

HOUSING FOR THE “MAGIC METAL” CITY: THE GENESIS OF A VERNACULAR HOME¹

>LUCIE K. MORISSET

LUCIE K. MORISSET is a full professor at the Department of Urban and Tourism Studies of the School of Management of Université du Québec à Montréal and scientific director of the Canada Research Chair on Urban Heritage of this institution. As a historian of architecture and urbanism, she is especially interested in the hermeneutics of the city, as well as the morphogenetic and semiogenetic study of urban form; in this context, her work currently focuses on company towns, particularly in Canada, and she is preparing a new book about Arvida.

The permeability of national and regional borders to ideas in the first decades of the 20th century has already been the subject of much writing. In the area of urban planning and architecture, it has been envisioned, for example, by following the circulation of journals and books, including the practical guides and manuals which were proliferating in the years before the First World War; the figure of the “urban planner” and his or her English and American cousins, “town planners” and “city planners,” acquired their nobility while urbanization and industrialization called out for new city plans in some quarters and for the creation of towns and cities elsewhere. In this context, the propagation of particularly popular styles, such as those found in *Garden Cities* by Ebenezer Howard, republished in 1902, and *City Beautiful* heralded in 1893 during the Columbian Exposition in Chicago, marked the historiography for having been detected on both sides of the Atlantic, their numerous interpretations having often been reduced to a mere set of identifiable imitators. Indeed, whether it is considering the superimposed occupation of formerly demarcated territory, tabula rasa operations, or new towns and cities, the history of urbanism, where industrialization in general is associated with that of workers’ habitat in particular, is still in its fledging phase; it is to this epistemological journey, which is almost necessarily transnational, as we will see, that this article would like, especially through the use of newly available sources, to offer a modest contribution.



FIG. 1. AERIAL VIEW OF DOWNTOWN AND OF THE BADIN SMELTERS C. 1940. | BHM.

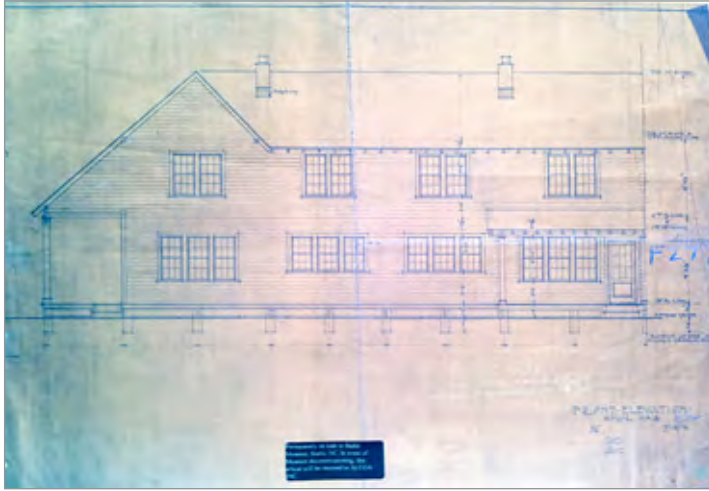


FIG. 2. BUILDING OF A QUADRAPLEX ATTRIBUTED TO BADIN, PIERSON AND GOODRICH, C. 1913. | BHM.

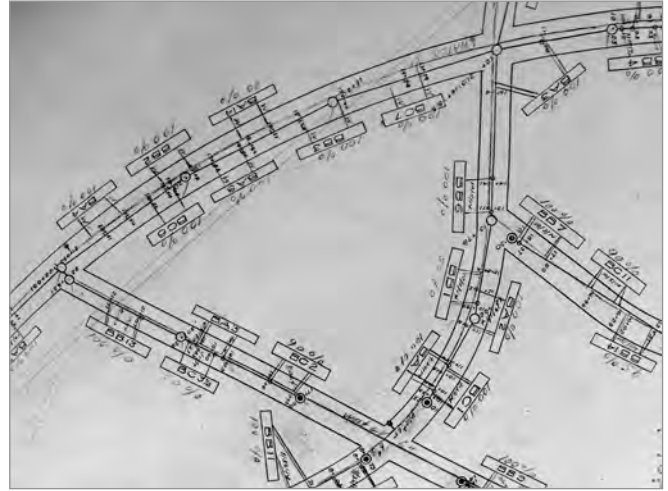


FIG. 3. DETAILED PLAN OF BADIN SHOWING WHERE CERTAIN QUADRAPLEXES WOULD BE BUILT IN 1914, PIERSON AND GOODRICH. | BHM.

