Abstract
What will it feel like to live in a city, where houses court each other in springtime?

The 'intelligent-skin' project investigates the potential of media-facades in terms of corporate communication: what does it mean to build houses out of bricks of mediality? What does it imply to say that communication literally takes place? The virtualization of housing through large sized media skins will introduce medial milieus into our urban spheres to come – they might seize to function as add-ons and instead become infrastructure of our very surrounds just like street lightening, many-storey buildings or large sized rear windows have come to be. And like any of these, media façades will introduce new social habits; they will stimulate us to integrate new ways of engaging with our surrounds into everyday life.

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Urban milieus

The potential of urban screens shall here be explored from a point of view of the day after tomorrow. Our interest concerns the imaginary urban space once large sized media façades will not be regarded as medial platforms, as non-spaces in the sense of media as a means for effective communication as we know it. At one time, media façades will have become infrastructure of our urban surrounds, and will be animated differently than with screening commercials or temporary media art installations. The potential of
media façades, so we like to imagine, is by no means exhausted (nor even appropriately characterised) through allowing us to increase the efficiency of ways of communicating that are familiar to us now. Or at least, their potential is not characterised in these terms any more adequately than the potential of any other urban peculiarity would be – is the meaning of shopping windows exhausted in terms of effective communication? Or the pavements in the old town areas of European cities, in terms of effective way-giving? On the long run, media façades will not be experienced as add-ons to our public spaces, as surplus devices. They will one day become infrastructure of our very surrounds just like street lightening; many-story buildings or large-sized rear view windows have come to be. And just like any of these, media façades will introduce new ways of being, new social habits. They will stimulate us to integrate new ways of engaging with our surroundings; they will inspire us to develop new habits to accommodate in.

Discovering the potential of outdoor screens for urban society leads us foremost to reconsider the meaning of media. In the case of architectural media façades, media literally and physically create a difference. They introduce a differentiation; they separate into inside and outside, and through that, they create a relation that can be experienced in many different ways. These are crucial attributes to media per se. What is peculiar to architectural media façades is their literally compartmentalising function – media are being spatialised. Communication here does in fact take place.

Mediating the media

Media have their etymological roots in the Greek word méson, meaning that which has its place in the middle, the milieu or in-between space. In that very quality, media are actually inconceivable – for whenever we try to conceive of this in-between location, it looses its status as being in-between and switches into our focal position and thus becomes objectified. It is not surprising, then, that from a theoretical perspective, media have not really been regarded and characterised in their meaning as milieus. Media theory is largely preoccupied with exploring mediality in a technological sense of media being a means, a tool, to host and remember, express, translate and transpose, encode or decode distinct intentionally created messages. Or then, media are in a (only sometimes called so explicitly) transcendental sense ascribed an a priori categorical status, as conditioning our very ways of engaging with the world in perceiving, sensing, reasoning or even thinking – mediatisation as processing between subject and object.

These considerations are all undertaken in an (at least so attempted) objectifying gesture – it is the substantivist question of what is the essence of a specific medium or also of media per se, or in analogy to that, the only structurally-substantivist question of what is the principle of mediation that preoccupies the contemporary respective discourse. Media as preconditioning epistemology per se, media as extensions of our sensory-system allowing us to emancipate from our bodily constraints (while our bodilyness itself is conceived to be immediate), media as socio-political tools and agents of either the respective structural power dispositives or of democratic or anarchistic emancipation processes – the perspective is always one like from a splendid outside: what is this thing that mediates meaning? How can I describe it, once I position it vis-à-vis of myself in order to examine it from a critical distance?

