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Claude Nicolas Ledoux, visionary architecture et social utopia

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Abstract:

Claude Nicolas Ledoux is not only the famous French utopian architect from the 18th century. He had also some very modern ideas about industrial production, urban planning, and “territorial intelligence”. The project of the royal salt works (1775-79) was an opportunity to apply several very innovating ideas about economical organisation and social living. After the French Revolution, Ledoux planned an “ideal city” which continues to fascinate by its revolutionary vision of the future.

Keywords:

Ledoux, Arc-et-Senans, architecture, utopia.

Warning: this text is the developed and enlarged transcription of the conference-visit at the Royal Salt works in Arc-et-Senans, provided by the author during the sixth annual conference on Territorial Intelligence, held in Besançon (France), from 15th to 18th October 2008, on the theme “Tools and methods of Territorial Intelligence”.

When we talk about Claude Nicolas Ledoux’ work, we are either tempted to reduce it to a utopia-literarily a dismissal- either to reveal its concentration universe, whether we refer to the panoptic plan of the Royal Salt works or to the Paris barriers. But his work involves many other things as well, from Ledoux’ first accomplishments as an architect, in the 1760s, to its treaty of architecture, published in 1804.

This prominent architect from the Age of Enlightenment, sometimes called “cursed”¹, has generally been neglected or even forgotten until his rediscovery, first in the United States and in Japan, afterwards in France, mainly since the 80s. The king’s architect, even if converted to the Republic, Ledoux will however meet the prison. Most of his buildings will be demolished during the 19th century, because they fitted very little the current romantic tastes. His treaty of architecture, never entirely published, has ruined him and has not found too many readers, so neither his sentences nor even the shape of his writing will be decrypted.

1. *L’Architecte maudit: Claude Nicolas Ledoux (Ledoux, a cursed architect)* the first film on Ledoux and the Salt works, shot in 1953 by Pierre Kast (we can see an abandoned monument, wrapped in vegetation and inhabited and cultivated by peasants). See by the same author the fiction *La morte saison des amours (Death season of loves)*, shot in 1960 in the same place. See also the television film *Dom Juan* by Marcel Bluwal (1965), with Michel Piccoli and Claude Brasseur.

Breaking off with the baroque that preceded him, Ledoux has invented an architectural writing without any concession, whose modernism will only be acknowledged in the 20th century firstly by Emil Kaufmann², who designates him the father of modern architecture. Ledoux would therefore be the predecessor of Le Corbusier, who happened to be born on the other side of Jura Mountains. Categorized by Michel Foucault among the totalitarians, he will however be little by little recognized by the most of the architecture theorists and two hundred years after the French Revolution the revolutionary architects: Ledoux, Lequeu and Boullée are put in the spotlight.

Despite all that, Ledoux' work has kept some ambiguities. The difficulty comes in the first place out of the character himself, because the man had a restless public life. A cunning young man with the women from the court, who launched him in a dazzling career, this ambitious man who became "the King's architect" got revolutionary in order to uselessly try to escape prison. From that moment on, he dedicated himself to his masterpiece, a literary-philosophical text and a set of engravings of his art, whose depth and inspiration will have contributed to the thickness of the mystery shrouding his author. It is true that few readers will have got the chance to read this arduous text, less often reedited than the actual graphics of the treaty of *Architecture considérée sous le rapport de l'art, des moeurs et de la législation*, (*Architecture considered in relation to art, morals and legislation*)³.

But Ledoux's modernism is found in his relationship with the world as well as with what was not yet known in the 17th century as the economy. The conference on the "territorial intelligence" organized at the University of Besançon in October 2008 is an opportunity to remind to what extent Ledoux was also a visionary in his approach to economy, to its territory, to the interpersonal relations and to people's relations with this territory.

