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Urban transects

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Developed within the framework of a French interdisciplinary research program¹ and a design studio Master's program of the Grenoble School of Architecture's entitled Architecture, Cultures of the Senses and the Environment², we have explored the notion of the "Urban Section" as a meeting-point between global environmental issues and situated, atmospheric qualities of space, as experienced through spatial practices. This initial idea was to develop the capacity of the urban section as a mode of representation allowing for the articulation of components of the urban milieu that are almost always considered separately from one another; built objects, the sensory realm and social practices. It was developed in the form of an exploratory, applied approach concerning specific environmental preoccupations; rising summer temperatures in the city of Grenoble (2007-2010) and the handling of solid waste in the city of Sao Paulo (2009-2010).

The city represented in section

Defining sensory interactions in situations experienced in a give moment and a given place, the notion of *architectural and urban ambiances*³ places the

connection between the user of space and the ecological rapport that he/she maintains with the world with respect to crucial issues about urban life and habitation. The atmospheric dimension is revealed in all its importance from points of view of both spatial analysis and project design. Certain conventions of graphic representation used by architects and urban planners offer possibilities for the difficult task of representing ambiances. Where the specific complexities relating to ambiances seem to resist representation in plan, pushing towards confusing juxtapositions of layers, sections can actually prove useful. Paradoxically, plan view does not easily allow for a positioning of the viewer "up in the air" in order to consider air as an integral part of spatial design. On the other hand, the section places the viewer face to face with the architectural volume, a receptacle of light and air, and allows for an understanding of the capacity of the building-envelope to modify or to determine climatic quality. The section can also express a diversity of interior conditions of ambiance and of relations of interior to exterior space.

The architectural section is habitually offers a static representation of volume, frequently expressing the constructive techniques of a building envelope and the built components that give order and functionality to its inner spaces. Used as an observational or analytical tool, it of what could be called a clinical viewpoint. At the same time, it has a potential for offering a more evocative, animated view of the space represented; the figuration of a "fill" of extra-architectural objects and/or of a more or less rich synchrony of practical gestures. Two sweeping, well-known examples of this capacity are offered by Charles Garnier's section and three-dimensional models of the Paris Opera, and by Richard Rodgers' Madrid Airport Terminal.

In a notably different way, since the late eighteenth century, representational approaches of geographers, geologists and, somewhat later, urban and landscape architects have developed a different conception of the drawn projection of a linear and planar cut. One notable example of a method of analysis and observation drawing on this tradition in the natural and human sciences is of course Patrick Gedde's "Valley-Section", which places particular emphasis on the "synoptic" potential of such drawings⁴, offering a broad typology of forms of human settlement and society that had emerged

¹ Nicolas Tixier (dir.) et alii, *L'ambiance est dans l'air. La dimension atmosphérique des ambiances architecturales et urbaines dans les approches environnementalistes*. Research contract PIR Ville et Environnement – CNRS – PUCA, 2008-2009. In collaboration with members of the UMR CNRS n°5194 PACTE, and the Department of Public Health of the University São Paulo. In association with the Urbanisme Service of the City of Grenoble and the Agency for Environmental Protection of the City of São Paulo (CETESB). The project is still under way (2008-2010). www.pirve.fr

² The first sections were conceived within the framework of the research and education project *Chaleurs urbaines*. www.grenoble.archi.fr/chaleursurbaines.

³ Concerning the notion of ambiance, cf. for exemple Jean-François Augoyard's article «L'environnement sensible et les ambiances architecturales», in *L'espace géographique*, n°4, 1995 or, more recently, «Ambiance(s), ville, architecture, paysage», in *Culture & recherche*,

n°113, décembre 2007, under the direction of Anne Laporte and Nicolas Tixier.

⁴ Cf. Helen Elizabeth Meller, *Patrick Geddes: Social Evolutionist and City Planner*, Éd. Routledge, 1993.

of long historical periods around the potentials offered by different natural milieus. It is important to note that this projection was “synoptic” not only in the sense that it summarized historical development but also in that it pointed to inter- or trans- disciplinary perspectives perhaps even broader than those that the German Geographer Humboldt had imagined in the first half of the 19th Century when he first drew the geographical section that would suggest the Valley Section idea to the Scottish urbanist. The drawing clearly if implicitly reflects the often highly evocative monographs and the systematic interweaving of disciplinary perspectives that Geddes developed in the form of his “thinking machines”.