TRANSATLANTIC PROMENADES

We ourselves² explored the associations and transfers that occurred upstream and downstream of the construction, in North Carolina, of the city of Badin, also called Badinville in commemoration of Adrien Badin, then director of the *Compagnie des produits chimiques d'Alais et de Camargue* and president of the *l'Aluminium français*³ cartel (fig. 1). The industrialist was also mayor, from 1904 to 1917, of Salindres, a municipality in the Gard referred to as the “cradle of aluminum” for having welcomed the first Pechiney smelter. In 1913, Badin received, from engineers from New York, Pierson and Goodrich, the plans for housing meant to accommodate workers of the aluminum plant that he intended to establish on American soil, in what was then declared as “the most significant industrial initiative in the southern U.S.” (fig. 2). We do not know exactly which part of Badin was completed before November 1915, when the French industrialist offered Arthur Vining Davis, president of the Aluminum Company of America, whom he had already met in Europe on a few occasions,⁴ the possibility of gaining control of the North Carolina facility; dated

one year earlier, the only urban plans by Pierson and Goodrich found up to now seem instead to represent aqueducts and sewers based on surveys from what would appear to be earlier sites (fig. 3). That said, it is worth noting that when he penned his renowned *Une cité industrielle* (an industrial city), an exceptional study of an aluminum town⁵ published in 1917, the famous Lyon architect Tony Garnier could not ignore the noteworthy American company that was a subsidiary of the French aluminum industry. Several of the architectural proposals put forward in this study ended up being adopted in Garnier’s native city under the patronage of mayor Édouard Herriot. In Badin, still proudly called the “town with a French character” by its residents, we have identified a number of characteristics that are not normally seen in America, but are very similar to those described by Tony Garnier (figs. 4, 5, 6). With regards to the dwellings, notably the quadruplexes that are credited locally for giving Badin its French character, we know that the Southern Aluminum Company, a subsidiary of *l'Aluminium français*, considered the possibility at the end of 1914 of downgrading the models proposed by Pierson and Goodrich, as “the houses for whites

were fine for key workers, but too nice for many others.”⁶ We have learned from this adventure that the Aluminum Company of America preferred single-family, low-rise dwellings to the quadruplexes. Although it is true that four-unit buildings are more common in Europe than America, we will show that the Aluminum Company of America experimented with these types of quadruplexes and other semi-detached homes in several places besides Badin.

In a previous edition of *Architecture Canada*, we examined the eventual migration of Garnier’s industrial city from France to Arvida via Badin. Arvida is a company town that was designed to host a population similar to Garnier’s city, although it was built a decade later and several hundred kilometres away. We concluded that it was worth examining these linkages in more detail, as the close relationships that existed between many of the players in the world of industry at the time provided grounds to believe that similar transactions affected a significant number of company towns (figs. 8, 9). In this article, we therefore plan on examining the town of Arvida once again, with a particular focus on its habitat. Doing so



FIG. 4. GENERAL VIEW OF THE BADIN SITE CONSERVED IN *L'ALUMINIUM FRANÇAIS* ARCHIVES. | IHA.



FIG. 5. PRINTING PLATE OF *UNE CITÉ INDUSTRIELLE* REPRESENTING THE DAM.



FIG. 6. A FOUR-UNIT DWELLING OF BADIN; NOTE THE UNBOUNDED LOT. | LUCIE K. MORISSET.

will allow us to broaden this perspective and better understand the relationship amongst the ideas that underpinned the creation and completion of the planned industrial cities built during the first decades of the 20th century. In fact, *Une cité industrielle* seems to reveal various historiographical shortcomings. This milestone work, which ushered in the modern era in French architecture with its vision of an integrated metallurgical city powered by hydroelectricity, was perceived as eccentric and studied exclusively for its architectural aesthetics and tectonics. This is probably due to the fact that the work stood out as an exception in the French

landscape of the era and does not fit snugly within the methodological model used to study classical art history, which revolves around masterpieces and brilliant artists. The history of urbanism to which our study belongs is based on a more composite logic used in large part in the realm of project management. Much as a street grid or a housing landscape is more than just a passive response to functional needs for segregation, housing or commerce, a company town is an industrial and (often) social project reflecting economic circumstances that have arisen over the long time and that depend more on the geography defined the company and

the movements of its protagonists than on their eventual urbanistic offshoot. At the very least, this is the argument that we would like to put forward in our study of a series of aluminum towns built in part or in whole to house the workers of this “magic metal of the 20th century,” as it was called in the 1950s. It could be that this “magic,” as well as its corollary “white coal,” to use the expression popularized in Lyon by Aristide Bergès, predisposed people to thoughts of utopia. Tony Garnier was certainly not the only one who dreamed of such a utopia, as evidenced by Henry Ford’s automobile-centric project. Ford was indeed given



FIG. 7. DEPICTED IN 1953, ALCAN'S ALUMINUM NETWORK, UPSTREAM AND DOWNSTREAM OF ARVIDA. | ALUMINIUM PANORAMA.



FIG. 8. THE WORLD ACCORDING TO ALCAN, IN 1953. | ALUMINIUM PANORAMA.