Where there is distance, mediatisation must have taken place. True. But the media, in their characteristics of being middlings, in-betweens, are impossible to be scrutinised and analysed by metrical means. The introduced distance always only lets the milieu-quality of media approach into ever-closer proximity. There is no end to the process of mediating the media that mediate what makes sense to you. Media seem to resist the characteristics of objects, and instead seem to insist on their character as circumstances - Medien sind keine Gegenstände, sondern Umstände (Media are not "opposed entities", they are "wrapping stances"), one could possibly say. Despite the
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infamous popularity of medial *interfaces*, we never actually *face* media. And indeed, when reflecting upon the circumstances of a given situation, one encounters the very same problems as with reflecting upon mediality. For once the circumstances are spotted on, they shift into the focal position and loose their status as circumstances.

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**Immediate media**

Literally, a milieu is the middle place, our very proximate environment we are immersed into. A milieu is the place of our circumstances, in an eventful and immediate sense. To view media as milieus rather than as neutral platforms, severely complicates things. It suggests that mediality itself has immediate qualities. There is an inherent recursivity to regarding media as milieus. The medium as a milieu is an ever eventful environment bearing spontaneous and potential relations that remain excessive to whatever becomes articulate, mediated, meaningful at any given moment. The predominant interest when mediating the milieu-quality of media must then concern the structural level: how can the immediate characteristics of any eventful environment gain a meaningful means of expressivity? How can these characteristics express themselves without depending on our intentional descriptions? For our intentional descriptions can only ever be partial – there is always potentially more to any event than what we make of it.

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**Circumstancing the circumstances**

Would it not be fascinating, if the simultaneity of various perspectives and experiences, that in their irreducible collectivity characterise the vibrations and the density of public spaces, would find a collectively driven means of expressivity? A collectively driven means yet that does not reduce the singularities that make up that very collective – that is, a means that does not rely on statistics. For statistics reduces the qualitatively different, which as such is not measurable, into metrical and measurable quantities of qualitatively the same. *Circumstancing the circumstances* involves topological thinking. It is the mathematical science of topology that gives us the formal systematics of relative and singular locations – topology is a non-metrical, or maybe: relationally metrical, formal approach of describing, constructing and dealing with spatio-temporality in its very concreteness of any situation.

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**Geometry of relational proximities**

The etymological background of topology falls together with the study of concrete locations. At the beginning of its development in the early 20th century, it was called *analysis situs*, Latin for *analysis of place*. As a mathematical discipline, topology is concerned with measurement. But unlike geometry, topology is concerned with measuring complex eventuality rather than simplified and abstract objectivity. It is a formally systematic and relational structural realm for processual happenings in space and time, a quasi metrics of events that is being developed within several mathematical subdisciplines. While geometry presupposes a 3-dimensional receptacle space into which objects under investigation are being projected in order to be described according to universal, ideal proportions, topology departs from a varying, dynamical spatiality, which implicates a spatio-temporal structural continuity. It is not the measurement of abstracted objects that are in focus here, but the dynamics of transitions and transformations of relations. The set of basic concepts that topology operates with include neighbourhoods, vicinity, continuity, sets, differential containment, indiscreetness, complex spaces, compact spaces, locality, density, proximities.
According to the irreducible relationality, which (in ontological terms) replaces substantiality in topology, instances under investigation are referred to not as "objects" but as "foldings". The fold as a figure of thought makes us feel that difference and continuity need not exclude each other: in the form of folds, there are identifiable "unities" with proper insides and outsides, even though they all belong to one and the same continuity. Imagine a napkin, which you crumple between your fingers, eventually releasing your grip and looking at the folds that have appeared throughout the previously flat plane. Now, if you tear on the one side in order to change the form of one single crease, you will soon notice that this performance has consequences not only for the one crease you may have in mind, but actually alters the entire setting. This incorporates the main thoughts of topology: the discontinuous and the continuous can be thought together, in a differential sense.

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**Matters of virtuality**

Even though the implications topology as a quasi-metrics of relational proximities are far-reaching for philosophy and for many other disciplines as well, it is hardly being adapted and translated at all to the outside of the mathematical discourses. It is predominantly by philosophers thinking about eventuality, presence, an open logics, telematics and the virtual that topology appears as a key concept[1]. It is the dimension of the potential that is new within topological thinking. And this is also the link between topology and virtuality – the *virtual* comes from the Latin word *virtus*, meaning *potential*. The virtual in the sense of potentiality is not opposed to the real, and differs fundamentally from the concept of the possible. While the possible remains within the scope of what we can imagine at a given time, the potential is always excessive to what we might now think of. There is an inherent relation between the virtual and the new, accentuating processualities and becomings, qualitative transformations.