Perhaps surprisingly, Geddes’ drawing remains highly schematic, its potential barely explored; it remains so today⁵. Reintroducing Geddes’ Valley Section into the discussions of Team Ten (and thus into architectural discourse) in the early sixties in a modified form reflecting contemporary concerns about city form, Alison and Peter Smithson reaffirmed the pertinence of both its specifically geographic and its more broadly interdisciplinary dimensions, though without developing its potential any further than Geddes himself had.

One idea further exploration of the potential afforded by Geddes’ conception of the geographic section might be to open it up to more directly to narrative fragments concerning urban life similar to those he collected in view preparing his civic surveys and, in so doing, to emphasize the full sensory and experiential richness linked to common spatial practices. Including in such sections the figuration of built space using convention architectural means might well contribute to this extension of the section’s metonymic capacity, that is its ability to tend towards narrative, despite its inherently static character. Favoring evocation, such an approach would not necessarily present a rigorous or exhaustive character and might not reflect the object of any one discipline in particular; on the contrary, the choice of elements to be expressed along the cut of the section would need to be selective, stressing emblematic “moments” in the meeting between architectural, sensory and social dimensions, between public and private realms, between mobilities constructed objects, etc. A more distanced perspective might also include readings of historical layers comprising the place, or the programmatic configurations it contains.

Such a conception of the urban section might extend its usefulness well beyond that of the classically drawn,

⁵ This hypothesis was explored in the project *Chaleurs urbaines* which preceded and inspired the present one.

dimensioned street-profile. In so doing, it might contribute to the interweaving and /or confrontation between diverse conceptions of space that has become indispensable for processes of urban design.

From section to transect

Since the beginning of the 20th century, walking has occupied a place both in the methodology of investigation on cities and as the fundamental mode of practice of urban space in itself. Among the well-known works on the subject to which our work refers is Jean-François Augoyard’s *Step by Step* of 1979 which propose a ground-breaking analysis the rhetorical dimension of walking⁶. Since the 1990’s, Jean-Paul Thibaud has developed the method of the “commented walk”, according much importance to the sensory components and technical aspects of the walker’s experience⁷. Following on the work of these two authors, many researchers have developed modes of analysis concerning everyday experience of walking in the city and a variety of means of representing their results, notable using photography, video and sound-recording techniques⁸. As interesting as many of there are, all seem more useful for analysis than for practice as they give little attention to the relation for architectural form, or to geographical context.

⁶ J.-F. Augoyard. *Pas à pas, Essais sur le cheminement quotidien en milieu urbain*. Paris : Éd. du Seuil, 1979. We could of course also insist on the importance of the writing of K. Lynch et al on the perception of city space by the walker and the motorist and, from the same period in France, the works of the writer Georges Perec, or those of the sociologist Pierre Sansot. Each developed in his own way a direct relation between ways of seeing, of hearing, the act of walking and modes of description of urban space from an immediate, “engaged” perspective. Cf. an article on “attempting to describe” by Georges Perec. Jean-Paul Thibaud, Nicolas Tixier, “L’ordinaire du regard”, in *Le cabinet d’amateur*, Toulouse, Presses Universitaires du Mirail, n°7-8, décembre 1998, pp. 51-57.

⁷ Michèle Grosjean, Jean-Paul Thibaud (dir.). *L’Espace urbain en méthodes*. Marseille, Parenthèses, 2001.

⁸ Cf. for example the territorial readings (through “mental maps”, “embarked observation”, “interviews conducted with map in hand”, “work sessions”) realized by Jean-Michel Roux around a stretch of highway, itself a veritable transect through the valleys of the Loire en France. Cf. *Runninghami*. Winning competition project of acoustic modification realized by Pascal Amphoux and leading to a design concept for a system of acoustic protection, DDE Loire, May 2005, currently under design, with F. Brogini (architect), N. Tixier et JM Roux (territorial analyses), L. Fachard (lighting designer), P.-Y. Nadeau (acoustician).

