

Political Materialism

Before delving into a political argument, I should probably admit to a suspicion of political ideology that goes beyond its application to architecture and most likely has a biographical origin. My experience of Spain's transition from dictatorship to democracy left me with a rather cynical view of political ideology as an effective tool for understanding or transforming reality. I was born during Franco's dictatorship, and I remember having to learn to vote at school – one of the new protocols of the new democracy. As a left-leaning adolescent, I longed for the Western powers to intervene against Franco's dictatorship, a desire that came back to haunt me 30 years later when pondering Western intervention in Iraq – a far worse dictatorship and in a far more globalized world. In Spain I watched Javier Solana, then minister of culture under the Socialist government, campaign for Spain's entry into NATO, and then saw the termination of compulsory military service by Aznar's right-wing government – which the Socialist Party opposed – confirming my worst fears about political ideologies.

On the other hand, I also witnessed the subversive effects of foreign tourism on sexual behavior during Franco's strictly Catholic era as well as the positive impact of low interest rates, home ownership, and massive infrastructure construction on social mobility. Finally, the demise of the Aznar government in 2004, brought down by text-messaging, convinced me of the deeply transformative political potentials of seemingly innocuous technological and economic processes.

If there is a lesson in the current American presidential campaign it is precisely that an all-encompassing mass politics focused on class, gender, race, creed and identity and built upon partisan ideologies is less effective than a more nimble molecular politics capable of engaging independent swing voters, who are soon to become the largest segment of the electorate. Likewise, contemporary political agencies can be found in the most pragmatic, concrete operations. Despite having become a crucial political battleground, architecture and urbanism appear to be unable to find a role within these new politics.

Architects' traditional role as visionaries (and ideologists) has become redundant as the sheer speed of change overtakes their capacity to represent politics ideologically. Visionary formulations pale in the face of reality's complexity: an ideological position devoid of a close link to actualization and corporeality will remain disempowered. *Paper architecture*, for example, has lost its effectiveness as a political vehicle; like *utopia*, it is restricted to pure representation without the attachments and frictions capable of politicizing matters. In order to guarantee a minimum level of agency, architects need today to engineer their acquisition strategies, procurement routes, etc., to sustain a necessary level of engagement. And those decisions become an integral part of the architectural project.

Within this context it is vital to produce an updated politics of architecture in which the discipline is not merely reduced to a representation of ideal political concepts, but conceived as an effective tool to produce change. Rather than returning to ideology and utopia, a contemporary politicization of architecture needs to relocate politics within specific disciplinary domains, not as a representation of an ideal concept of the political, but as a political effect specific to the discipline.

A unilateral politics of resistance is no longer able to challenge contemporary forms of consolidated power. The challenge to instituted power can only be selective, and the division of political labor has to be addressed by multiple disciplines operating independently and simultaneously and not necessarily in a multidisciplinary relation. For the discipline to acquire transformative agency it is necessary to engage in a political critique of its technologies.

The uncertainty about the current political process is currently provoking a creeping nostalgia for the days when there were coherent political projects that could be described through ideology and represented by utopian visions. Instead, we are excited by the prospect of moving beyond a single narrative of how the world is, or feels, or where it is headed. The attempts to politicize architecture have emerged from the hypothesis that architecture is a "social construct," a cultural fabrication, and an embodiment of political concepts. But architecture is as much a physical construct as it is a social or political one, and to understand architecture as a mere representation of the political is as problematic as it is to declare architecture entirely ruled by the inexorable laws of physics, economics, buildability, climatology, and ergonomics.

To escape from the great revolutionary narratives and their ideological understandings of history, an effective link between architectural technologies and politics needs to be established. It may be good to stop speaking of *power* in general, or of *the state*, *capital*, *globalization*, *empire* in general, and instead

address specific *ecologies of power* comprising a heterogenous mixture of bureaucracies – markets, shopping malls, residential towers, lifestyles, cladding systems, façade ratios, carbon emissions, etc. – and the specific exercises of power within and between these organizations. I have chosen the building envelope as the field that may help us to draw these political attachments to the material world.

