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André Wogenscky´s early housing works (1956-70): The relation between body, interior atmospheres, and envelope

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ABSTRACT

For twenty years, André Wogenscky was one of the most devoted collaborators of Le Corbusier. This article discusses his early independent works (1956-70) on the relation between the human body, the architectural space and the climate. As an evolution of his master's lessons, this paper focuses on his approach to living atmospheres and the inhabitant's perceptions that apply to housing projects. It is based on original research of Wogenscky's files at the *Centre d'archives d'architecture du XXe siècle* in the *Institute français d'architecture*.

Keywords: Wogenscky; thermal comfort; senses; modern architecture.

"The character of a space or place is not merely a visual quality as is usually assumed. The judgement of environmental character is a complex fusion of countless factors which are immediately and synthetically grasped as an overall atmosphere, feeling, mood, or ambience." Juhanni Pallasmaa[1]

The predominance of the "ocular-centric" approach in historical studies of modern architecture turns the inhabitant into an outside observer whose spatial experience is not conceived as sensory inclusive. Nonetheless, a thematic review of modern architecture that focuses on architectural atmospheres design and perception reveals that sight was not the only sense recalled by modern architects.[2] Based on an original research of Wogenscky's files at the *Centre d'archives d'architecture du XXe siècle* in the *Institute français d'architecture* (IFA), this article reveals the sensory understanding of architecture present in the early works of the architect André Wogenscky (1916-2004). As a legacy of his period working in the office of Le Corbusier (1936-1956), Wogenscky enhanced a theoretical and material approach to the housing atmospheres and the inhabitants' perception in his early works (1956-1970).

Wogenscky was one of the main collaborators of the *Atelier 35 Rue de Sèvres* (Atelier 35S) office between 1936 and 1956. During this period he became crucial for it in both practical and intellectual senses.[3] In September 1957, he ended his professional relationship with Le Corbusier,[4] closing a period that had started twenty years previously and that had left him with a unique professional background.[5] Subsequently, he remained in charge of the projects

[1] Juhani Pallasmaa, "Space, Place and Atmosphere: Peripheral Perception in Architectural Experience," *Arkkitehti* 5 (2011): 21.
[2] Juhani Pallasmaa, *The Eyes of the Skin* (New Jersey: John Whiley and Sons, 2005).
[3] Colleagues and clients recognised his contribution, such as José Luis Sert and André Malraux.
[4] He bid farewell with a kind but reclaiming letter to Le Corbusier. Cf. A. Wogenscky, letter to Le Corbusier, 4th September 1957, FLC R3.08.81.
[5] Wogenscky worked for four years (1936-1940) as a draughtsman and designer; for thirteen years (1942-1955) as an architect and office manager responsible for work organization after Pierre Jeanneret's resignation (1940); and almost two years (1955-1957) as an external contributor from his own office.

for the Master plan and the *Unité d'habitation* in Meaux (1957), as well as the *Unités* in Berlin (1956-1957), and *Briey-en-forêt* (1956-1963).[6]

Wogenscky's independent works show a clear LeCorbusian influence that he patiently developed according to his personal thoughts and methods. Like other Le Corbusier disciples (e.g., Josep Lluis Sert and Georges Candilis), his work was circumscribed by his own evolution of modernists' precepts rather than by a collective work, such as his Brutalist French colleagues Claude Parent and Roger Taillibert.