Grasping this, and holding for a while, made us thinking about the virtual house. Being interested in qualitative transformations, we decided to regard technology, as well as specific forms of mediality, as material rather than as means for achieving certain things. This perspective seeks new circumstances for technology-matter, or media-matter, to be transposed into. Thereby, neither the *dis-posed* technology/media nor the circumstances into which that disposed technology/media is being *im-posed* will remain unchanged. Within such an understanding, the practice of design - even if dealing with immaterialities - comes to be a transformation loop, a catalyst in a quasi onto-genetic tradition.

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**The virtual house**

Put provocatively: virtual houses are houses built of virtuality-bricks, of building blocks of pure potential becomings. Virtual houses are houses that are becoming, transforming, and through that: individualising. As we know form ourselves, changes require the mediation of what we are immediately tied into. We colloquially speak of life-phases, knowing well that emancipation of a given situation is only possible through getting out of tune with oneself, paradoxically to the notion of identity, which has come to preoccupy Western thinking at large. A virtual house that is worth it’s name shall therefore mediate it’s own circumstances, and through that develop a set of differential velocities, *Eigenzeiten* in the sense that Ilya Prigogine and Isabelle Stengers[2] have introduced for dissipative structures. Virtual houses, if they will ever come to be, will be some sort of house-beings. They will require a proper sensitivity, affectivity as well as the capacity to model (abstract, analyse, compose and instantiate) impressions, to integrate them into a proper and evolving order of internal consistency, as well as the capacity to store and remember. Intelligent skins as architectural media façades will be
the infrastructure of pulsating milieus just as our organs can be regarded as infrastructure for our way of being alive. Media as milieus introduce complex composites as our companion species[3], our environment suddenly appears as a foamy structure of intimate, co-existing and co-dependent spheres, which through mediated communication, are being co-inhabited. Mediality, after all, has an ancient meaning of receiving visitations, of allowing oneself to be inhabited and transformed by some outside, alien energy or spirit. For the German philosopher Peter Sloterdijk, messages, senders, channels, codes – all these are basic concepts of a general science, a scientific practice, at least, of visitability, referring to visitations of something in something through something. A shared medium, a shared milieu, a shared set of codes in these terms not only provides the very ground for intersubjectivity among individuals that pay attention to each other (that mediate one another), but also reveals that communication involves intimate affairs, the mutual generation and inhabitation of spheres of commonality.

Paying attention to the complications contemporary media theory struggles with today, mediality shall here always be understood in a performative sense. To mediate one’s own circumstances does not leave oneself untransformed. And it can be achieved neither through analytical deduction nor through empirical induction alone. Both methods involve an outside stance for the investigator to occupy, and this is precisely what cannot possibly be maintained when communicating is at stake in the just described way as an intimate affair. To summarise the development so far: where something is being mediated, there has previously been a differentiation. Mediating about what is external to our internal order of coherence will necessarily be experienced as a disturbing moment, that is in the case of mediating one’s own immediate circumstances, the experience of a moment where we are out of tune with ourselves. Where we are vulnerable and ex-posed, ex-centric, moving along the borders of individuality, being intimately engaged with an Other, an outside that percolates our inside. Taken seriously, mediating one’s own media and means according to which we make sense of the world, involves adaptation and transformation of our very internal organisation as well as of our external representation of our surroundings.