I. Ledoux and the territory

In times when the physiocrats dominate on a large scale the French economical thinking, Ledoux starts in his own way an "industrial revolution" before the one of the steam engine, by suggesting settling a new salt manufacture in Arc-et-Senans. Indeed, these two agricultural villages do not dispose of any salt resource and they are situated at about 20 km away from Salins-les-Bains, where the salt exploitation began in the Roman's time. A subterranean factory, under some impressive stone vaults, extracts the valuable salt, following an industrial procedure set up back in the Middle Age.

In this Piranesian (Fig. 1) scenery that Ledoux compares to hell, liquid brine is pumped before having it boiled in giant pans from which the workers get the salt which is then dried on the fireplace and afterwards sent across all the eastern part of the kingdom. At the foot of the Jura Mountain, in this narrow water-soak of the river pertinently called "Furious", the steams make the work even more difficult and the wood exploitation for the households gets more and more troublesome. Ledoux, recently promoted as "inspector of salt works" considers that these systems are dangerous and uncoordinated. The architect, in a hygienist way that foresees Pasteur's century, decides to propose to the king to build up a new well-ventilated factory. To this end, he chooses an open and windy space, a virgin field like a white sheet of paper where the imagination of an architect could be freely expressed.

Above all, he uses a land settlement idea which is totally innovative: he will locate his site not next to the salted water springs, but next to the fuel, the wood. Or, Arc-et-Senans is situated on the side of one of the largest timberlands of the region, the Chaux massif; it would therefore be easier to get the brine down in water pipes following the river's course: "It was easier to control the water flow than to transport a whole forest" writes the architect (Vidler, 1987).

This idea of settlement right next to the main production factor is really astonishing, especially because Ledoux does exactly as it would be done in an industrial area nowadays: he chooses a flat, empty and clear field, where he will be able to let his imagination free.

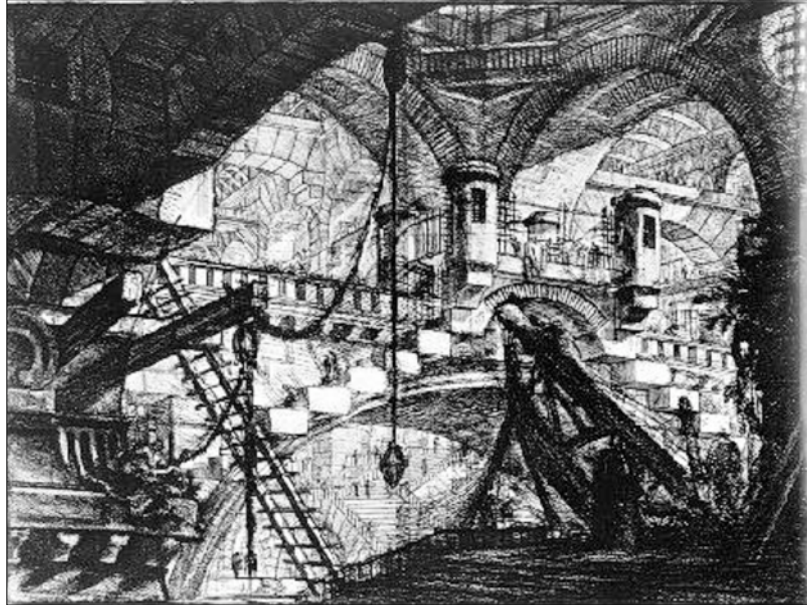
Without realizing it, Claude-Nicolas Ledoux has taken the salt production out of the primary sector, which in economy corresponds to extractions from nature and introduced it in the secondary sector, that

2. Emil Kaufmann (1891-1953) art historian of the Vienna school, refugee afterwards in the USA, see bibliography.

3. Published partially in 1804, then reedited several times in limited editions, until the recent republishing available for everybody at Hermann (1997), see Bibliography. An original copy of the 1804 edition is available at the French National Library and another one is kept at Arc-et-Senans. Digital version on Gallica.fr

of the industrial production, in an age where some of the economists still doubt that any other source of richness besides the nature itself could exist.