The term "transect" is used by geographers to signify a form of field observation unfolding along a straight line. It implies giving attention to the superimposed layers constituted by the life-forms and inanimate matter, and to the succession of spatial conditions and relations that these constitute in, spaces that the line cut through. Thus, in the first instance, the transect is not a mode of representation but rather of exploratory protocol that can give rise to a diversity of graphic or discursive explorations among the most obvious of which is the section-drawing. Though open to surprises and digressions, the posture of the walking observer that it implies is predetermined and more or less selective. Unlike the *flâneur*, the inquisitive nature of the transect walker leads him or her into particularly direct bodily engagement with the "terrain", as he or she *go through, cut across, jump over, go under etc.*

In effect, the idea itself of the transect goes back to the eighteenth century figure, the *arpenteur* or surveyor; often a scientist by training become surveyor-cartographer. No better example of such a figure could be imagined that that offered by Thomas Pynchon's epic novel *Mason and Dixon*⁹, a fictitious account of astronomer and surveyor's experiences during the years in which they traced the almost uninterrupted straight line bearing their names that was to provide borders for a number of American states. The novel of course goes far beyond the pretensions of the kind of urban transect of the kind we propose. What is the same however is the constant openness to hesitation between the disciplined precision of clinical observation and an attitude much more open to the distraction provoked by a seemingly endless succession of extraordinary personal, social and natural situations encountered along the line.

The transect as method or mode of experience was described by the *Situationists* in Paris and then practiced in recent years by both the group Stalker around Rome. In France, the *artiste-promeneur* Hendrick Sturm, equipped with a geo-localisation apparatus, narrates the life of certain neighborhoods in Marseille using visual as well as discursive means, willing engaging in transgressions of normative spatial conventions in order to... *go and see*.

Our initial working premise to develop a form of urban transect allowing for a mode of observation situated somewhere between the measured section and a walk whose purpose is to discover explore the sensory

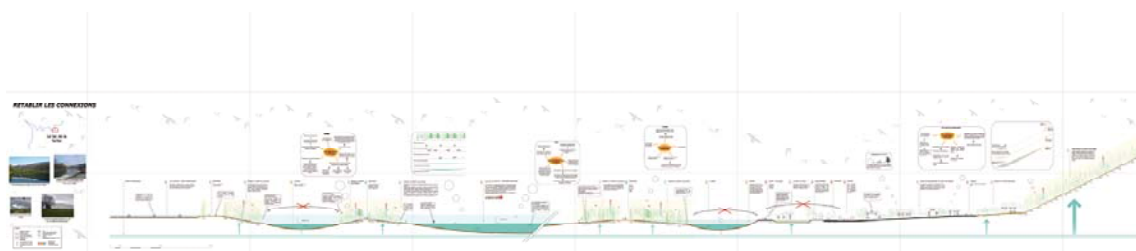
richness of a place; a *parcours sensible*. Having actively sought out meetings and experiences offered by a place, the idea was to develop a hybrid mode of representation, mixing graphic/ discursive techniques associated with both of these. Emphasizing the potential of architectural drawing to express the atmospheric dimensions of space, incorporating selected fragments of narrative where they could be found, the transect is thus redefined as an exploration of sensory experience and the spatial practices out of which they emerge, presented in such a way as to inform the design-process.

The approach acknowledges that fact that there is an important though often implicit rapport between ambiances and the expression of the uses and meanings of space in the contemporary architectural section. While the nineteen-seventies the notion of ambiance was being intensively explored and defined by Augoyard and others, architects like Reyner Banham and Cedric Price were asserting that the fundamental role of structure as a definer of architectural space and form had been definitively displaced by concerns of envelope and interior climate control. At more or less the same time ideas emerged about atmospheric quality as the definer, in and of itself, of habitable interior and exterior space, thus severely reducing or even eliminating the need for architecture.

Current architects such as Philippe Rahm have defined similar positions on atmosphere as architecture; of the discipline thus expanding its horizon of possibilities for "living use" while shedding the "burden" of its expressive and representational dimensions.

