transforms the interior from a continuous through space to a flicker surface of segmentation. Another quality of the Korean spatial effect caused by manipulations of surfaces in a manifestation of space that is by definition volume. There is no point or location, just a blurred directionality and dominant orientation. The transition between looking forward and looking back is a gradient and not a line or edge.

These space effects are also evident in the design studies we made for an unbuilt house project, where the relationship between surface, ornament, and structure emerges through the bending of tubular surfaces, producing curvilinear pockets and volumes. The intersection of tubular surfaces through torsion captures volume in pockets, crevices, forks, bends, and elbows. A similar spatial effect of surface deformation is standing, where surfaces are shifted along their controlling curve, called seams. By bending a surface along its length and in different directional grains, biases and simulations can be defined. Similar to the effects of a point-based grid, standing is an organizational technique that is spatially modular. Unlike a grid of points, this modular standing occurs through the splitting and bending of a surface.

Both the installation in the Encaustic gallery, Brussels, and in the H2 House Visitors' Center in Vienna use bidirectional shingles to produce flower effects much like those in the church but through the torquing of surfaces. In the upper sections of these surfaces there are openings  located at one direction, while on the lower sections the orientation flips to the other direction. A
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the previous century is an installation that I am working on at the Secession Building in Vienna with the painter Fabian Marcaccio. Fabian and I are both interested in the fusion between surface and figure, so we began this installation with a mutation and regeneration of the famous cabbage dome of Joseph Maria Olbrich's building. The cabbage dome is a primitive that we duplicated down the face of the building and into the gallery space, letting it drift through the building while痤voiding a surface that became the volume of the installation. I would attribute Wim Wenders with putting his finger on something here, which is the fusion of ornament and structure through techniques of surfaces rather than through mere decorative techniques. In this existing building it is important that the surface belongs to neither architecture nor painting. We articulate the surface of our installation as a painter's canvas and manipulate the ornament of structural frames. The specificity of architecture and painting is maintained. It is clear that this is not just making a painting because it is clear that Fabian is nowhere near designing a building. The way we are working with juxtaposition means of surfaces of pictorial activity and spatial activity, and we are collaborating to produce a set of flowing effects in space. If you were to ask Fabian to present the project, he would say it was a giant painting. When I present it, it is architecture. For both of us, it is an interest in the ability of modulated surfaces to create special spatial effects.

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Embryologic Houses Project.