Wogenscky's initial period of professional and conceptual strengthening was marked by the context of the Atelier 35S in the late-1940s and 1950s when he worked side by side with other brilliant colleagues and collaborators such as Iannis Xenakis, Vladimir Bodiansky, and André Missenard. However, Le Corbusier was always his main influence, as he once noted, *"J'étais dans l'ombre, oui, mais quel soleil!"*[7] In particular, at that time the office focused on design processes and architectural devices as a way to ameliorate living atmospheres in a global sense. Influenced by the engineer Missenard, they manifested this tendency in both passive and active approaches to architectural environments. Despite being forty years old when he started his first independent practice, Wogenscky devoted his time to the delicate exercise of single and collective housing design. These works were followed by French public commissions, constituting his early period (1956-1970). Then he opened to international projects in Lebanon and the Middle-East (1961-1983), after which he came back to France (1984-1991), and finally he designed projects for Japan (1983-2003) until the end of his career.[8]

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[6] The process, far from being traumatic, only meant a relative professional separation. Their personal relationship and mutual recognition was endless. The episode of the *Cantine* (Marçon, 1957) project was evidence of it. Cf. Le Corbusier, letter to A. Wogenscky, 3 October 1960, FLC R3.08.65.

[7] Dominique Amouroux, *André Wogenscky* (Paris: Editions du Patrimoine, 2012), 25.

[8] For more personal and professional career details please refer to: François Barré, *Oeuvre Croisé : André Wogenscky, Marta Pan* (Paris: Cercle d'art, 2007); Paola Misino and Nicoletta Trasi, *André Wogenscky. Raisons Profondes de La Forme* (Paris: Le Moniteur, 2000); Amouroux, *André Wogenscky*.

Wogenscky's early housing works[9] reflect his awareness of the inhabitant's sensory experience in a tactile way that complements the visual one. As his book *Architecture Active* (1972) demonstrates, he conceived architecture as a haptic experience in which the body and the atmosphere that surround it were always exchanging energy.

ARCHITECTURE, INTERIOR ATMOSPHERE, AND THE BODY

Although the notion of space was commonly assumed to be central to Modernism,[10] hygienic considerations are nowadays considered by other researchers to be one of its main roots.[11] Thus, the notion of milieu promoted the quest to achieve rational control of human environments in order to heal diseases and to promote healthy behaviours. The hygienic criteria matched health and architecture, creating a tangible relationship between the human body and its surrounding environment.[12]

Wogenscky´s work can be considered in the same vein. He argued in favour of understanding architecture as the human necessity to adapt to natural context in order to make human activities possible.[13] In fact, he promoted an abstract appreciation of architecture such as the process of constructing the *milieu physique,* as opposed to the *milieu natural*; hence architecture became an interface that manages the relationship between the inhabitant perception, properties of the indoor environment, and the climatic constraints. As Wogenscky concluded, the purpose of architecture is to *"fabriquer des abris pour protéger son corps,*

[9] From his very early independent projects to the end of his first French works period.

[10] Grégoire Chelkoff, "De l'espace à l'ambiance : Formes sensibles de l'architecture et transformations de l'environnement Urbain" (Université de Grenoble, 2005).

[11] For instance: Beatriz Colomina, *Privacy and Publicity: Modern Architecture as Mass Media* (Cambridge: The MIT Press, 1994); Michelle Addington, "Contingent Behaviours," *Architectural Design* 79, no. 3 (May 2009): 12–17, doi:10.1002/ad.882.

[12] Beatriz Colomina, "The Medical Body in Modern Architecture," in *Davidson, C. "Anybody"* (Buenos Aires: MIT Press, 1997), 228–39.

[13] Moreover, his definition of the natural environment was always made in opposition to the *milieu artificiel.* André Wogenscky, *Architecture Active* (Paris: Casterman, 1972), 18.

pour l'abriter des pluies, pour garder sa chaleur, pour s'accorder mieux à son milieu cosmique."[14]

His texts provide evidence of the main role that he assigned to the envelopes, which mediated between indoor and outdoor environments, and also to the indoor atmospheres, which he called the "artificial climate" as a result of the procedures for regulating indoor environmental conditions (air, light, and sound). The use of this term reveals the influence of André Missenard (1901-1989), an engineer that developed the notion in order to join the knowledge and techniques from the physics of architectural environments (air temperature, radiant temperature, humidity, and air velocity) and the human response to these stimulus (physiological and behavioural).[15] Missenard collaborated with the Atelier 35S´s projects from the *Unité d'Habitation* in Rezé (1952) until the early-1960s and contributed to the development of the design method named the *Grille Climatique* (1951).[16]