Mediation is of a skinning quality

A virtual house structurally made up of intelligent skins mediating between the different compartments and spheres looses its static distinctness and merges with the environment – it comes to be of a fluid quality despite the material insisting presence. Mediated, virtual housing takes place in milieus, in communicatively created in-between dimensions to be integrated and inhabited as part of reality in a differential sense. For our mingling with the world is of a "skinning" quality[4]: protecting skins, percolative membranes, shiny and luminescent garments, fine flocuss, wrinkles, folds, chinks, scurfs. Comprehensions, containings, shapings, seasonings. Personal touchable receptive sensitive. Fine fair dark, reddishly kindled. Gruffy. Scurfy and strained surfaces, over pulsating veins and ever singular line-drawings. In the words of Michel Serres, the skin comes to be the milieu where each of us mingles with the world: "[...] through the skin, the world and the body touch, defining their common border. Contingency means mutual touching: world and body meet and caress in the skin."[5]

To regard media as milieus, as "skinny", in-between spaces that we can inhabit, involves a thinking beyond the object/subject dualism. The milieu is in fact not conceivable without its counterpoint of the ever evolving individuality of its components. It is not only metaphorically, that a theory of ontogenesis confronts structurally the same problems as media theories: how to talk about the medium as middle, as comprehending milieu, without losing that very characterising quality? How to talk about the individuality of somebody or something without - through the act of doing so - giving up precisely that quality that singularises? Gilbert Simondon has
developed this problematic in a most interesting direction, where he explicitly comes to speak about the process of individuation as a process of mediation. Let me unfold the issue from his perspective.

The process of individuation as a process of mediation

In his short text "The Genesis of the Individual"[6], Gilbert Simondon undertakes a fundamental critique on respective discourses that think about the problem of individuation. There is, he says, an ontological privilege to the manifest, the constituted individual, over the individual as comprehended in its very process of individualisation. Whether an atomistic, substantialist notion of individuality is being followed or a hylomorphic notion, the point of departure remains to be the constituted individual, and the aim is to seek for the principle that causes that very constitution. The process of individuation itself is merely thought to be putting the principle (that is transcendental to the process itself) into effect. Simondon’s critique concerns this privileging of being over becoming. For him, individualisation, becoming, is to be regarded as one dimension of being, namely as that dimension which allows individuals to fall out of step, to de-rhytmise, with themselves. Individuation has resisted thought and description because a being has been regarded in terms of only one form of equilibrium: stable equilibrium. Simondon’s perspective involves the idea of metastable equilibrium, which actually is not a state any more, and which is an option only if the reductionist frameset is altogether given up. The individual in terms of a metastable equilibrium is being conceived as irreducibly intricate with its co-emerging proper milieu on the one side, and on the other side with a larger, comprehending "initial supersaturation of potentials", as Simondon calls it (G.S.p.301). For him, individuation is a process of resolution. Resolution of potentials that are incompatible: "Individuation must therefore be thought of as a partial and relative resolution manifested in a system that contains latent potentials and harbors a certain incompatibility with itself, an incompatibility due at once to forces in tension as well as to the impossibility of interaction between terms of extremely disparate dimensions" (G.S. p.300).

In Simondon’s terms, individuation is not to be thought of as the meeting of a previous form and matter existing as already constituted and separate terms. For him, individuation comes to be mediation, allowing the different orders of magnitude that are contained in the initial supersaturation of potentials to gradually overcome their initial absence of interactive communication. Through communication then, "middlings" take place and thus, the dimensionality of the system is further and further "differentiated into structured individuals of a middle order of magnitude, developing by a mediate process of amplification" (G.S. p.304). For Simondon, individuation is not being produced in an instantaneous fashion, but, so could be argued with Deleuze, follows the gradual logic of the differential. Metastability is being maintained ceaselessly – this is the precondition of life itself. A living being conserves in itself an activity of permanent individuation, it is not the result of individuation, Simondon says (G.S. p.305). The individual thus understood is inherently relational – it is both an element and a dimension of the world as a whole. Living beings have to be thought within an open-ended axiomatics, for the living quality is precisely what forces the individual to take recourse to new dimensions, which are to be incorporated in order to maintain the metastable equilibrium the living being manifests. The bio-mathematician Robert Rosen insists vigorously on this perspective, pointing out a fundamental "impredicativity"[7]. Thus, the individual is no longer either a substance or a simple part of the collectivity, for in it there is an informative and interactive communication between that which is larger than itself and that which is smaller.