Figure 1: “The Arch with a Shell Ornament”, plate 11 from the series The Imaginary Prisons



Source: Piranesi, 1761.

Besides, Ledoux marks the border between rough nature and the emerging industrial civilization through the wonderful entrance building and its cave, in Italian style which symbolizes the transition from the “natural condition” to that of a “city”. Moreover, the entire entrance building functions as a transition ritual. Ledoux wanted the Doric columns with no base to give the impression, when seen from the road, that the Salt works emerge from the ground... Then again, through the cave, one can catch a glimpse of the imposing house of the manager (Fig. 2), whose colonnade is also designed to be visible from a distance.

In this way, the entrance in the Salt works looks like a gate to another world wanted perfect by Ledoux.

This cosmic idea is to be found in a restrained shape in the cemetery of the city of Chaux which Ledoux imagined for his ideal city. In this utopian cemetery, the relation with death is a purely poetic one, since the centre of the whole cemetery is an immense round empty room, symbolizing the absolute void. This room has only one zenithal circular gap, which allows imitating by reflection the Sun’s itinerary on the walls of the sphere. On the outside, the cemetery is invisible, being built underground and having only one semicircle emerging similarly to a floating planet in the clouds: it is under this allegorical shape that Ledoux actually presents his work in an engraving of his treaty of architecture (Ledoux, 1804, plate 100).

The fact is that the two successive plans which he shows to the king for the Salt works are the result of an unlimited vision, where the shape is not explained by the morphological constraints of the territory, but only by the function.

The two projects are alike in terms of their care to organize the industrial functions, to enable the flow, while guaranteeing hygiene and safety. The buildings are ventilated and spacious in order to prevent fires and to protect health; even vegetable gardens for the workers are calculated.

In the 2nd project, created starting with 1775, Ledoux provides an almost promethean vision of the industrial age which is supposed to bring about wealth and harmony. In this way, he opposes to the pure

and uncontrolled nature a universe (out of which he will make an ideal city later on), where each thing has its own place, in harmony with the outer space.

Figure 2: The Royal Salt works seen from the entrance building, or the guards' building



Source : © Photography: L. Gruson.

This harmony lies firstly in the air and the sun. The cosmic vision is provided by the shape of the Salt works, which looks like a sundial. The shape must be “pure as the one of the Sun during its journey” says the architect. But the radiant organization allows also the functional distribution, each building trade owning a building and an equal part of the sun and of the public and private space (especially the gardens).

The obsession for meaning characterizing Ledoux' work determines him to explain even that the building situated at the most western point will be appointed to the clerk who will be the last ones to work every day, writing down in the books the daily production... At midday, the Sun is of course at its height on the top of the director's house, which also stands for the justice palace and the church... In one of Ledoux' engravings we can even see the sun crossing over the building and illuminating the priest, who is on the top of the stairs, where everything converges.

We obviously think of Tommaso Campanella's *Cité du Soleil* (*City of the Sun*) (Campanella, 1972)...

The feeling that the Royal Salt works have a secret connection with the outer space is still present nowadays: the strength and the balance which come out of this architectural composition determine a feeling in between trouble and fullness: there are some who leave it serene, there are others who leave it panicked. Conductor Emmanuel Krivine, who would spend many summers at the Royal Salt works with the French Youth Orchestra, used to say that inside the salt works one has to face oneself... Those who have spent some time there know at what extent this could be a good or a bad experience...