Missenard extolled the therapeutic value of architecture and its environmental services, as well as the fact it could help to overcome human shortcomings,[17] which gave it a key role in the construction of the *Homme Nouveau*. Documents preserved in the FLC archive[18] prove the professional relation between Wogenscky and the French engineer, as well as the former´s interest in the latter´s books. As a result, Wogenscky's approach to atmospheres and inhabitants cannot be understood without Missenard's theories, as he stated in his own words: *"L'enveloppe devrait être un réglage précis et variable de l'hygrométrie. Le bain de juste température. Il faut que notre peau évapore et qu'elle perde des calories. Mais pas trop. Juste*

[14] "To produce the shelters for protecting the body, for sheltering it from the rain, for preserving its heat, for according it better with his cosmic milieu". Ibid., 17. Author´s translation.
[15] Ignacio Requena Ruiz, "Bioclimatismo En La Arquitectura de Le Corbusier: El Palacio de Los Hilanderos," *Informes de La Construcción* 64, no. 528 (2012): 549–62, doi:10.3989/ic.11.121.
[16] Daniel Siret, "Soleil, Lumière et Chaleur Dans L'architecture Moderne: Excursions Dans L'oeuvre de Le Corbusier," *L'Émoi de L'historie*, no. 34 (2012): 177–93.
[17] André Missenard, *L'Homme et Le Climat* (Paris: Librairie Plon, 1937).
[18] Cf. A. Missenard, letter A. Wogenscky, 13 December 1954, FLC A3.13.70.

réglage de température et d'humidité, et de mouvements d'air, et de rayonnements. L'architecture est créatrice de climats artificiels très agissants sur notre santé".[19]

Wogenscky's method

According to Wogenscky's collaborator Pierre Lagard,[20] the architect conceived the architectural project as a creative process aimed at materialising an inhabited building. Therefore, he consciously avoided all sort of expressive drawings during the early conception phase to prioritise his thoughts about architecture's materiality and usability. In Lagard's view, *"il se méfie de tous les moyens de représenter le futur édifice : pour lui, l'architecte doit 'voir' son bâtiment grandeur nature, dans la vie, avec des gens à l'intérieur".*[21]

The project was almost entirely conceived in Wogenscky's mind solely with the aid of discussions with clients, functional schemes, and a topographical survey. He then translated his ideas to construction plans,[22] avoiding the use of perspectives that could trick the designer's mind due to its plasticity. This method was characterised by accurate studies, long tune-ups, construction of prototypes, effective construction procedures, and re-use of the system if the results were satisfying.[23] These practical methods made his work like that of the industrial designers: similar to his colleague Jean Prouvé.

The Modernist's aspiration to standardise human differences in its metrical and physiological parameters triggered, in Le Corbusier's case, an anthropometric viewpoint that was supported on the *Modulor*. Wogenscky continued with this idea being at the core of his architecture, but this was not only to be understood to have a metrical meaning. As he observed, architecture should take into account *"les mensurations humaines, la taille de l'homme, l'envergure de*

[19] "The envelope should be an accurate and variable tuning of the hygrometry. A bath at the right temperature. It is necessary that our skin evaporates and losses calories. But not too much. The right adjustment of temperature and humidity, and air movements, and radiations. Architecture is a creator of artificial climates very effective for our health." Wogenscky, *Architecture Active*, 27.

[20] Fondation Le Corbusier, *Etre Architecte Hommage À André Wogenscky* (Paris, 2005), 1.

[21] "he distrusts all the ways to represent the future building: for him, the architect must 'see' the building in full-scale, in the life, with the people inside" Ibid.

[22] The research in the IFA archives in Paris on this period only showed the sketches of functional abstract schemes.