The Envelope as a Political Agent

The building envelope is possibly the oldest and most primitive architectural element.¹ It materializes the separation of inside and outside, natural and artificial; it demarcates private from public and land ownership; when it becomes a façade, the envelope also operates as a representational device, in addition to its crucial environmental and territorial roles. The building envelope is the border, the frontier, the edge, the enclosure, and the joint: it is loaded with political content. It is an optimal domain to explore the politicization of architecture and, possibly, the development of a *Dingpolitik*.²

The political performances of architecture have been historically attached to the plan or the section. The plan of the building organizes the power structure and protocols, while the section organizes the social strata and the building's relationships with the ground. The envelope, on the other hand, has been relegated to a mere "representational" or "symbolic" function. The reasons for such a restricted political agency may lie in the understanding of the envelope as a *surface*, rather than as a complex assemblage of the materiality of the surface technology and its geometrical determinations.

The envelope exceeds the surface by incorporating a much broader set of attachments. It includes the crust of space affected by the physical construction of the surface, by the scale and dimension of the space contained, by its permeability to daylight and ventilation, and by its insulation values and solar-shading capacities. It also involves the space that surrounds the object, its orientation with respect to

¹ "The beginning of building coincides with the beginning of textiles. . . . The Wall is the structural element that formally represents and makes visible the enclosed space as such, absolutely, as it were, without reference to secondary concepts. We might recognise the pen, bound together from sticks and branches, and the interwoven fence as the earliest vertical spatial enclosure that man invented. ... Weaving the fence led to weaving movable walls. . . . Using wickerwork for setting apart one's property and for floor mats and protection against heat and cold far preceded making even the roughest masonry. Wickerwork was the original motif of the wall. It retained this primary significance, actually or ideally, when the light hurdles and matings were transformed into brick or stone walls. The essence of the wall was wickerwork." Gotfried Semper, "The Textile Art", in *Style in the Technical and Tectonic Arts: or, Practical Aesthetics* (Los Angeles: Getty Trust Publications, 2004).

² Bruno Latour coined the term *Dingpolitik* to address the politics resulting from the crisis of objectivity triggered by the collapse of modernity and the search for a new model of objectivity in which politics are one aspect of the object, its sciences, and nature at large. See Bruno Latour & Peter Weibel, *Making Things Public. Atmospheres of Democracy* (Cambridge: MIT Press, 2005).

sun, wind, views, etc. The envelope has the capacity to *re-present* the ancient political role that articulates the relationships between *humans* and *nonhumans* in a common world. The envelope is the surface and its *attachments*.

There is no such a thing as a *unitary theory of the building envelope* in the history of architecture. Previous theories of the envelope have basically addressed either representation or construction technologies. Gottfried Semper's analysis of cladding materials and J.N.L. Durand's proposals for an adequate expression of typologies belong to this genre. The Loosian crime of ornament and the modernist abstracted "whitewash" of the façade are also episodes of the politics of the envelope. Colin Rowe's aesthetic critique in "Character and Composition" and "Literal and Phenomenal Transparency" insists on similarly compositional issues. Robert Venturi's return to the decorative and the representational is also a precedent to this discussion, and, of course, there is a large body of knowledge addressed to the environmental and structural performance of envelopes: Fuller, Le Ricolais, Banham... Furthermore, the traditional divide between façade technologies and roof construction has prevented the discipline from looking at the envelope in a more holistic way, as a single object of analysis. Both theoretically and technically, the building envelope has been seen as two separate elements: the roof and the facade.

Like the skin of a living creature, the envelope is the primary actor in the complex process of maintaining *homeostasis* in the building. But in the case of human inhabitation, the skin does not function only on a purely biological level; it protects the building's interior, but also communicates with the external public realm, opening up psychological, political, social, and cultural surpluses. The surface of the building has a double function, engaging with dialectical oppositions: the private and the public, inside and outside... It is a boundary that not only registers the pressure of the interior, but also resists it, transforming its energy into something else, and vice versa.

Within these dynamics, *faciality* is sustained because certain arrangements of power need to have a face. Facialization organizes systems of binary opposition operating on different levels and functions as their dynamic point of contact: power structures configure private and public, inside and outside through the envelope. As a homeostatic membrane it is a crucial component of the organization of power regimes in the building.

At a time when energy and security concerns have replaced an earlier focus on circulation and flow as the contents of architectural expression, the building envelope becomes a key political subject. Like

artificial intelligence and genetics, the building envelope is now a technology at the vortex of the ongoing political storm.³ Peter Sloterdijk eloquently anticipated the growing political relevance of envelopes in his *Sphären* trilogy,⁴ with the powerful imagery of a foamy space filled with bubbles and balloons of different scales and qualities. This *capsular* society and its phenomena, such as *global provincialism*, the *politics of climatization*, and the *social uteri*, describe a new paradigm that requires reconsideration not only of the technologies and economics of the building envelope, but also its political, social, and psychological implications.