FIG. 9. PLAN OF ARVIDA BY HJALMAR EJNAR SKOUGOR AND HARRY BEARDSLEE BRAINERD. | vs.

credit for being one of the sources behind Frank Lloyd Wright's Broadacre City, a seventy-five-mile-long city that he proposed to create in Alabama and where he claimed that the use of hydroelectricity in metallurgical exploitation would offer "an opportunity to eliminate war from the world."⁷

MAGIC CITY PLANNING FOR A MAGIC INDUSTRY

Built according to an urban plan of rare finesse, Arvida was erected from 1926 onwards on the south bank of the Saguenay River in Quebec, some

250 kilometres north of the provincial capital (fig. 9) and, as a chronicle at the time noted, "450 miles North of Boston." We shall address the importance of this situation later on. Arvida's urban plan was in fact published in a sumptuous manual in 1938, *City Planning and Housing: A Graphic Review of Civic Art*, no doubt thanks to material collected by the German Werner Hegemann during his stay in the United States. Its name is the acrostic form of Arthur Vining Davis, president of the Aluminium Company of America, to whom we owe the founding of the city. Historiographical data shows however that Arvida, a fairly popular

Swedish surname in the first decades of the 20th century, was also the surname of a number of immigrants who flocked to America around World War I, and this evokes the international movements which are the context of our story. It is, however, the Canadian city that has echoed the name to this day; internationally known for having the most powerful hydroelectric plants and the largest aluminium smelter which provided over 90 % of the aluminium used in the Second World War effort by the Commonwealth, Davis's cherished brainchild witnessed the birth of Alcan, originally a branch of the Aluminium Company of America, another



FIG. 10. AERIAL VIEW OF ARVIDA C. 1945. | RTA (MONTREAL).



FIG. 11. ARVIDA LANDSCAPE TODAY. | LUCIE K. MORISSET.



FIG. 12. STACKS OF INGOTS READY FOR SHIPMENT; SCENE CAPTURED BY RONNY JACQUES IN A PHOTO REPORT COMMISSIONED BY ALCAN IN JANUARY 1943. | LAC.



FIG. 13. ONE OF MANY POSTCARDS DEPICTING ARVIDA'S LANDSCAPES FROM THE 1930S. | RTA (MONTREAL).

multinational company founded in 1886 in Pittsburgh by one of the founders of the modern aluminum industry, Charles Hall (fig. 11).

If Arvida's urban design was publicized through chromolithographies from its very conception as if to affirm its magnificence to the world, it is because this design constitutes the unequalled

synthesis of urban planning research into company towns. Extolled as the "First Garden City of Canada,"⁸ "Ace Company Town"⁹ and "Wonder City of the Wilderness," the "Model City built by Aluminum Industry,"¹⁰ as it was also called throughout the century, was praised in dozens of scientific articles and textbooks of geography and urban design, both in America and in Europe. The "ville-usine,"

as the French historian of architecture Pierre Lavedan used to call it, replaced the bleak rows of miners' cottages and the plant directors' extravagant homes by a picturesque residential landscape of single-family detached houses, accessible, even for purchase, to all workers without segregation, which was exceptional for a company town (fig. 12). Spurred on by Arthur Vining Davis, who wanted



FIG. 14. POSTCARD OF ARVIDA IN THE 1940S. | SHS.



FIG. 15. A CLASSROOM OF YOUNG PEOPLE FROM ARVIDA IN 1937. | BAHQ (SAGUENAY).



FIG. 16. ARVIDA'S BASEBALL TEAM, PHOTOGRAPHED OUTSIDE THE GATES OF THE COMPANY'S OFFICES. | RIO TINTO ALCAN (SAGUENAY).



FIG. 17. THE SAINT-JACQUES D'ARVIDA CHURCH AND PRESBYTERY, REMARKABLE EXAMPLES OF THE NEO-VERNACULAR FRENCH CANADIAN STYLE, BUILT IN 1949 ACCORDING TO THE PLANS OF ARCHITECTS DESGAGNÉ AND BOILEAU. | MARIANNE CHARLAND.



FIG. 18. THE MANOIR DU SAGUENAY, A NEO-VERNACULAR PIECE ATTRIBUTABLE TO ALEXANDER TILLOCH GALT DURNFORD (FETHERSTONHAUGH AND DURNFORD, 1939); THE VIEW SHOWS ONE OF THE TWO PROJECTS PRECEDING CONSTRUCTION OF THE BUILDING, WHERE THE GARAGES WERE GIVEN AN ALTERNATIVE SHAPE, MORE IN LINE WITH THE REGIONAL ARCHITECTURE OF THE COMPLEX AS A WHOLE. | LAC.



FIG. 19. THE SHIPSHAW II HYDROELECTRIC POWER PLANT, BUILT ACCORDING TO JAMES CURZEY MEADOWCROFT'S PLANS IN 1942, WHICH CAN BE SEEN ON ONE OF THE MANY POSTCARDS BEARING ITS IMAGE. | BANQ (QUEBEC).

to build an observation tower there, and directed by dozens of engineers and architects, between 1926 and 1948, Arvida was endowed with a couple of thousand houses of some 125 different designs. They are dispersed, each with its yard, throughout neighbourhoods which form an integrated city, since the Aluminium Company of Canada¹¹ also provided it with a commercial downtown, numerous parks, churches and schools. On the one hand, the ethnically and religiously diverse population of Arvidians had access to education unequalled in North America (figs. 13, 14, 15, 16). On the other, their built environment bore the mark of exceptional architecture, avant-garde for Quebec, infused with unabashed regionalism aimed at conceiving and expressing the identity, at once Canadian and modern, of the "aluminum city" (figs. 17, 18, 19).