[23] Amouroux, *André Wogenscky*. Ob. cit.

son corps et de sa 'bulle psychologique'"[24], because *"tout en architecture est dicté par l'homme, pour l'homme"*.[25] In his housing projects, the sense of touch was involved from the construction plan phase, where he detailed meticulously all elements that should be in contact with the body or that should mediate the environmental relationship with the outside, such as exterior and interior woodworks, bathrooms, and fireplaces.

MEDIATING ENVELOPES

For the construction of artificial climates, the envelope was necessary in order to regulate the indoor effect of sunlight radiation and wind. Thus, exterior walls dealt with climate by modifying the admittance of solar rays and by their permeability to air currents.

Sunlight control

Le Corbusier's technical and sensory concerns about sunlight were also held by Wogenscky. He learnt the Master's design techniques by applying geometrical procedures to predict solar angles and to control sunlight effect.[26] He took part in the design process of the initial *brise-soleil* prototypes for the *Usine Claude et Duval* (Saint-Dié, 1947-51) and the *Unité d'habitation* (Marsella, 1947-52). Supported by the technical skills of the AtBat (*Atelier des Bâtisseurs*), Wogenscky learnt how to develop studies on sunlight, projected shadows, and interior daylight levels.[27]

The relevance of studying sunpaths in architectural design was another of the Master's lessons that Wogenscky followed: *"le Soleil conduit l'espace architectural à une anisotropie*

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[24] Notes for the conference *"Réflexions sur la 'beauté' architecturale"*. Misino and Trasi, *André Wogenscky. Raisons Profondes de La Forme*, 117.

[25] "…the human measurements, the size of the man, the size of its body and its 'psychological bubble'", because "everything in architecture is dictated by the man, for the man". Unpublished personal letter found in his correspondence at the archives of the *Fondation Marta Pan – André Wogenscky.*

[26] Ignacio Requena Ruiz, "Medio Ambiente Y Modernidad En La Obra de Le Corbusier a Través Del Dibujo," *Expresión Gráfica Arquitectónica* 20 (2012): 246–55.

[27] An example is the plan FLC 09452 or FLC 26386.

dynamique (...) dépendant de l'heure, de la saison, du temps." [28] From the very beginning the disciple had a practical viewpoint that focused on the geometry and functionality of the *brise-soleil*, rather than on its sensory and environmental powers supported by Le Corbusier.[29] In this sense, Wogenscky based his initial designs on the purely functional *brise-soleil* of the *Usine Claude et Duval*: the device was an exterior structure shaped according to the shading criteria. His early singular housing projects neatly represent this approach, and more specifically the example of the *Villa Chupin* (Saint-Brévin-l'Océan, 1959-60).

The height/depth proportion of this *brise-soleil* demonstrates his knowledge of solar angles, and allows winter radiation gains as well as protecting from direct summer sunlight. Nonetheless, as it happened with the many *brise-soleil* that Wogenscky designed during this period, there is no documentary evidence of shading or sunlight studies, which were commonly used by the Atelier 35S. The calculation procedure seemed to be completely implicit in the architect's mind: it therefore disappeared completely from the drawings.

As with the original one, this *brise-soleil* was materialised as a reinforced concrete structure that framed large sets of windows. Moreover, it was built slightly separated from the geometry of the house and was not accessible to the inhabitants, and as such it completely lost its power as an in-between space that extended the inside program to the outside. In general, its main functions were to control indoor solar radiation gains and to materialise sunlight through shadows and textures. Wogenscky also added his personal input giving the *brise-soleil* a sculptural character by using concrete surfaces that were built with wooden frameworks.

This contribution was even more evident in the *brise-soleil* built in the medicine faculties in the Necker (Paris, 1963) and Saint-Antoine (Paris, 1965) hospitals. These *brise-soleil* were

[28] "The Sun led the architectural space to a dynamic anisotropy (...) depending on the time of day, season, weather." Wogenscky, *Architecture Active*, 27.