There are multiple instances where the qualities of the envelope may trigger political effects: the envelopes of a retail complex or a lobby enclosure are powerful mechanisms of social engineering. Like a radiator adopting an intricate form to increase the surface of heat exchange with the air, a more intricate building footprint increases the vertical contact surface between private and public. A more permeable definition of the envelope will produce a more fluid relationship between private and public; the façade ratio⁵ of a residential block determines the environment's degree of artificiality; a gradual delimitation between the natural and the artificial in the façade of an office building could help to improve energy efficiency and minimize its carbon footprint; a more ambiguous appearance may allow for the reprogramming of the building's identity. It is at this level that the discussion of the qualities and structure of material organizations – such as difference and repetition, consistency and variation, flexibility, transparency, permeability, local and global and the definition of the ground – that gives architecture political agency

Mobilizing a political critique of the envelope to address its multiple attachments may enable us to frame architecture not merely as a representation of the interests of a client, of a certain political ideology, or an image of utopia, but as an all-too-real, concrete, and effective political agency able to assemble and mediate the interests of the multiple stakeholders that converge on the architectural project today. A discipline of the building envelope capable of remaining attached to reality and yet resistant to consolidation will enable architecture to produce effects that may actually destabilize power

³ The outcome of the credit crunch is likely to be a massive reconstitution of borders to rein in the free-flowing nature of the global economy: a sudden proliferation of insulation membranes that will protect, for example, Asian banks from future crashes of the American mortgage markets. And their attached new atmospheres are not likely to respect the current demarcation between public and private, as the current global banks bail-out is demonstrating

⁴ Peter Sloterdijk, *ESFERAS I Burbujas. Microesferología. ESFERAS II Globos – Macroesferología. ESFERAS III. Espumas. Esferología plural* (Madrid: Ed. Siruela: 2003, 2004, and 2006, respectively).

⁵ Façade ratio is the quotient between the external surface of a building and its overall floorplate, and indicates the amount of external surface per square meter of built area. It is often used by developers and engineers to specify the technical and cost performances of a building.

regimes rather than function as their mere representation, whether of the status quo or its resisting parties. In order to regulate its relationships with power, with the status quo, and with emergent social structures, architecture needs to develop political strategies to maintain a relation with power while simultaneously challenging and opening its structures. Rather than aiming at revolution as a political ambition, an updated discipline of the envelope will need to focus on *explicitation*,⁶ a model where political practices are attached to artificial environments in which we co-exist, and where disciplines become the primary source of political agency.

Molecular Faciality

A crucial factor in the renewed importance of the envelope derives from the evolution of the conditions of architectural production. While many aspects of the architectural project are now in the control of alternative agents (project managers, specialist contractors, etc.), the increasing facelessness of the commissioners gives architects license to invent the building's interface. The building envelope has become the last precinct of architectural power. What is the nature of public representation in the age of private-public partnership projects when both corporations and public administrations are procuring their buildings from developers who are sourcing their capital from private equity, hedge funds, and Real Estate Investment Trusts. The contemporary city is built for corporations run by administrative boards for multinational shareholders' interests; it is built by building corporations serving multinational interests as well, who procure the buildings and often run them, taking care of maintenance, security, refuse collection, energy supply and even the provision of infrastructure. How does one construct the face of the faceless? Even if the rise of sovereign funds and the re-empowerment of central banking succeeds in removing liquidity from the matrices of institutional power, the building envelope will still be required to fulfill a more complex set of performances, as the primary regulator between public and private, inside and outside. The growing number of buildings adopting supple envelopes with differentiated patterns does not appear as a mere coincidence, but as an index of a convergence of factors leading to a particular design choice. While only a few decades ago the crucial question for architects was the choice between pitched roofs and flat roofs, today architects are considering the

⁶ Peter Sloterdijk uses the term *explicitation* as an alternative process to revolution and emancipation. The history of explicitation is made increasingly intelligible in the spheres and objects to which we are attached. The categories of the French Revolution and left and right, both with their particular techniques of classification and of positioning no longer correspond to the order of things, which is no longer hierarchical but heterarchical. Whether we talk about carbon footprints, deregulation, genetically modified foods, congestion pricing, or public transport, these issues give rise to a variety of political configurations that exceed the left-right distinction. The left-right divide still exists, but has been diluted by a multitude of alternative attitudes. See Peter Sloterdijk, *ESFERAS III. Espumas. Esferología plural* (Madrid: Ed. Siruela, 2006).