II. The architect's eye

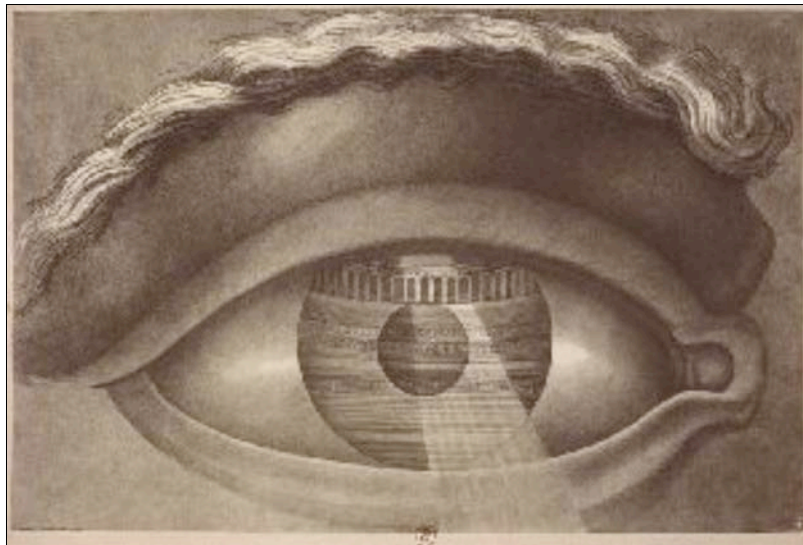
The second compositional element is the reference which Ledoux explicitly makes to the ancient theatre. In the opinion of Anthony Vidler (1987, p. 49)⁴, “we literarily have to interpret the Salt works as a theatre, since it follows the lines of the ancient amphitheatre as described by Vitruve and illustrated by Perrault” (in the work published in 1673, that Ledoux thoroughly examined).

Just like the theatre of Besançon, whose revolutionary auditorium breaks with the Italian model of theatre and becomes the prototype of the “modern” auditorium, the shape of the Salt works represents the social and political ideal of the City of Chaux.

We can also call theatrical in the Salt works the combination of abstract elements and dramatic motifs, whether we refer to the colonnade of the director's house, which has to play with the sun, or to the salt urns, or to the imitating rustic roofing. It is the “talking architecture”, with its production and strength symbolism.

Finally, the third approach to the plan of the Salt works is that of the eye. We have insisted a lot in our comments on the ideology of social control exercised by the Salt works, where, Ledoux says, “nothing escapes the supervision”. Michel Foucault (1975) has even compared it to a “watching machine” which announces the concentration universes.

Figure 3: The eye of the member of the audience reflecting the theatre of Besançon



Source: Ledoux, 1847, plate 113.

But for Ledoux the power is exercised in a more abstract way. The Director's house represents the power; it is not an observation tower but a temple and the oculus of its eardrum, described by certain guides as the pyramid's eye, has only a symbolic function. Like in the theatre auditorium in Besançon, where the members of the audience are equal before the show and where each of them can have a view over the entire stage and the entire room, as proved by the very famous engraving (Fig. 3), the Salt works organizes the look: the power supervises and commands, but in a symmetric way everybody sees the centre of the circle, sees his own place and understands the whole. It is what we would call nowadays a “transparent organization”, whose efficiency is the result of the fact that everybody has understood the role he's playing in a larger entity. Here is another example of “modernism” in Ledoux' way of thinking, which the recent popularity of “networks” can only highlight. To those who consider Ledoux as a prede-

4. Anthony Vidler is generally considered one of the best specialists in Ledoux. UCLA professor, he was in charge with the scientific design of the Ledoux museum in Arc-et-Senans.

cessor of the concentration architects in the Bentham⁵ style, it can be objected that the original Salt works was hedged. Moreover, Ledoux will add to his urban composition some metaphorical headlights in subsequent engravings. On the other hand, each building has one public façade, center-oriented, and a private façade, hidden from the watchers, where the workers had bathrooms, which was rare for that age, and vegetable gardens. We are therefore dealing more with a communitarian system rather than a totalitarian one, even if history has proved ever since that communitarian ideologies have often turned into totalitarian ones...