For our part, we have remained close to the expansive definition of the social realm as "physical like nature, narrative like discourse, and collective like society. In deploying elements of both the broad historical narratives of a city and the private "insignificant" stories of inhabitants and users, notably those concerning spatial qualities relating to atmosphere, can urban transects help designers to understand and to take into account relations between urban ambiances and environments? This question was first addressed in a master's level design studio we directed at the ENSA at Grenoble. The research being presented here constituted a second phase of exploration on the drawing of "urban climatic sections" in which the initial ideas received further development. The design-studio and seminar component of the work will continue into the 2009-2010 academic year; work on sections will continue with a new emphasis given to use of video as a means of registering the field experience of the walked transect.

⁹ *Mason & Dixon* is Thomas Pynchon's fifth novel, published in 1997, 773 pp. New York: Henry Holt & Company.



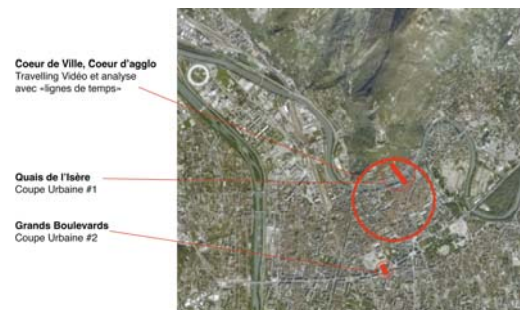
Urban sections « Summer Heat in the City » Master's Studio of 2007-2008, under the direction of S. Melemis and N. Tixier. (original size : just over 4 meters in length)

Urban Transects : Field Protocol and Graphic Sections¹⁰

The first questions to be addressed involved the choices of terrain and the precise paths the transects should cut across them. After some discussion, the decision was taken to focus on areas presenting contrasting climatic characteristics. The first was a portion of the historic centre, with its narrow winding streets and stone constructions of an average of four or five storeys, situated along the Isère River across from a steeply climbing urbanized mountain face called the Bastille.

The city's broad, mid-twentieth century boulevard and the mostly concrete residential buildings of eight storeys on average that line it served as a second terrain.

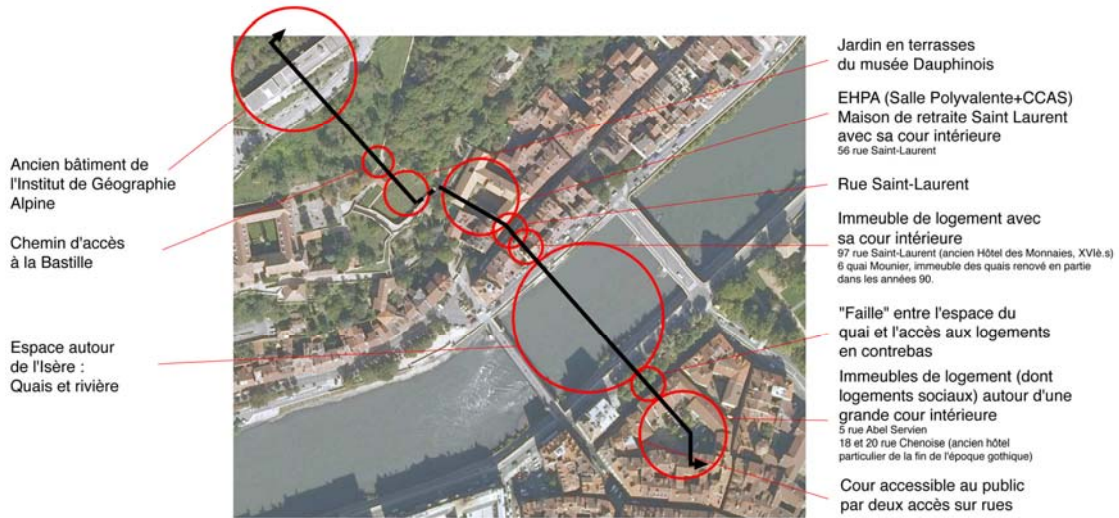
In addition to the obvious contrast in terms of urban form and the resultant differences of indoor and outdoor summer ambiance, these sectors were chosen based on the fact that both were sites of important urban design projects, one of which was recently completed (the city's third tramway line had recently been installed in the middle of the boulevard) and the design of the other, concerning the banks of Isère, only recently begun.