choice between the *box* and the *blob*. The introduction of certain cladding and roofing technologies, such as curtain wall systems, silicon joints, and plastic waterproofing membranes, has eliminated the need for cornices, corners, pediments, and window reveals. As far as envelope technology goes, the difference between the roof and the wall has disappeared, eliminating the cornice line as a necessary articulation; fenestration is no longer a critical building problem, and the corner, a singularity derived from construction geometries and property alignments, is also weakening as the limits between private and public fade and the structure of land ownership is challenged by contemporary urban development instruments. Given these and other advancements in envelope systems, the choice between the *box* and the *blob* is a specious one, which alone is unable to structure a robust theoretical frame for a discussion of the convergence of political forms and architectural technology.

Beyond the emerging technological possibilities, there is also a whole new politics of *faciality*⁷ at play that affect the envelope as the locus of political expression. The current proliferation of alternative political practices, such as trends, movements, and other *affect-driven* political forms,⁸ runs parallel to the development of envelopes that resist primitive models of *faciality*, that are no longer structured on the oppositions between front and back, private and public, or roof and wall. Once cornices, corners, and windows are no longer technically necessary and the private and public are tangled in an increasingly complex relationship, the hierarchies of interface become more complex: the envelope has become a field where identity, security, and environmental performances intersect. From Seattle to London to Beijing, the faciality of the envelope has proliferated to such a degree that the pattern of construction joints appears to be the new scale of articulation of the face.

The classical approach to the envelope as a vehicle of expression and identity was to inscribe a conventional architectural language on the surface. The façade represented the building *allegorically*, as a signifier that located the building within a hierarchy of sociopolitical meaning. Eighteenth-century French academic theory held that the façade should reflect the building's program and purpose. The architecture of the Enlightenment still referred back to classical architectural languages, but simultaneously grounded itself on modularity and a rigid metrics of space as organizing principles representing the egalitarian values of the Saint-Simonian ideal democracy. The Modern Movement dismissed the classical tradition and viewed the façade as the logical result of the program – not as its

⁷ I adopt the term proposed by Deleuze to address the theorization of systems of expression or representation. See Gilles Deleuze & Felix Guattari, "Year Zero: Faciality" in *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis: University of Minnesota Press, 1987).

⁸ As Nigel Thrift has pointedly noted, contemporary politics are progressively less reliant on representation and proposition and more dependent on the production of *affects*. See Nigel Thrift, *Non-Representational Theory: Space, Politics, Affect* (London: Routledge, 2007).

representation. During the modern period the external surface of the building, cleansed of any reference to stylistic convention, was supposed to act both as an indissociable part of the whole building and as a symbol of modernity.⁹ The *facialization* of the building – the process of making it human by giving it expression and therefore political entity– had entered a crisis, as the envelope aimed to achieve the maximum degree of transparency. The lack of an overt allegory in the façade did not necessarily imply the façade’s disappearance as a quasi-autonomous element capable of representing a building’s internal organization. The modern search for spatial fluidity had an ethical component: spatial boundaries are symbols of social oppression to be avoided in a nonhierarchical democratic society.

As the modernist world order began to fade at the end of the 1960s, the more intrusive mechanisms of *facialization* were rehabilitated. The *post-modern* approach reinstated the relevance of the envelope as a representational mechanism, taking advantage of new building technologies to create effects alienated from both content and context, in correspondence with the prevailing capitalist ideology of individualization and spectacle.

Contemporary politics are now giving way to a new wave of powerful material organizations, belongings, and attachments, which are redefining political space and herald both the emergence of different political qualities (such as *affects*) and domains (such as *everyday life*). The resulting power structures operate as physical aggregates, *assemblages*¹⁰ where behavior is created through the localized complex association of molecular components. Both governmental agencies and corporate organizations are moving toward multiple layers of governance with intensified connections between them. Today, the emerging heterarchical order increasingly constructs its power by both producing and using diversity. The politics of rhetoric, symbolic reasoning, and representation are giving way to a new

⁹ See Alan Colquhoun *The Façade in Its Modern Variants* in *Façades (Werk, Bauen + Wohnen*, December 2005).