The "porcelain city," as jealous neighbours sometimes condescendingly called it, is a utopia materialized in the most minute detail, yet brought to life more scientifically than the fictional "seventy-five-mile-long-city" and more realistically than "the imagination without reality" as

Tony Garnier labelled his industrial city (fig. 20). Its 25th anniversary celebrations were grandiose, as if for a town centuries old, featuring a coat of arms, an anthem and sumptuous festivities; as such Arvida established itself as a collective identity project in which Arvidians are still steeped. For years, many of them have been advocating for the protection and enhancement of the architectural, urban and memorial heritage of the old company town, which since 1975 has been integrated twice into new municipal territories whose toponymy was foreign to the industrial project. Arvidians' sense of belonging, which transcends denominations, now finds resonance in the public, political and industrial space of the old town, particularly considering the fact that Arvida is welcoming a major redeployment of its mother-industry that is rare in our post-industrial universe – an AP-60 state-of-the-art aluminum smelter committed to a 460,000 ton production, nearly equivalent to its peak during World War II.

In 2012, the municipality (Saguenay, as it is now called), won the Heritage Canada Prince-of-Wales Prize for its efforts in

the conservation and enhancement of Arvida, whose residents just prior to that distinction were recipients of the Thomas-Baillairgé Prize given by the Order of Architects of Quebec. The municipality started an ambitious conservation and heritage enhancement program including the listing in 2009 of 733 private properties as historical heritage, subject to strict regulations. The municipality also sought, and obtained in 2011, designation as a National Historic Site of Canada. Elected officials and residents actively pursue international recognition for Arvida through a UNESCO designation. This is yet another illustration of that sense of belonging on the international scene, which is rather surprising in a context of unprecedented financial globalization and industrial mobility; when Arvida-born Alcan was taken over by Rio Tinto in 2007, after purchasing the French company Pechiney, it nevertheless took the name "Aluminerie Arvida" for its local redevelopment project, "a direct reference to the history of the complex [...] and to the internationally known town of Arvida created in the 1920s," the firm announced, along with the motto "History continues with you."¹²

When researching the roots of this sense of belonging, we find that the Arvidian utopia, as a collective identity project, was coupled with what art historian Aloïs Riegl termed in 1903 “commemorative value” or “value of intentional remembrance.”¹³ Its creators conceived of each house and the whole as a “heritage,” in the original sense of the term. Selling “company houses” to their occupants was a notable exception for a company town to begin with, and even more so considering the various means made available to facilitate the purchase. More remarkable still is the fact that each sale came with a relatively uncommon easement, consistent with Quebec civil law, relating to the industrial vocation of the town, the occupation of plots of land, and residential zoning, but most significantly, beyond these precursors to future urban planning regulations, the sale also came with an easement called “*par destination de père de famille*.” Each residential property sold by the company in Arvida was subject to an easement to the benefit of a dominant estate comprising the lot where the smelter is built and all plots of land abutting the sold property on each side. Unless the industrial vocation of the smelter estate changed, or to put it bluntly, the industrial city ceased to exist, and without the consent of the company and the majority of the owners of adjacent lots, the Arvidian owner’s land was subject to the following restrictions as early as 1920:

1- Said lot shall not be used for any other purpose than that of private residence, and no structures other than one (1) dwelling house of not more than two full stories in height with the privilege of an attic or mansard in addition costing at least six thousand dollars (\$6,000.00) for material and construction, with roof having a fire-proof covering of metal, slate, asbestos shingles, tiles [...] and built for and adapted to the



FIG. 20. AERIAL VIEW OF THE ARVIDA PLANT IN THE 1970S. | LAC.

use of not more than one family shall be erected or maintained upon said lot except that a garage of not exceeding two car capacity [...] Any such dwelling house shall face Taschereau Road, shall be located that no part thereof is nearer than thirty (30) feet to the front line of said lot or eight (8) feet to the side line of said lot [...] No garage [...] shall be erected or maintained upon said lot within seventy-five (75) feet from the street [...] 2- No structure of sign of any kind, except the small ornamental structures above mentioned, shall be erected or maintained upon said lot or be materially altered unless the same shall be erected and the alterations, be made in the location, position, manner, and of the design and material approved in advance in writing by the owner of said lot number eight thousand and fifty (8050) [...] nor shall any structure erected or sign displayed on said lot be painted at any time without such approval [...]

4-In case of violation of any of the foregoing covenants, conditions, restrictions and limitations, the owner or owners of any or all of the lots to the benefit of which said covenants, conditions and limitations inure,

as above set forth, shall have the right to obtain in any court having jurisdiction an injunction or other decree to enforce the performance of said covenants, conditions, restrictions and limitations, or any of them, and to restrain this violation, or to pursue any other remedy [...] and shall have the right to collect from the party violating or threatening to violate the same all damages, costs and expenses [...] resulting from the violation thereof incurred [...]¹⁴

Thus at the outset, Arvidians also found themselves playing the role of bearers and transmitters of heritage. However, if by way of property law such principles of belonging can easily be transmitted from one generation of owners to another, the case of Arvida also makes it possible to further return to and explore the assumption that built landscape is a collective identity bearer: in other words, at the city level, more than easements are needed to produce a feeling of belonging, and, as such, to engender, on virgin territory, a society in which citizens have been proclaiming their identity for almost one hundred years now. The titles of ownership of Arvidian houses have thus become