[29] In 1943 Wogenscky wrote the article Réglage de l'ensoleillement that provided evidence of this. André Wogenscky, "Réglage de L'ensoleillement," *Techniques et Architecture* 7–8, no. Le soleil (1943): 207–11.

designed as series of small-scale objects which responded to the indoor requirements that fit in within the entire context of the façade. The combination of the window's framework and the shading device cut the view into four parts. From bottom to top these four areas are: a blind but translucent space that preserves privacy on the inside; a view of the city's environment; a view of the sky; and, lastly, a view of the *brise-soleil´*s concrete texture.

Wogenscky tested and evolved this second type of *brise-soleil* in many other buildings, such as the *Préfecture Hauts-de-Seine* (Nanterre, 1972) and the *Maison de la Culture* (Grenoble, 1967). This process manifests the architect's patient approach to research; a method that was based on his own *savoir-faire* and aesthetics on sunlight in architecture.

Works such as the *Maison des Jeunes et de la Culture* (Annecy, 1962-65) show, in juxtaposition, how Wogenscky's involvement in Le Corbusier's *Unités d'habitation* settled a different approach for his social housing projects. His contribution to these projects was also based on a patient research on the Master's *loggia brise-soleil*.

Wogenscky studied the components of the loggia to improve the construction´s standardisation, prefabrication, and assembly. The Atelier 35S's combination of two types of concrete surfaces, rough (gravel finished panels) and smooth (*béton brut*), for lattices, jambs, and parapets, was changed by a simpler solution: all the elements were replaced by a parapet composed of a precast concrete railing on the top and a metallic lattice. Consequently, the functionality of the *brise-soleil* as an in-between space and a shading system inspired by Mediterranean loggias was preserved, although the privacy that the initial device provided by protecting from outside view was almost completely lost due to the lattice change. Figure 3 reveals that the regularisation of the apartments' typologies led to a uniform framework without horizontal blades or two-story loggias.

Air permeability

The indoor air control promoted by physiologists and engineers from the 1930s was the trigger that made the industrialists and scientists believe in the complete control of indoor climates. By using both passive and active strategies, they advocated for the creation of indoor atmospheres that approached thermal comfort in the biological sense; and promoted standard environmental conditions regarding temperature, humidity, and air velocity. Their approach to comfort and environmental systems was included in the work of modern architects like Alvar Aalto or Le Corbusier from the late-1940s onwards. Hence, in the late-1950s, architects of the next generation such as Wogenscky, Sert or Aldo van Eyck favoured an architecture that exchanged air with the outside, with the aim to produce the healthiest conditions possible and to improve the inhabitant's harmony with respect to changes in the climatic conditions.[30] In spite of this, passive air exchange was complemented with weatherising techniques.

The regulation of the envelope's permeability was undertaken by the *aérateur*, a specific door for ventilation purposes that was integrated into the window's woodworks. The system, which was also developed by the Atelier 35S and by Missenard in the Indian projects, was implemented by Wogenscky for his housing projects.

For the *Villa Chupin* project as well as in many others, Wogenscky evolved a device that he had already designed for the *Maisons Jaoul*: the *quatrième mur*. The architect put together *aérateurs* and windows as an unbreakable unit that constituted a single façade. According to the *Modulor* rules, this rigorous geometrical composition combined glazed windows, casement wooden or metallic panels, and fixed panels. As Figure 4 shows, the device is comprised of different proportions, arrangements, and aperture senses for *aérateurs* and doors, which allowed inhabitants to regulate the open/closed ratio of the walls and the

[30] Wogenscky, *Architecture Active*, 19.

ventilation flow. Although this system was generally used by Wogenscky, the variation of the *pan-de-verre* was patented by Le Corbusier.

In his own evolution as an architect, the disciple also adapted the *quatrième mur* for works that had budgetary constraints. He resorted to simplifying the solution with a standard set of windows and *aérateurs* that were repeated in all the apartments or houses. Figure 6 illustrates this variation in the *Lotissement Chupin* (Saint-Macaire-en-Mauges, 1959-60) workers' houses.