¹⁰ Manuel De Landa has theorized emerging social structures using Deleuze’s *theory of assemblages*, to posit trans-scalar social entities, from sub-individual to transnational, that characterize globalized societies and their heterogeneous populations. Assemblages are nonessentialist, historically contingent actual entities (not instances of ideal forms) and nontotalizing (not seamless totalities but collections of heterogeneous components). In these emerging social assemblages, individuals, groups, and other possible *actants* are primarily defined by relations of exteriority, and need to engage with different assemblages without losing their identity. In these emerging social structures, the relationship between an assemblage and its components is complex and nonlinear: assemblages are formed and affected by heterogeneous populations of lower-level assemblages, but may also act back upon these components, imposing restraints or adaptations in them. See Manuel De Landa, *A New Philosophy of Society: Assemblage Theory and Social Complexity* (New York: Continuum International Publishing Group Ltd., 2006).

breed of *object-oriented politics*,¹¹ invested in modes of production and exchange and primarily implemented through the production of *affects*.¹²

As the traditional articulations of the building envelope have also become technically redundant, the envelope's own physicality, its fabrication and materiality, have taken on representational roles. The envelope design has consequently focused on the construction of the surface itself, both as an environmental and a security device, and as the vehicle that will produce the building's *facialization*, make it human, turn it into a political entity. Globalization has on the one hand neutralized the effectiveness of architectural language, propelling the iconic and symbolic as communicative devices, while environmental and security concerns have simultaneously raised the threshold of the envelope's capacity for *immunization*. The envelope needs to satisfy the demand to provide identifiable images for an increasingly inconsistent and mobile community while insulating itself against an increasingly abrasive global atmosphere.

Jean Nouvel's unbuilt, yet influential *Tokyo Opera*, Frank Gehry's *Guggenheim Museum* in Bilbao, Future System's *Selfridges Department Store* in Birmingham (UK), OMA's *Seattle Public Library* and *Casa da Musica* in Porto, or Herzog & de Meuron's *Prada Tokyo* are notable examples of a tendency toward a multidirectional, *differential faciality*, which resists coding, orientation, and other traditional forms of *facialization*, to engage in the production of new *affects*. Freed from the technical constraints that previously required cornices, pediments, corners, and fenestration, the articulation of the envelope has become increasingly contingent and indeterminate. The demise of the primitive figures of building

¹¹ The term is borrowed from Rodney Brooks, a pioneer of behaviorist AI, who has promoted the idea of a *physically grounded artificial intelligence* from the field of robotics as an alternative to centrally structured coded wholes based on symbolic reasoning. Brooks has argued persuasively against symbolic processing approaches to creating intelligent machines, which had been the focus of AI since the days of Alan Turing, directly tracing back to the work of Gottlob Frege. Brooks's biologically inspired architectures and physically grounded systems (e.g., subsumption architecture) address basic perceptual and sensorimotor tasks as the basis of intelligence. These had been largely dismissed as uninteresting by the mainstream AI community which was more interested in reasoning about the real world than in interacting with it. Conversely, Brooks argued that interacting with the physical world is far more difficult than symbolically reasoning about it. "There is an alternative route to Artificial Intelligence that diverges from the directions pursued under that banner for the last thirty some years. The traditional approach has emphasized the abstract manipulation of symbols, whose grounding, in physical reality has rarely been achieved. We explore a research methodology which emphasizes ongoing physical interaction with the environment as the primary source of constraint on the design of intelligent systems. We show how this methodology has recently had significant successes on a par with the most successful classical efforts. We outline plausible future work along these lines which can lead to vastly more ambitious systems." From Rodney Brooks, "Elephants don't play chess." See also his "Intelligence without Representation." Both essays in *Cambrian Intelligence: The Early History of the New AI* (Cambridge: MIT Press, 1999). See also his "The Relationship Between Matter and Life," *Nature* 409, (2001): 409–11.

¹² For a critique of *affects* as an essentially contemporary political modality that overcomes representation as a more traditional political form see Thrift, *Non-Representational Theory*.

faciality has found resonance in the availability of certain technical possibilities (such as printing technology and CAM manufacturing) which have enabled architects to play not only with smooth geometries, tessellation patterns, and material textures, but also with a wide repertoire of layers with a primarily ornamental purpose, which can also perform technical functions such as solar shading and visual obstruction. The decoupling of the patterns of visual, thermal, and atmospheric permeability has opened unprecedented possibilities for *molecular facialization* of the envelope by dissolving or intensifying the joints at will through the phasing and de-phasing of these layers. The conventional figures of building *faciality* have been replaced by a more nuanced interfacial embodiment in which different layers of performance are played out against each other to produce a wide range of complex effects.