The impotent law of the excluded middle [8]
Relative to any stance we take, there are thus pre-individuals as well as there are trans-individuals. A living being, if regarded as a unity at all, is a transductive unity. A unity that can pass out of phase with itself – it can in any area break its own bounds in relation to its centre. If individuation is to be studied, Simondon says, one has to look at forms, modes and degrees of individuation in order to situate accurately the individual in the wider being according to the multitude of levels it is involved in. Given that complexity of the situation, it becomes clear that classical, i.e. any closed-form logics cannot be used to understand individuation because it relies on the law of the excluded middle. And it is precisely the process of continuous "middling" that allows for individuation, once we are interested in looking at it not merely as the result of a principle or process but as the very process of becoming of the being itself. Individuation is not a synthesis, a return to a unity, but rather the being passing out of step with itself, through the potentialisation of the incompatibilities of its pre-individual centre.

Incorporate communication

The core thought of Simondon that makes his approach so relevant for thinking about what it means to "mediate housing", to build homes with "bricks of mediality", to construct media façades that "virtualise architecture", is on the one hand, that for him, "the notion of form must be replaced by that of information, which presupposes the existence of a system in a state of metastable equilibrium capable of being individuated" (G.S. p.315). On the other hand it is his extension of the concept of individuality towards the pre- and the trans-individual. If we translate what Simondon says within the biological discourse to the media theory discourse, then communication itself involves a becoming-corporate, a becoming a complex composite. The thus appearing perspective that communication and mediality is predominantly concerned with compartmentalisation, suits wonderfully into our given context of exploring the potential of media façades for virtualising architecture.

The idea of actually built virtual houses seems entirely paradox, at first. Yet it seems to us that it is precisely architecture’s involvement with physical settings that become manifest, present and actual, that allows a rather uncommon perspective upon the virtual. A perspective that is very much unlike the explorations made accessible through VR technologies which are largely preoccupied with ideals, with representations, and that in their visions remain in close neighbourhood to utopian alternative-worlds. Once the virtual is thought along the series of thinkers that Gilles Deleuze has introduced lately, namely not as opposed to the real but as a dimension of it – similar to becoming as a dimension of being for Simondon - we might better speak of Real Virtuality instead of Virtual Reality. The claim of virtualisation then is not so much concerned with instantaneous, intentional creations, but with potentialising potentialisation, which is, essentially, complexification. The virtual house has been nicely characterised by John Rajchman: "The virtual house is the one which, through its plan, space, construction and intelligence, generates the most new connections, the one so arranged or disposed as to permit the greatest power for unforeseen relations"[9]. John Rajchman’s words imply that virtualisation has got something to do with animation. A virtual house has a proper intelligence and activity he says. It generates new connections; it permits the greatest power for unforeseen relations. Animation here is thus not meant in representational terms as creating the illusion of something to be animated, but as a real, eventful presence that is being ascribed to the virtual house.

flavr savr – or: there is something of a fish in that tomato

Research on media façades as "intelligent skins" has lead us to postulate the notion of
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oiko-biotic-organisms, of Oikoborgs in short. I would like to forestall the discursive context in which I situate this postulation. Many contemporary philosophers think about the inhuman, the transhuman, about trans-species or trans-generic aliens - Jean-François Lyotard, Michel Serres, Donna Haraway, to name only a few. Biology has become life sciences that are predominantly involved with a yet to be wrapped up information theory. Nanotechnology have come to grow entire organs from regenerated living tissues, recreation technologies have gained legal grounds and genetics explore the compositing of cross-species inheritance. Today, the categories of kinship and biological kingdoms do not seem to fit any longer. We grow hybrids and garden alien entities beyond all boundaries of what we have for a long time been trying to establish as the natural order of things. It was in 1994 that flavr savr was introduced into international food markets as a tomato of a special kind – that is, as a tomato whose kind cannot really be named. Through the integration of a specific flounder fish gene into the DNA of that kind of tomato, its genetic self has been altered, helping the flavr savr not to rot so fast and to become the first trans-genetic "alien object" for sale. This tomato – does it still belong to the category of vegetables? Of tomatoes? There is something of a fish in it, spoken literally.