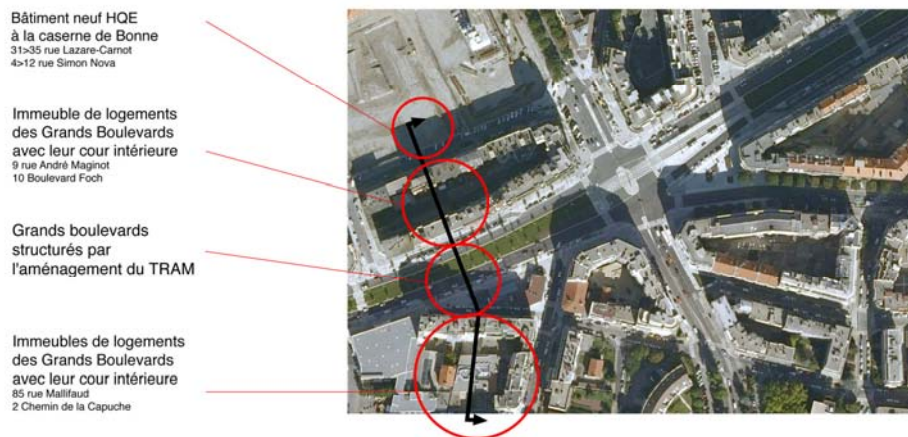
Sectors Selected for Study in Grenoble

¹⁰ Section drawings : Zoom (Naïm Aït Sidhoum, Pierre Bouchon Cesaro, Thibaut Candela) + Laure Brayer + Damien Masson.

COUPE URBAINE #1 : LES QAIS DE L'ISERE



COUPE URBAINE #2 : LES GRANDS BOULEVARDS



Grenoble sections

Once the transect lines had been determined, the field observation started; perceptible differences in terms of wind, shade and warming from sunlight etc. were noted at different times of day. Measures of ground temperature were regularly taken. Typical built components engendering typical characteristics of thermal ambiance were identified and described; narrow streets with their particular wind-effects, shaded interior courtyards, apartments with sloping roofs oriented to the

south, the spaces and micro-conditions of the urban boulevards etc. Often dramatic differences in ambiance were discovered and described. The meeting between these elements and the movements of our own bodies and those of people spontaneously met in the urban spaces combined to produce effects that we attempted to identify and characterize both through bodily sensations and the ways we and others attempted to describe them in words. This material essentially

provided the basis for the sections that were subsequently drawn.

Noting the street names and the numbers of the buildings the transect crossed, we consulted the building permits in the City Archives in order to obtain the necessary information to draw measured sections. The drawings helped us to plot the precise course of the section (and for example to discover that at one point it cut directly across the swimming pool of a fitness club), and also provided information about an interior courtyard that we were unable to obtain access to. Though in this instance we did not choose to do so, the initial drawing of the section could have allowed us to resituate the transect in order to have it follow the most interesting path possible.

The encounter with the site conditions allowed us to repose the problem of how the section might be drawn. In what sense might we be able to get beyond a primitively empirical, purely descriptive attitude to the places? How might we construct meaningful « clusters » of information and narrative concerning specific points along the way? Might it be possible to have too much or too little of one kind of quantitative data, an excess or poverty of narrative content? How might the quantitative data (on ground and *ambient* temperatures, wind currents, light levels and movements etc), be best represented graphically? What place should be given to « expert » and « vernacular » modes of knowledge about climate? In handling such knowledge, was it absolutely necessary to observe the rule of using only situated commentary?

Finally the gathering of material was carried out in the following way:

Quantitative aspects:

We started by collecting available quantitative information from the Urbanism Bureau of the Grenoble Region (Agence d'Urbanisme de la Région Grenobloise - AURG). This include radiant temperatures of ground surfaces recorder using infra-red aerial photographs. These average levels are accurate to within a distance of thirty meters.

Having studied this information, we then took our own # measurement *in situ* during sunny summer weather. Using a thermometer and a thermal camera we measured ambient temperatures, and the radiant temperatures related to ground-surface. This provided gave us an image at of "micro" scale that the AURG data did not.

Qualitative aspects:

Interviews were conducted in a « semi-directed » fashion with city technicians and professionals, and with users/inhabitants; the people interviewed were aware of our research interests but then manner in which they responded to issues of summer climate were left largely open for them to decide.