The current tendency toward airtight envelopes is played out in the joint pattern and modulation rather than the fenestration structure. The abundance of polygonal tessellations – for example, PTM's *Beijing Watercube* – may be driven by a contemporary desire for sealed atmospheres. The construction of bubble envelopes is made possible by polygonal geometries, which may also reduce joint length: polygonal tessellations have a smaller joint length per surface unit than rectangular grids. Gehry's fishlike skins are another index of this tendency aimed at erasing the hierarchical *faciality* and modular joint grid that characterize standard curtain-wall systems. The proliferation of diagrids and nonorthogonal tessellation patterns – OMA's Seattle Public Library and CCTV building, Herzog & de Meuron's *Prada Tokyo* and *Beijing Stadium*, Foster's *Swiss Re* and *Hearst towers* – display a general tendency toward antigravitational, uprooted, unstable, and differentiated *affects*, even if many of these patterns have in fact a structural function.

If the political history of the 20th century could be interpreted as the exploration of public freedoms with respect to the normative basis of democracy, the development of the building envelope could be partially described in parallel terms. The *differential faciality* explores the expression of a sort of politics that moves away from the ideal, modular democratic organization based on indifference, independence, and interchangeability. If modularity was typically a quality of a democratic system that prioritizes the part over the whole, some of the emerging envelope geometries seem to be exploring *modular differentiation* as a political effect.

New forms of *facialization* are being deployed without apologies to address growing requirements to produce effective public interfaces for a global audience – the whole debate on the *iconic* – and growing security and environmental concerns that legitimize the envelope's opaqueness. The contemporary

envelope, the primary depository of contemporary architectural expression, is now invested in the production of *affects*, an uncoded, prelinguistic form of identity that transcends the propositional logic of more traditional political rhetoric. The material organization of the membrane has become not only a result of a technical articulation of building parts but an image of the engagement between the individual and the collective, and therefore a mechanism of political expression of contemporary societies.

The modular grid, indifferent to the relative influence of individuals or politically active subgroups embodied the ideals of democratic equality and liberal individualism. It expressed a preference for nonhierarchical organizations in which individuals are equal and will submit to the will of majority. However, emerging social structures characteristic of globalized societies and their heterogeneous populations tend to produce trans-scalar entities, from sub-individual to transnational. In these emerging social assemblages, individuals, groups, and other possible *actants*¹³ are primarily defined by relations of exteriority, and need to engage with different assemblages without losing their identity.¹⁴ In these emerging social structures, the relationship between an assemblage and its components is complex and nonlinear. The *allometric* modularities and *variable repetitions* that emerge as traits of expression in many of the new envelopes cited above are probably more adequate to express collective purpose within a modular system and to represent “weighted” models of democracy – either those committed to the exercise of civil liberties or those that are driven by a hierarchical bureaucratic regime overlaid onto apparent democratic protocols.

The question is whether the *differentiated facialities* and tessellations of the envelope seen emerging in the Chinese Olympic projects are genuine devices to allow the envelope to relate to a larger variety of concerns – environmental, social, economic, etc. – or a strategy to step up the *immunization* levels,

¹³ An actant is a material entity or human person or group that takes on form, definition, facticity, and, ultimately, agency. It is required to enter into an alliance with a spokesperson (as Marx put it, actants “could not represent themselves; they had to be represented”). First used by Bruno Latour, the term is one of the central concepts of *Actor-Network Theory (ANT)*. Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society*, (Cambridge: Harvard University Press, 1987).

¹⁴ Richard Sennett’s definition of associative democracy, Latour’s Actor-Network Theory and Sloterdijk’s foams coincide to describe emerging social structures as organizations where the articulation between individual and society, *part and whole*, is drawn by influences and attachments across positions, agencies, and scales that transcend both the individuality of the part and the integrity of the whole. Manuel de Landa has applied Deleuze’s theory of assemblages to describe these emerging forms of social and political organization. Assemblages are nonessentialist, historically contingent, actual entities, (not instances of ideal forms) and non totalizing (not seamless totalities but collections of heterogeneous components). De Landa, *A New Philosophy of Society*.

while representing an ideally differentiated public.¹⁵ Do they inflect in response to multiple agencies and incorporate specificities rather than resorting to the mere production of political *affects*, spectacular embodiments of global capitalism, or authoritarian bureaucracies?