The communitarian vision is strengthened when we understand that each building corresponding to each building trade has common places organized around the hearth, where workers will be supposed to share a harmonious life and where from Fourier will certainly find inspiration in imagining his phalanstery.

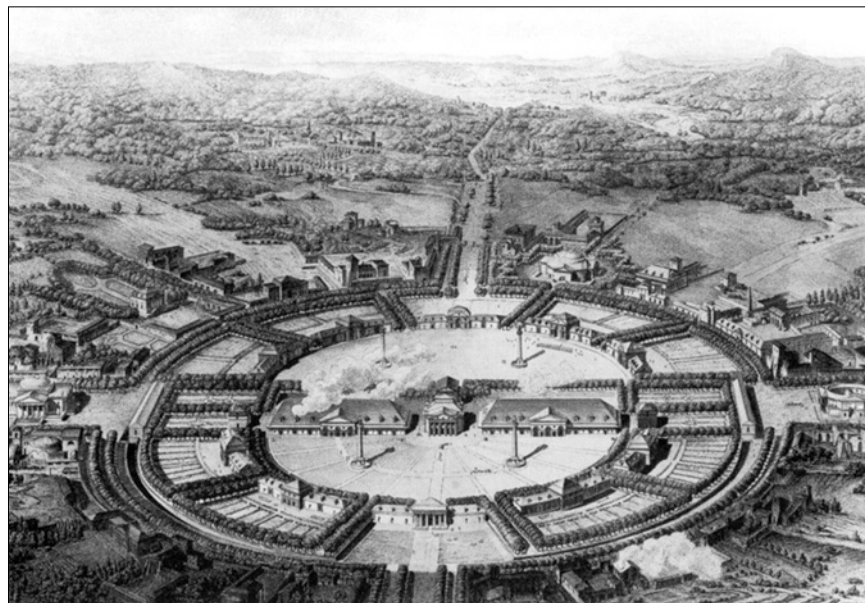
Finally, the eye represents for Ledoux a hint to the Masonic imagery as well as many other forms that he uses.

III. The Salt works, real building and embryo of utopia

The royal Salt works built between 1775 and 1779, 20 years before the French Revolution, does not represent a utopia in itself, but rather a vision of the future. Maybe we should not forget to mention that two centuries later some intellectuals had the idea of setting up there a “foundation”, in charge with creating an international centre of reflection upon the future. Nevertheless, Ledoux’ utopia is “The city of Chaux”, an ideal city whose plans he will constantly improve, especially after the Revolution...

In this way, until the 1980s, the tourist guides mentioned the Salt works as an old country house or an unfinished ideal city. These rough guesses spread by a popular mythology are very far from the historical reality. Ledoux has really built a salt manufacture at the king’s request. This salt works has been desired and built in semi-circle.

Figure 4: General view over the city of Chaux



Source: Ledoux, 1837, plate 15.

5. Jeremy Bentham (London 1748-1832), inventor in *Panopticon* of the “ideal prison” that will be severely criticized by Michel Foucault.