INDOOR ATMOSPHERES

Wogenscky's approach to the inhabitants' health and their sensory perception meant that air was of paramount importance as it was the way of exchanging energy with the human body and creating interior atmospheres. He also understood heat and sunlight as corporeal elements that in parallel questioned the senses of sight and touch, and constituted a more complex experience. Wogenscky observed, *"les aveugles sentent la différence d'une pièce obscure ou d'une pièce lumineuse. Ils perçoivent parfois des stimulations différentes suivant la couleur qui les entoure. L'être vivant est irradié par la lumière."*[31] Indeed, his works reveal a rich understanding of the senses involved in architecture, and integrating sight with other senses in the haptic experience of space.[32]

Weatherised interiors

The control of the sunlight accessibility interacted with the indoor atmospheric conditions of daylight and temperature, although it was not the only method used by Wogenscky to create his "artificial climates". His background in the Atelier 35S, as well as Missenard´s influence in the thermal management of environmental conditions predated his early inclination for the

[31]"Blind people feel the difference of a dark room or bright room. They sometimes perceive different stimuli according colours of their surroundings. The human-being is radiated by light." Ibid.
[32] Pallasmaa, *The Eyes of the Skin*, 11.

radiant floor heating technique. This system was generally perceived by the architects in the 1940-50s as a modern engineering contribution oriented to achieving health rather than accomplishing the best performance of the conditioning machinery.[33] Wogenscky first came into contact with the technique in the *Unité d'habitation* in Rezé (1952). Therefore, he mainly implemented the system in the *Unités d'habitation* projects, building upon his LeCorbusian legacy.

However, the heated slab has mainly been found in Wogenscky's plans as an early proposal for several projects. For instance, in his *Maison familiale-atelier de sculpture* (Saint-Rémy-lès-Chevreuse, 1950-52), the architect sketched a big 1:5 detail of the heated slab and the flooring materials, yet he did not install it. The house was finally heated by a traditional fireplace placed in the living room, which was subsequently complemented with standard radiators for the entire house. Until the mid-1960s, he continued proposing the heated slab but only in the construction reports of the projects, as he noted "the heating system is foreseen by radiant panels embedded in the slab".[34]

The dissemination of air-conditioning systems in the 1950s reported to modern architects the illusion of using a technique that totally controlled indoor atmospheres. Then, Wogenscky began to consider it as an alternative. For example, in the *Lotissement Chupin* project the architect suggested both systems to be contemplated, *"chauffage par rayonnement : grilles et circulations en tube acier étiré sans soudure"*, or a *"chauffage par air chaud pulsé : distribution par gaines situées en plafond."*[35] Despite the air-conditioning system not being accepted for this project, he reconsidered the system once again for the *Maison Européenne* (1960) competition, which he won with a project entitled *Maison familiale extensible* "MEX".

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[33] Emmanuelle Gallo, "Modernité Technique et Valeur D'usage, Le Chauffage Des Bâtiments D'habitation En France" (Université - Paris I Panthéon Sorbonne, 2006).

[34] André Wogenscky, *SAMP EN 23 99: Coupe transversal du batiment B* [Plan in bumwad paper]. Scale 1:20. Paris, June 1959, Institut français d'architecture, 85 x 120 cm.

[35] André Wogenscky, *SMMI EN 21 866: Coupes sur les éléments A, B et C* [Plan in bumwad paper]. Scale 1:20. Paris, December 1959, Institut français d'architecture.

In this collaboration with the architects Henri Chauvet and Jacques Lavot, Wogenscky envisaged a prefabricated house that allowed indefinite extension. Starting from a main core, the house would grow according to the inhabitants needs.[36] In this regard, the air-conditioning plan shows a boiler room near to the living room, named *"chaufferie"*, as well as the boiler system, called *"chaudière à charbon ou à mazout"*. Begining from this point, a network of independent air-ducts is used to conduct the weatherised air to each one of the designed or extended rooms, giving the design an adaptability.