A principle of sampling was applied: the initial intention to interview precisely the people whose dwellings were represented in the section. We thus contacted these people by telephone. Confronted with the reticence of many people to be interviewed, we often had to seek out people living nearby in what we assumed to be similar conditions. These included not only people living in the area but also neighborhood associations, business owners, residents of retirement facilities and passers-by, etc. The resultant interviews revealed practices and minor invention intended to attenuate the effects of very high temperatures and humidity and gave an evocative image of the differences and similarities among people's experiences.



Discussion around the section – Interview, April 19th 2009

The conducting of the interviews:

Several printed documents were brought to the interview: the initial version of the measured section, an aerial photograph indicating the path of the transect and three aerial photos at different scales (the neighborhood, the Greater Grenoble, and that of its situation in the valley between three mountain-ranges). We encouraged people to make notes directly on the section. With each new meeting, the interviewers evoked certain elements raised by in previous discussion in order to identify the ones which could be considered « recurrent », and in order to discover link different people's narratives together around common ground. Many people experienced difficulty in understanding the section and were timid about drawing; the recurrences were thus most frequently encountered in the discourses.

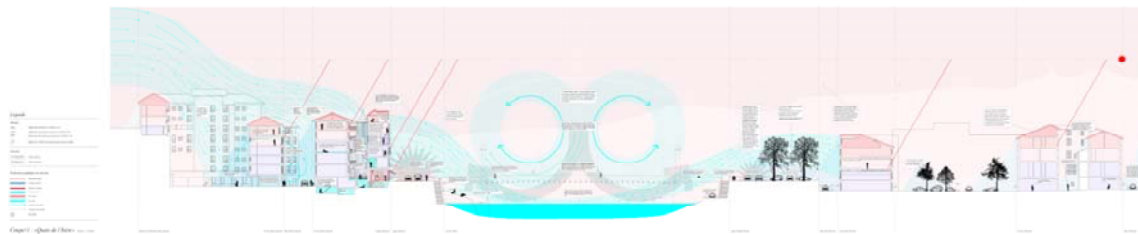
Graphic transcription of the material collected:

Given the diversity of content and of “registers” of knowledge – professional, scientific, everyday – encountered in the interviews makes it difficult to define the knots or threads of meaning that would tie them together. At the same time, it is in this very potential for connection, and perhaps a some kind of discursive hybrid, that the promise of the approach lies. The problem is rendered still more difficult by the need to situate the narratives collected spatially; to take into account what people point out as they speak, and the ambiance in which they are situated as they do. We were interested in by the potential of the sections to “situate” what was said in the richest and most telling way possible. Doing so poses numerous problems having to do with the way distinguishing (graphically) different

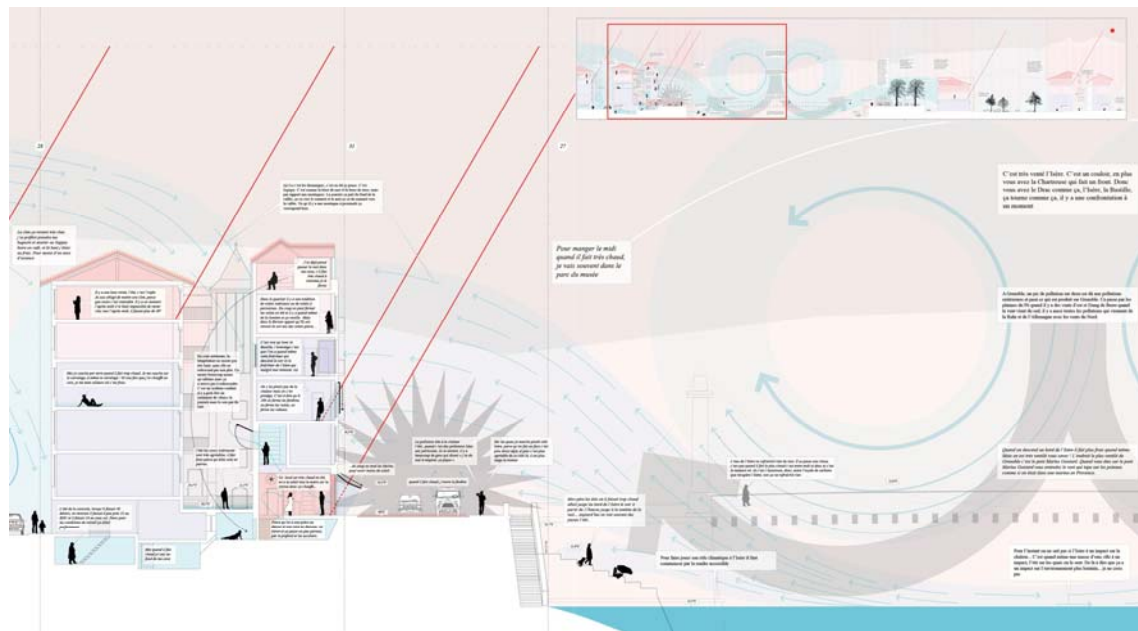
senses of context and spatial scales to which the different narratives refer.