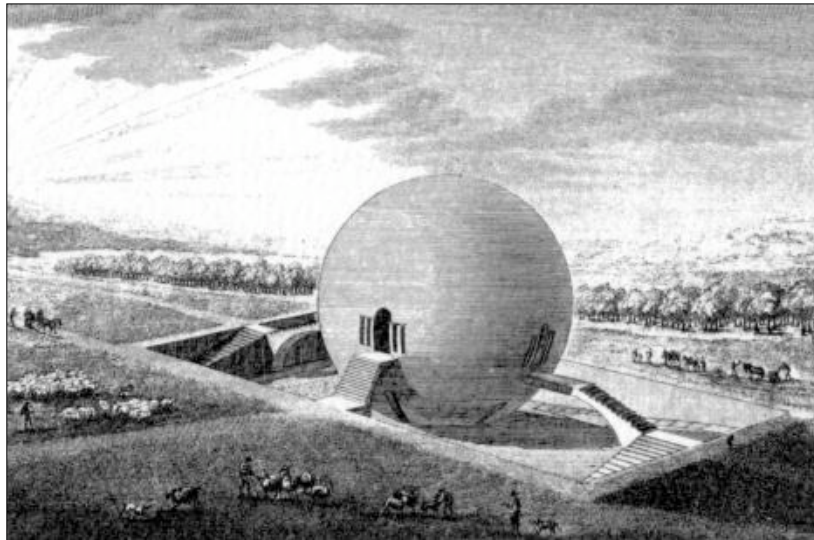
It is only during the Revolution and particularly during his imprisonment that Ledoux will conceive the work of his life: the plans of an ideal city which he will describe in his treaty of architecture. But contrary to what some people have written, Ledoux' ideal city is not the result of an opportunist appropriation by the former king's architect of his work in a revolutionary light. It is likely that Ledoux had from the very beginning in his mind this project of an ideal city, the public order giving him the opportunity to test some ideas before their development in his writings.

The ideal City is hence conceived twenty years after the building of the Salt works, in a totally different political context. It is the result of both social and architectural utopia... Ledoux extends there the theories which explained the choices made for the Royal Salt works. But what is intriguing is that this utopia is not one without a site, since it is situated exactly on the place of the Salt works, the latter being its centre. In the famous engraving of the ideal City of Chaux (Fig. 4), we clearly recognize the Salt works, but also Loue's valley, in the place where it meets the Jura Bresse, having in the background the Chaux forest Massif, which names the imaginary city.

We are now aware that there was no clear-cut distinction between the Salt works project and that of the city of Chaux, it is even likely that Ledoux has thought from the very beginning to set up a new industrial City in Franche-Comté. Vidler reminds in this way that at that age the region constituted the object of many projects of economical development. In particular, there was built the channel from the Rhone to the Rhine, which still exists nowadays. It is likely, as this author believed, that Ledoux had tried to convince Turgot's entourage to build at the borders of the kingdom a city in a new style, for which he made several successive plans.

In these "urban fictions" Ledoux closes the Salt works' circle and he makes the centre of an imaginary city out of it. We encounter there the idea of a community life following J. J. Rousseau's model, but also the idea of a new industrial urbanism. Ledoux enhances gradually his great urban project through other buildings, explaining their functioning, designing their catalogue, and setting up their plan. To his mind, these ones should be engraved by better artists and afterwards published in his treaty of architecture, which will partially be made in 1804.

Figure 5: The house of the farm guard



Source: Ledoux, 1847, plate 254.

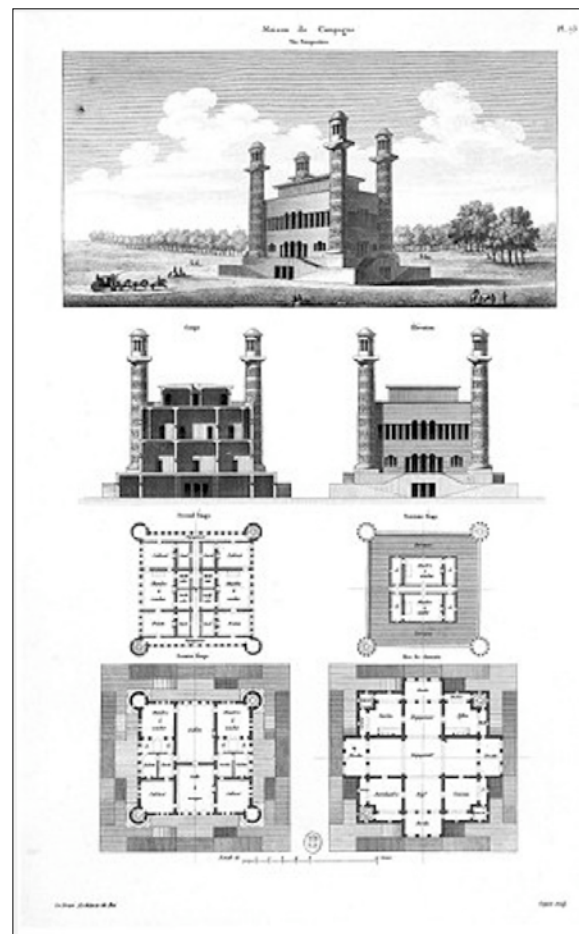
Some of these buildings are really confusing: apart from the cemetery, mentioned above, we definitely need to indicate the farm buildings, kind of talking collections about the professions in the Loue valley. These buildings are inspired by the physiocrats and by the first agronomic discoveries of the 18th century. For instance, we can think of the "circles workshop", which has recently been created in natural