Touchable heat

Wogenscky's visual and tactile approach to the heat phenomenon made him receptive to the importance of restoring the anthropological value of heat and fire,[37] which both the heated slab and blown-air heating systems had hidden from the inhabitant. The collaboration with his wife, the Hungarian-French artist Marta Pan (1923- 2008), gave the fireplaces a sculptural value that increased the haptic experience of heat. Their first attempt was with their fireplace in their *Maison familiale-atelier*, whereas the most emblematic example is the *Villa Chupin* chimney.

As a result of a budgetary restriction imposed on him by the owners due to the fact they saw the house as a summer holiday retreat, the project focused on achieving thermal comfort in summer conditions whilst saving money on all issues concerned with winter comfort. Consequently, the walls' thickness was reduced to 15 cm and the thermal insulation and the heating system were not implemented in the design.

The only thermal device preserved was the fireplace, although throughout the design process it was drawn outside the house in front of the main façade, enhancing its ability to be used as a cooking device instead of a heating one. Wogenscky's sketches (Figure 8) reveal design

[36] André Wogenscky, *La Maison Extensible «MEX»* (Paris: Cimaise, 1960).
[37] Luis Fernández-Galiano, *El fuego y la memoria: Sobre arquitectura y energía* (Madrid: Alianza, 1991).

work on the shape in order to be able to integrate it into the garden. It was not until the very end of the project phase when the owners decided to reconsider the position of the fireplace; they decided to move it into the living room, allowing for the possibility of maximising thermal comfort in winter.[38]

Finally, the architects removed the exterior fireplace from the construction plans and designed a new open chimney closer to where the inhabitants would be living. The fireplace, the chimney tube on the first floor and the smoke exit in the roof were separated from the walls, and thus occupied a particular place in several rooms. In the building plans the iron construction was meticulously detailed on a 1:5 scale.

CONCLUSIONS

This article shows how André Wogenscky, as a consciously modern architect, emphasised that the design of architecture should be seen as the construction of an artificial climate that gives inhabitants an optimal environment. Going beyond the early-modern hygienic approach, he conceived a multisensory relationship between the human body and architectural atmospheres, which paid special attention to biological effects and spatial perception in terms of daylighting, temperature, and air quality: something which reveals a personal evolution that stem from Le Corbusier's lessons.

In my opinion, Wogenscky's methods of manufacturing architectural atmospheres were based on his experience at the Atelier 35S. Nonetheless, he evolved his master's lessons to develop a more sensory comprehension of space and intensify inhabitant's perception of architecture. This can be seen by his attention to the tactility and permeability of the envelope, the environmental parameters of the air, and the visual expression of heat. By restoring the notion

[38] As an example please refer to the following sketch by Wogenscky, André: *SBC TS 9.4.59* [Sketch on onionskin paper]. Scale s/e. Paris, April 1959, Institut français d'architecture.

of *climat artificiel* he built a corporeal experience of modern architecture that was far from the spatial aseptizing commonly attributed to modern architecture.[39]

Wogenscky's passive mechanisms like the *brise-soleil* or the *aérateur* are shown to be linked with his theoretical approach to the *Architecture active*. These environmental devices promoted a continuous dialogue between the inhabitant and indoor atmospheres and outdoor climate, and they have their roots in Wogenscky's rigorous design method, which was supported by his professional experience and his patient research. As Banham wrote, *"the history of architecture should cover the whole of the technological art of creating habitable environments"*.[40] This research reveals that, nowadays, making a division between formal and environmental matters for the purpose of studying or designing architecture is nonsensical. The entire meaning of modern architecture cannot be understood only in terms of space but in terms of environment, atmosphere, and the body.

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[39] David Le Breton, *Anthropologie Du Corps et Modernité* (Paris: Presses universitaires de France, 2003), 111.
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