FIG. 21. PIONEERS OF THE AMERICAN ALUMINUM BUSINESS, INCLUDING J.W. RICKEY (2ND FROM THE LEFT), E.S. FICKES (3RD), R.A. HUNT (6TH), C.H. MORITZ (8TH) AND, OF COURSE, A.V. DAVIS (IN THE FOREGROUND; 4TH FROM THE LEFT), ALL RENOWNED WORLD TRAVELERS WHO FREQUENTED SEVERAL OF ALCOA'S COMPANY TOWNS, INCLUDING ARVIDA. | BCHGS.

clues, as have references to the past that we discover in the shapes of these houses, as well as in their diversity, and they symbolize their historicity; it is, in fact, in the history of the industry, added to that of worldwide company towns, that we find the keys for decoding these signs and for understanding the conditions of possibility for this utopian identity. To create a feeling of belonging, Arvida also had to solve a problem, iterative in its make-up, from one aluminum city to another, which opposed the capitalist and utopian ambitions of the company.

Our hypothesis is that Arvida owes the conditions of this reconciliation of conflicting interests and its astonishing possibilities to the intrinsic characteristics of the aluminum industry, if not specifically to those of the company which gave birth to the city; we could thus say that the democratization of the "magic metal of the 20th century" corresponds to the democratization of the industrial city, which came to fruition due to a succession of experiments which, like the invention of aluminum itself, brought together expertise and know-how gleaned in all four

corners of the planet. Even more than the magic of hydroelectricity, the "white coal" to which its destiny is nevertheless linked, aluminum thus behaved as an incubator for urban thinking by bringing together the two necessary ingredients for the success of the model city: on the one hand, the globalization or global circulation of ideas which preceded their use in Arvida, and, on the other, the ideal dose of these ideas characteristic of social representations concerning aluminum in the first half of the 20th century, a reflection of urban idealism, particularly as regards human habitat. This hypothesis is articulated using two dimensions of the development of the aluminum industry or, more specifically, of the Aluminum Company of America, which developed in tandem. The company which, along with aluminum, took off in the last decade of the 19th century, was naturally a global or multinational company, as required by its very specific procurement needs (bauxite, hydroelectricity, croylite, etc.) and processing and distribution networks; at the same time, it remained artisanal, built upon new, specialized know-how and led by a handful of multi-skilled individuals

who experimented extensively and controlled the most minute aspects of their work, from human-resource management to building smelters and plants, including the perfecting of alumina electrolysis (fig. 21). All this turned them into international ambassadors. Starting in the 1880s, Arthur Vining Davis, for example, was able to take stock of the importance of a qualified and specialized workforce, given that, in the absence of dedicated and competent workers for operating challenging and sophisticated machines, he had to share 12-hour work shifts in the experimental Pittsburgh smelter with Charles Hall. Another example is Edwin Stanton Fickes, an engineer who joined Alcoa in 1899 at Shawinigan Falls, where he worked under the direction of Charles Hall in building a potroom, a potlining factory, and a warehouse. Fickes, who drew up the city and housing plans and also tracked down bauxite deposits and negotiated rights to water, claimed that in Shawinigan, Charles Hall also somewhat nebulously entrusted him with building a power plant. Then, once there, as he reported, he discovered that the space reserved between the headrace canal and the water intake of the turbines was so narrow that no company wanted to manufacture the valves for it, but received the following order: "Oh well never mind, just go ahead and design them yourself and perhaps we can find someone who doesn't build valves who will make them."¹⁵ The engineer-craftsman-handyman, who became the vice-president of Alcoa in February 1919, travelled to every corner the world along with Charles Moritz, Roy Hunt and Edward Davis, the brother of Arthur. In one place, he wanted to ensure the supply of bauxite; in another, he evaluated, along with the French engineer André Henry-Couannier, the course of business of the *Société des bauxites du midi* (the French subsidiary of Alcoa); in yet another, in Bournville,



FIG. 22. FOUR MODELS OF “FOUR FAMILY FRENCH APARTMENTS” BUILT IN 1913-1914 AND INVENTORIED BY ALCOA IN BADIN. | BHM.



FIG. 23. LEFT HALF OF A MULTIPLE UNIT DWELLING, IN BRICK, IN MASSENA, ATTRIBUTED TO THE ARCHITECTS MCCLURE AND SPARE, 1907. | LUCIE K. MORISSET.



FIG. 24. WOODEN HOUSE IN MASSENA, VIEW C. 1910. | LAD HHC.

he marveled at the “Birmingham model suburb built by the Cadburys” and the “employer-employee [relationship...] one on the most satisfactory in Great Britain”;¹⁶ and, lastly, in the wake of a visit of Norske Nitridaktieselskap facilities, built at the initiative of Adrien Badin, he discovered the “large power plants” and Norwegian cities established by Sigurd Kloumann after Alcoa had acquired a significant share in the Norsk aluminum company. Before becoming ecstatic about the potential heralded by the future establishment of Arvida, Fickes witnessed the creation of Massena, Badin, Alcoa, Mackenzie and Moengo, to name only these Alcoa company towns. In our explorations, which have also plotted the

development of the aluminum industry, we now wish to retrace the milestone ideas which we believe reached their peak in Arvida in order to understand the foundations of what appears to be a bipolar identity creation: simultaneously that of habitat and inhabitant.