As the politics of *affect* bypass the rational filter of political dialectic to appeal directly to physical sensation, the construction of an effective frame of reference within the discipline for discussing the production of expression is critical. One can no longer sustain the *ideological* assumption that a more regular or a more differentiated pattern, one more permeable or more closed, is better at expressing a certain society and the production of transformative effects. The political accuracy of a certain envelope needs to be judged in respect to very concrete assemblages. The most acknowledged envelopes among those iconic Beijing Olympics projects are probably those in which the architects have succeeded in creating a plausible alibi for the differentiated pattern wrapped around the massive unarticulated volume of the buildings, where a resonance between literal performance and *affect* has been achieved. This is where a new discipline of the envelope becomes politically operative, as it is the discipline that can become an act of resistance without getting caught in the negative project of the critical tradition or in the use of architecture as a mere representation of politics.

The Political Agency of Dimension

Whether architecture and urbanism can or should be critical, projective, progressive, or utopian, and whether speculative architecture can remain an effective practice are still much debated issues that need to be addressed with respect to a proposal of a *general theory of the building envelope*. Architecture and urbanism mobilize such a vast scale of resources that unless the practice is kept at a purely speculative level it is difficult to sustain without it becoming, to some degree, an accomplice of power. At the same time, a progressive discipline constantly challenges the *status quo*, and therefore

¹⁵ The question of engagement or complicity is always lurking when considering architecture's engagement with power structures. "It's very cheap and easy for architects and artists and film-makers to pull out or to make this kind of criticism," Jacques Herzog says. "Everybody knows what happens in China. All work conditions in China are not what you'd desire. But you wear a pullover made in China. It's easy to criticise, being far away. I'm tempted almost to say the opposite...How great it was to work in China and how much I believe that doing the stadium [and] the process of opening will change radically, transform the society. Engagement is the best way of moving in the right direction.'" Excerpts from a conversation between Herzog & de Meuron and Tom Dyckhoff, *The Guardian* (March 14, 2008).

needs to develop political strategies to maintain a relation with power while simultaneously investigating and opening its structures.

Architecture's challenge to established power has been traditionally enacted through the proposal of alternatives developed in relation to a certain ideological position that provided directionality in an ideal progression. In these narratives, reactionary positions were attached to the past and progressive attitudes to future possible emancipations. However, the modern idea of progress has entered into crisis, as attachments are now linked to both the past and the future simultaneously. The topography of time and the site of political passions have been irreversibly overturned, as the great historical narratives have failed to address the phenomena of contemporary societies. Contemporary politics are less determined by temporal processes and progress than by space and co-existence. To retrieve political agency architecture needs to develop transversal political practices able to evolve constantly, accumulating new political concerns as new events unfold and, through such accretion, to build a whole that is both more than the sum of its parts and yet remains open to further inputs.

Instead of a revolutionary architecture, an architecture of *explicitation* would imply more complex political directionalities as it transforms the space and the material organization of the built environment, even if those transformations cannot be inscribed in a holistic political program. For architecture to express the domestication of density and high-rise life through specific massing strategies in tall buildings, to convey that certain tendencies in the articulation of the building envelope capture the new political *affects*, to communicate that certain manipulations of the ground and the roof indicate the politicization of nature, or to explain the breakdown of the correlation between interior and exterior and private and public are legitimate political performances.

My interest in envelopes as political devices is that they constitute the element that confines an atmosphere and regulates the flow of energy and matter in and out of that system. If traditional politics were based on equilibrium and closed systems, the contemporary mechanisms of social and economic integration suggest that systems need to operate in an open mode. And, like in thermodynamics, equilibrium is only valid for closed systems where the overall amount of energy is kept constant. Once energy flows in and out of a system, the number and type of possible historical outcomes greatly increases. Instead of a unique and simple equilibrium, there are now multiple ones of varying complexity regulating their attached power regimes. By analyzing the building envelope, architects may be able to re-empower the practice of architecture as a truly transformative force in the reorganization of power ecologies. As an alternative to historical directionality, I would like to propose an analysis of the political

dimensionality of space. The dimensional analysis of building envelopes is an attempt to reground architecture's political performance in space and material organizations.