size in the Jura highway area⁶ or of the “house of the farm guards”, designed not for Chaux, but for a model village in Maupertuis (Fig. 5); the geode in Paris looks like its modern pastiche...

Some other remarkable buildings are the temples with social virtues, very famous at the French Revolution. But Ledoux will turn them into little masterpieces, between factories and lodges. The memory’s temple (Fig. 6), with its oriental minarets is likewise particularly remarkable. Finally, we have got to mention the oikema, a temple in the shape of a phallus, which is not an ideal “brothel”, but a temple of passions’ regulation.

In the end, Ledoux’utopia is in the first place a social one. Just like Rousseau, he dreams about an ideal society where relations would be peaceful and in harmony with nature...But the evenings round the fire, in the common reunion halls, where certainly less delightful for the saline workers than Ledoux had thought them to be... His great project of “achieving the happiness of the most” (Vidler, 1987) by means of architecture stays literarily an utopia.

Figure 6: Country house, or memory’s temple



Source: Ledoux, 1847, plate 75.

6. A39 between Dole and Bourg en Bresse.

IV. Ledoux' spirit

The "ideal city" has never existed, but the salt works almost disappeared: abandoned after a hundred years of functioning, it will become a ruin at a moment where Ledoux' work had also been forgotten.

Saved from destruction in extremis, it was restored for the first time in 1936, before being abandoned again. The joyful utopia of the 68s and the intelligence of some enthusiasts for the salt works were needed to get it back to life out of its ashes, starting with 1971 and to turn it again, under the management of Serge Antoine, in an internationally acknowledged place. The Foundation Claude Nicolas Ledoux, created in order to administrate the monument which was restored by the State and conceded by its owner, the Doubs County, will contribute essentially to the acknowledgement of this patrimony, but also to its creator rediscovery. The international centre of reflection upon the future created in Arc-et-Senans will get the support of the biggest French companies. A kind of French "Palo Alto", it will host the greatest scientific conferences during the 70s and the 80s. Become "meeting cultural centre", the Foundation C. N. Ledoux will make Ledoux' work known to the great public by developing there an original cultural program and artists' residences.

The predecessor of the European Cultural Networks, Arc-et-Senans will host the first European forums of the cultural networks starting with 1978. Gradually expanded to the architecture and to the city, the project of the foundation will lead as well to a new campaign for restoring the monument, which will allow the creation in 1990 of a Ledoux museum. This museum, containing one collection of architectural scale-models representing works accomplished or imagined by C. N. Ledoux, was designed by Anthony Vidler, who reminds us that Ledoux dreamt of turning his encyclopedic treaty into a real "museum".

The local authority that owned the walls put an end to the convention of 35 years that conceded the monument to the private foundation until 2006, the same year as the death of its creator and that of the bicentenary of the architect's death. A new history page is opened for the monument, which is declared world patrimony since 1983. Let's just hope that the Royal Saline will continue to be this "free port", both far from and opened to the world, where imagination flows in the air. It would be paying a tribute to Claude Nicolas Ledoux putting there "territorial intelligence"!

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