ON THE ALUMINUM TRAIL

At the end of the First World War, the Aluminum Company of America, which took the more familiar name “Alcoa,” was a multinational company with impressive dimensions, active in ten countries, on three continents. In 1918, Alcoa also made its debut in the building of company towns. But well before Thomas

Adams observed an “enlightened self-interest in planning and developing the towns around their mills so that healthy and attractive housing conditions will be provided [...] One of the reasons for this is [...] that experience has taught that the best workers can only be secured if the living conditions are satisfactory,”¹⁷ Davis, the president of Alcoa, had stated in 1909 that “labor enters relatively into the cost of aluminum much more than into the cost of any other metal whatsoever.”¹⁸ As we have seen, in Badin, Alcoa also had its first encounter with a foreign urban culture, and established, in the path instilled by *l’Aluminium français*, a society described very favourably by the Hampton Normal and Agricultural

Institute, a university in Virginia devoted to the education of African Americans:

The men are not only furnished rather attractive houses and are paid a good wage but have provided for them also certain means of physical betterment, recreation and worship [...] At the Community house moving pictures and other entertainments are provided, for which they must pay, of course. The dance pavilion with music is free to all [...] The young men have opportunities to play pool and baseball.¹⁹

However, as was also mentioned, in Badin the housing units that were a legacy of the French, quadrplexes called “French Apartments,” were denounced in the company’s records,²⁰ and by Edwin Fickes himself, who wrote a few decades later that they “were not as good as the houses, nor the type, that the Company wished to provide for its employees”²¹ (fig. 22). Alcoa had however already been exposed to similar quadrplexes a decade earlier; in the American world, where collective housing was as unusual as the mineral urbanism of Europe then illustrated by Le Corbusier and his “contemporary city for three million people,” these buildings for four or even eight people probably seemed like an optimal solution in terms of housing costs for workers, at least as long as they were considered only as tenants. In 1907 in Massena, Alcoa therefore built one hundred units of this type, made out of brick, probably according to the plans of architects Pittsburgh McClure and Spare (fig. 23). However, in 1913, shortly before taking over Badin, Alcoa was already giving up these “Kreusler” houses, named after their builder, “because [they were] undesirable in [their] construction and type from every standpoint.”²² Alcoa soon preferred the “Warren” wooden houses designed for single families (fig. 24):

[this] smaller type of house will be more desirable, due to the fact that it gives [the workers] plenty of yard room, and as we have a considerable amount of spare ground [...] I would like to ask if it will not be satisfactory to abandon the idea of building the eight family flat and put the money into a smaller type of house. The foreigners appear highly pleased with the Warren type of house, as it offers them a considerable rooming capacity and this is just what they are seeking, especially when they purchase them, as they wish to make the boarders pay for the houses.²³

It is in Massena, moreover, that the aluminum company became familiar with real estate and land administration. Was the whole problem concerning building better housing for workers not a financing issue? Here we find what the French urban planner Jacques Greber called the “perfect methodical organization”²⁴ of Americans, but more specifically, the economic and technical system that this American company would gain from its experiences. In Massena, where a hydropower developer had, in 1902, encouraged the company to establish an electrolysis plant, Alcoa finally purchased a hydropower company, the St. Lawrence Company. It also purchased half a dozen subsidiary undertakings, including a real estate firm, Pine Grove Realty Company, with thirty acres of lots and streets with a few houses on them. Soon afterward, one of the recurring questions that came to haunt the aluminum company first arose: should it keep or sell these buildings? Several options indeed existed: building to attract and lodge workers; renting out these homes to them, which of course, as in countless company towns built so far, allowed the company to have a certain amount of control over its resident workers; realizing the asset and maintaining a focus only on aluminum production; or investing in real estate (figs. 25, 26). It is at this point that Arthur Vining Davis expressed for the first time his

rather vague argument regarding “investment,” apparently having resolutely but secretly opted for habitat and the workers’ quality of life:

We look for instance upon our Pine Grove property, which is handled by Mr. Nutt, as an outside investment, and when he tells us he wants twenty-five more houses we let him have them because we know that he will invest our money in them not only wisely but equally wisely from the standpoint of a profitable investment. I naturally like to be able to call our directors’ attention to the fact that when we mark up an investment in town property in certain place it is a real investment and no auditor could either find fault with the character of the investment.²⁵

To an interlocutor urging him to give up Massena plots, he would eventually threaten nothing less than a tarnishing of the image of the company,²⁶ explaining that such an act would contradict Alcoa policies,²⁷ which existed only in the exchanges that Davis had with property managers:

It seems to me that we want to carefully consider whether we are going to adopt the policy of selling lots or houses, or both, in our property. In the first place, I do not think that I would want to take the responsibility of deciding this question without conferring with Mr. Hall and our other people. The time may come in the course of years when we will be doing better with our town property, or perhaps we may be up against a set of conditions such as strikes, which will make us very sorry that we have sold any property. On the other hand, I am not at all sure but what it is a good plan for us to sell some property. The arguments in favor of holding all the property and owning all the houses and the arguments against this are of course well known to everybody and it is just a question as to which way our company wants to operate this Pine Grove property.