The structure of this theory of the building envelope is based on the hypothesis that the political potentials of a material organization are primarily determined by the dimensionality of their limits, as this determines the flows in and out of the system. Following this hypothesis, every dimensional type can trigger specific technological, social, and political effects. Admittedly, the dimensions of the envelope are not usually left for the architect to decide and are generally associated with the type of project, site constraints, and client's requirements. And that is precisely their virtue, as they are aimed at identifying political opportunities within the constraints – the attachments – that come with each project. Within those constraints, a wealth of possibilities can be activated to transcend the mere technical problems of shelter and put into effect the wider political performance of the buildings. The structure of this analysis has been organized into four categories of envelope: *flat-horizontal*, *spherical*, *flat-vertical*, and *vertical*, resulting from the specific ratios of the envelope's primary dimensions:

- **$X \approx Y > Z$.** The category of *flat-horizontal envelopes* includes those in which the horizontal dimensions are considerably larger than the vertical. Buildings like airports, train stations, factories, trade fairs, convention centers, markets, and retail and leisure complexes generally belong to this category. The political performance of *flat-horizontal envelopes* lies in the delimitation of edges, frontiers, and boundaries and the sheltering of large-scale atmospheres operating primarily on the articulation between natural and artificial. Since a comprehensive perception can only be obtained from an aerial perspective, *flat-horizontal envelopes* are experienced in a fragmented manner and are therefore less concerned with representation and figural performance than with the organization of material flows: traffic, ventilation, daylight, security, etc. The *flat-horizontal envelope* usually presents relatively low affective and environmental performances.
- **$X \approx Y \approx Z$.** The *spherical envelope's* dimensions are approximately equivalent in all directions; cubic, spheroidal, and polygonal geometries are also particular cases in this category. In principle, the *spherical envelope* has the lowest ratio between its surface and the volume it contains. The specificity of this type is the relative independence that the skin acquires in relation to its programmatic determinations, as functions are not strongly determined by adjacency to the outside and therefore by the form of the envelope. This often implies a wider variety of

programs inside and a heterogeneous environmental content. *Spherical envelopes* generally enclose a wide range of spatial types with specific functions, rather than a single spatial condition. Unlike other envelope types in which the border between public and private occurs on the surface of the container, the spherical type often contains gradients of publicness. *Spherical envelopes* often correspond to public buildings, buildings that gather a multiplicity of spaces, such as city halls, courthouses, libraries, museums, arenas, etc. In the *spherical envelope* the gap between expressive and environmental performances is at a maximum, with low environmental and high expressive performances.

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- **$X \approx Z > Y$** . The category of *flat-vertical envelope*, better known as a *slab*, includes those envelopes whose predominant dimensions are parallel to gravity and distributed along a line. *Flat-vertical envelopes* are generated by the horizontal displacement of a section of space, which in order to support a specific function optimizes density, daylight, ventilation, structural constraints, and the building's relationship with public space and infrastructure. Land uses and orientation are crucial drivers for this envelope type. Most mid-rise residential and many office buildings are probably in this category, as they respond to the need to host a large volume of homogeneous program. The *flat-vertical envelope* is primarily determined by the façade-to-façade or façade-to-core depth, hence its laminar organization. Modern urban fabrics are predominantly matrices of *flat-vertical envelopes* combined in various configurations suited to a particular climate, use, and culture. The *flat-vertical envelope* usually has a high level of environmental performance and a relatively low level of expressive performance.

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- **$Z > X \approx Y$** . The last category of envelopes in this proposal, the *vertical envelope*, has a predominantly vertical dimension and, unlike the *flat-vertical* type, a multidirectional orientation in plan. The specificity of this envelope category is an intense relationship between physical determination and performances. Because of its scale and technical complexity, functional and environmental performances such as daylight penetration and natural ventilation need to be maximized, while the formal qualities of the envelope play a crucial role in the building's structural stability. The *vertical envelope's* geometric determination crucially impacts both the spaces that it encloses and its surroundings. In addition, the visibility of the *vertical envelope* makes it particularly conducive to iconographic performance. If in the *spherical envelope* the gap between representative and environmental performances reaches a

maximum, in the *vertical envelope* both sets of performances are at their highest level. The collusion between extreme technical performance and high visual impact produces the maximum tension between efficiency and expression, a condition that runs deep in the history of this building type.

What is significant in each category are the technical and the political variations that trigger particular potentials for theorizing the politics of the envelope. These four categories are an attempt to establish a taxonomy capable of bringing together environmental and political performances in a new discipline of the building envelope. They are particular instances of a much more gradated speciation of envelopes that ranges across them. Some buildings hold an ambiguous position in this taxonomy, yet it seems unlikely that a revision of the discipline can be initiated without resorting to some form of taxonomy, however precarious and ephemeral it may be.