Colors and graphics were used in a very simple way:

- blue for coolness, red for heat, with different nuances between the two representing intermediate temperatures
- The background colors represent the AURG temperature readings
- The more precisely situated readings we took are indicated with markers
- Air movements are shown with arrows, much as in meteorological maps, or charting of water currents in nautical ones
- the inhabitant's techniques for dealing with extreme heat are translated graphically. -- some of the words spoken are incorporated along with some of the bodily gestures that accompanied them



*Section through and around the banks of the Isère River
(length of the printed drawing was over four meters)*



Zoom on section through and around the banks of the Isère River



The Grands boulevards
(length of the printed drawing was over four meters)

Quotations from the interviews have been placed directly in the drawings inside cartoon bubbles, essentially at the places where they were collected. This double process – thus associates what was said with the bodily gestures of the speaker and the context in her or she spoke. It allows for a simultaneous and connected vision of measurable quantities and perceived qualities and – potentially – for a drawing together of structure / expert and empirical / quotidian ways of knowing.

Towards a “positioning” of the expressive capacities of the section

Through these first explorations we were able to identify of a number of principles concerning what might be expressed by the urban section, and a corresponding hybrid of graphic strategy within which different graphic and discursive languages or conventions are freely combined.

The analysis of the narratives that were collected, lead us to divide the words collected into two main groups. The first contains commentaries that could be considered to constitute the central issue explored in drawing the sections: 1) the expression of effects of summer heat experienced and the contexts in which they arouse 2) the critical assessments by people of the living spaces “imposed upon” or “given to” them 3) the practices and the patterns of movement provoked by hot summer weather 4) the tactical capacities of users with respect to the spaces they inhabit or work in on a daily basis.

The second sort of commentary more or less explicitly defined openings into broader narratives in which the question of summer heat was simple one element. These narrative possibilities concerned: 1) collective and individual memories 2) how in talking about summer heat, connected stories would suggest themselves (concerning the rapport with a building superintendent, a problem linked to the technical qualities of shutters, how feeling humidity can affect one’s mood, the price of a weekend in the freshness of the mountains to escape

summer heat...) 3) the evocation of « scenes » or « decors » of summertime (old people on park benches, young people on the banks the banks of the river...).

These elements might suggest possible stories in which summer heat played role with necessarily being the central issue or might take the form of veritable intrigues, digressions leading out of one story and into another.

The presentation of these different narrative contents in the graphic form of the section requires a judicious selection of excerpts while begging the question of how they will – and to what end – they will be deployed. Should all the voices speaking be treated basically in the same way, as if all were of equal value? Would it be preferable to use graphic means to underline differences in register among these voices? How might one distinguish graphically between more conceptual, distanced, “overhanging” points of view and others embodying a more direct and immediate bodily engagement in space? How might one distinguish between expressions of a precise situation and ideas that do not speak of any one place in particular?

In exploring all these questions and possibilities, might it be possible to distinguish emergent forms of collective experience, implicitly or explicitly engaging a significant group of people in something like what Bruno Latour calls a “controversy”¹¹?

¹¹ Cf. Bruno Latour, *Nous n’avons jamais été modernes. Essai d’anthropologie symétrique*, Editions de La Découverte, 1991.