FIG. 25. DETAILS OF AN ADVERTISEMENT BY PINE GROVE REALTY CO. IN MASSENA, PROMOTING THE UPCOMING LOCATION OF THE ALUMINUM SMELTER, THEN KNOWN AS THE "PITTSBURGH REDUCTION COMPANY," C. 1905. | LAD HHC.



FIG. 26. AERIAL VIEW OF ALCOA PROPERTIES IN MASSENA, AFTER 1920. | LAD HHC.



FIG. 27. EXECUTION PLAN FOR A NEO-FRENCH-CANADIAN HOUSE FOR ARVIDA, ALEXANDER TILLOCH GALT DURNFORD, ARCHITECT, 1948. | MCGILL UNIVERSITY ARCHIVES, DURNFORD COLLECTION.

I was not averse to selling some property from the lower end of the reservation. In other words, I was perfectly willing to take the responsibility of platting some of our property [...] When it comes, however, to adopting the policy of selling land in what might be termed the heart of our reservation I would like to at least have a chance to think on the proposition and [...] I think we ought to take plenty of time to consider just what we are going to do and have it clearly in mind what property, if any, we are going to offer for sale, and what property, if any, we are going to.²⁸

Alcoa's experience in Massena thus reveals some reasons for its rejection of quadruplexes or their eight-unit cousins, in favour of single family units in the eventual prospect of selling them, or having them purchased by its workers. But this does not explain the sudden preference for wood constructions, and although the balloon frame had been used in North America since the late nineteenth century, Massena does not explain why the aluminum company subsequently undertook to build houses based on vernacular models, notably in Arvida (figs. 27, 28), with, however, topological references

that reached far beyond the borders of Canada, as we shall see.

HABITAT, A BRANDING STRATEGY?

After apparently taking a liking to real estate in about 1914, Arthur Vining Davis discovered a taste for architecture a few years later, even to the point of disavowing his faithful companion Fickes in Arvida as regards the design of the city and the smelters (fig. 29). As of 1920, Alcoa officially hired architect Pierre Hogner "to aid in improving the



FIG. 28. NEO-VERNACULAR HOUSE OF THE M11 MODEL BUILT IN 1942 IN ARVIDA, PROBABLY FROM PLANS BY ARCHITECT HENRY ROSS WIGGS, AND IMMEDIATELY CATALOGUED UNDER "MODERN HOUSE IN THE FRENCH-CANADIAN STYLE" IN THE INVENTAIRE DES ŒUVRES D'ART DE LA PROVINCE DE QUÉBEC. | BANQ (QUÉBEC).



FIG. 29. EDWIN STANTON FICKES; OFFICIAL ALCOA PORTRAIT, C.1930. | LAD HHC.

exterior appearance of its buildings."²⁹ But just the year before, Davis, who had become president of Alcoa in 1910 but, more importantly, the major shareholder of the company following the death of Charles Hall in December 1914,³⁰ clearly expressed his preferences: "Mr. Davis," Fickes explained, "strongly objected to the appearance of buildings when concrete blocks and other substitutes were used."³¹ As such, the *modus operandi* of Alcoa changed somewhere around the First World War, in a way that would align its company town approach with principles of social utopia, thanks to the implementation of a financial strategy favouring the diversification of assets that not only allowed it to inject funds into the construction of cities, but also to broaden the pool of investors by offering what we would today call anachronistically "equitable shares." An Alcoa prospectus for a bond issue published on March 1, 1927 specified that a share of the proceeds was for "the building program [conducted by the Company] which it is anticipated will be completed by the end of 1928. The program consists principally of the building of [...] an aluminum smelting plant,

ore plant, town, etc. at Arvida, Province of Quebec"³² (fig. 30).

The process, at least in regard to the diversification of assets, was not new, and was illustrated by the disappointment of many investors concerning the extravagant "paper cities" projects, as they were called, left in the lurch with the end of the war.³³ It was thus necessary to refine it. Eventually supported, as it would be in Arvida, by the borrowing capacity of municipalities,³⁴ the insurance bond yield of the Aluminum Company of America was also guaranteed by substantial promotional campaigns, including the Arvida lithographed plan, which was no doubt its most important element. Nevertheless, for the relatively small universe of investors at the time, many of whom, as shown by Davis and Badin, and even Charles Hall and Paul Heroult,³⁵ were familiar with the reality of the industry and its sites around the world, the promise of paper was hardly enough. It was up to the company towns themselves, in all their materiality, to do the convincing. The impressive relief map of the Arvida site, and of its planning and infrastructure, illustrate these new conditions.

The abundant photographic reports and industry tours that the company gave at the turn of the 1920s were also an Arvidian specialty (fig. 31, 32).