If there is something of me in that media skin, and something of you as well, and something of the passers-by tomorrow morning at eleven o’clock, and of the teeny skaters inhabiting that same place in the evening, once communicative corporations, informative visits and moments of medial co-habitation percolate our architectural surrounds, then it is in a similar fashion that we might come to speak of animated spaces, of trans-individual house-beings or Oikoborgs as our companion species that populate our surrounds.

Oikoborg #1

The «intelligent skins» as architectural media façades that we develop at the University of Art and Design Basle incorporate these principles. The prototype that we currently develop consists of façade elements as LED screens, which maintain the transparency of windows from inside out, while being able to display moving images. The "intelligence" of these modules consists in an integrated system, which allows the skin to interact with its proper milieu. Its openness is maintained through various sensors that perceive happenings in relation to the skin. Furthermore, the system hosts an active memory of images as well as forms of sensibilities, quasi-mental "Anschauungsformen" and concepts, which it further develops over time. The first Oikoborg that might come into existence sometimes next year, will have an initial setup of images, that our team has collected and categorised according to the following categories of sentiments which I would rather like to call "conceptual enfoldings": aggression, anxiety, intimidation, anger, melancholia, excitement, surprise, fascination, gaiety, consternation, curiosity, sleepiness, beauty, fear, sadness, high spirits, impatience, attraction, reverie, affection, and reluctance. This collection is bluntly arbitrary and subjective, as is the collection of images that are categorised respectively. The selection of images is purely subjective – this is the part of us that will be in the Oikoborg as a trans-individual – and we did not attempt to spell out and agree on a basic logics and description of these sentiments (this is why we rather speak of "conceptual enfoldings" than of sentiments here). The system itself will, through interacting with this input (which is at first largely undifferentiated) and with its surrounds, gain its own "concepts" of what it means for it to be affectionate, for example. It will continuously create models of what it experiences, through relating the stimuli it perceives to the set of mental concepts it has available, and the interactions it provokes through its expressions. What will be displayed on the screen expresses the Oikoborg’s own way of reasoning and may most probably be completely meaningless to most of us at first. We expect Oikoborgs to encounter us as aliens. But as human beings could well be characterised as "sign hunters" and will thus engage over time
with the expressions on the animate skin, they will through that interact with it in a necessarily structured way. For the nice thing about human beings is, as opposed to many machine-intelligences that often act according to purely logical and statistical randomness, that for us, it is hardly possible at all to act without an underlying structure, even though there is no need (nor possibility) for us to be (entirely) aware of this structure. Neither needs the Oikoborg, who will nevertheless adapt in resonance with those structures.

An Oikoborg will thus best be characterised as a corporate identity of its initial components (the project team), which will then individuate over time according to its own eventful circumstances. So, what will it feel like if houses court each other in springtime, we are wondering.

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**Notes**

1. For example Gilles Deleuze and Felix Guattari (e.g. *Milles Plateaux; Cinema I+II; Foucault; The Fold*), Michel Serres (e.g. *Hermes I-V; The Parasite; Atlas*), Peter Sloterdijik (*Sphären I-III*, Suhrkamp Verlag, Frankfurt, 1999-2004), Vilém Flusser (e.g. *Vom Subjekt zum Projekt*).


**References**
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First Monday, Special Issue #4: Urban Screens: Discovering the potential of outdoor screens for urban society (February 2006), URL: http://firstmonday.org/issues/special11_2/buhlmann/index.html