It is in this context that after merely offering special rental rates to its Badin employees, the Aluminum Company of America began to sell its homes openly and systematically, in its city of Alcoa, in Tennessee. In March 1919, the *Aluminum Bulletin* newspaper, produced and distributed by the company that in fact continued this practice with the *Arvidian*, printed the following announcement (fig. 33):

Nearly all men and women have made up their mind that, sometime or other, they will own a place of their own [...] Are you picturing in your mind a cottage with trees, shrubs and a garden? [...] Here is the best chance to own a home you ever had [...] You can buy it for cash if you are able. If you are not, you can still buy in easy payments, just like paying rent [...]

These properties are not being sold to make money on them. They are being sold to the Aluminium Company of America Employees at cost. Speculators' profits have been eliminated [...]

\$60,000,000

ALUMINUM COMPANY OF AMERICA

5% Sinking Fund Debenture Gold Bonds

To be dated March 1, 1927 To mature March 1, 1952

Authorized and to be issued \$60,000,000. Coupon bonds of \$1,000 denomination. To be sold possible at the office of The Union Trust Company of Pittsburgh. Interest payable at the office of The Union Trust Company of Pittsburgh, or at Bankers Trust Company, New York, March 1 and September 1 without deduction of Federal Income Tax up to 7%.

Subject to redemption, at a price as in part, on any interest date upon 30 days' notice, or the Sinking Fund payment upon four weeks' notice, at 105 and accrued interest, if redeemed on or before March 1, 1937, or at 103 and accrued interest, if redeemed after March 1, 1937.

SINKING FUND

Sinking Fund of \$1,000,000 per annum, commencing January 1, 1929 up to and including January 1, 1937 and of \$2,000,000 per annum commencing January 1, 1938 up to and including January 1, 1952, to be paid by purchase upon tenders made on or before each January 31, Bonds at less than the current redemption price. To the extent that this fund is not exhausted by tenders, Bonds shall be called by lot for redemption on the first day of March next following the date of each Sinking Fund payment.

THE UNION TRUST COMPANY OF PITTSBURGH, TRUSTEE

FREE OF PENNSYLVANIA FOUR MILL TAX

The accompanying letter from Mr. Arthur V. Davis, President of the Company is reproduced as follows:

BUSINESS

The business conducted by the Company—and by Company in mining Aluminum Company of America, together with subsidiaries—was established in 1888 and consists of the mining of the ore of aluminum, smelting of aluminum therefrom and its fabrication.

The primary business of the Company is the smelting of aluminum from its ore (bauxite). Smelters are located at Niagara Falls and Massena, New York; Alcoa, Tenn.; Basin, North Carolina; Shawanigan Falls and Arvida, Province of Quebec, and in Norway.

More than 500,000 h. p. are at present utilized in the smelting of aluminum by the electric process. The hydro-electric plants for the development of this power are either owned by the Company or the electric power therefrom is obtained under long-time leases at such rates as make these leases very valuable. The Company also carries on an extensive fabricating business, producing aluminum sheet, rod, wire, tubes, castings, and other similar forms. Its mills for this purpose are located at Alcoa, Tenn.; New Kensington, Pa.; Edgewater and Garwood, N. J.; Niagara Falls, Massena and Buffalo, N. Y.; Cleveland, Ohio; Detroit, Michigan; Fairfield, Conn.; Toronto and Shawanigan Falls, Canada. The Company owns its own bauxite mines in Arkansas, South America and several European countries, and has its plant for the preliminary refining of bauxite at East St. Louis, Illinois.

PURPOSE OF ISSUE

The proceeds of these Bonds are to be used first to provide funds for the redemptions of outstanding funded debt exceeding \$25,000,000 and for the payment of bank indebtedness contracted in the last four months in connection with its building program.

The remaining proceeds of this issue are to be used for the corporate purposes of the Company including this building program which it is anticipated will be completed by the end of 1928. This program consists principally of the building of dams and hydro-electric plants at Scatterish and at Basin, North Carolina, and an aluminum smelting plant, one plant, town, etc., at Arvida, Province of Quebec.

FINANCIAL

For the ten years ending December 31, 1926, the net income of the Company after taxes and depreciation available for interest has averaged over \$12,000,000 per annum and for the last three years such net income has been, respectively: 1924—\$13,423,256.69; 1925—\$12,891,205.40; and 1926—\$19,747,068.85.

The maximum annual interest requirements of the total funded debt including the present issue of bonds aggregate \$3,000,000.

The present quoted price of the Preferred Stock and the Common Capital Stock of Aluminum Company of America indicates a value exceeding \$250,000,000.

100 and accrued interest, to yield 5.00%

The above bonds are offered when, as, and if issued and received by us and will only be issued on the approval of a committee of all legal practitioners in connection with the issuance thereof, and also subject to the approval by the stockholders of the Company of the issuance and sale of the Bonds. Interest receipts of The Union Trust Company of Pittsburgh will be delivered about March 1, 1927, which interest receipts will be exchangeable for debenture bonds when prepared.

All legal details pertaining to this issue will be passed upon by Messrs. Gordon, Bonds, Buchanan and Scott, of Pittsburgh.

THE UNION TRUST COMPANY OF PITTSBURGH
PITTSBURGH, PENNSYLVANIA

We do not guarantee the statements and figures cited and given, but they are taken from sources which we believe to be reliable.
February, 1927.

FIG. 30. ISSUANCE OF OBLIGATIONS BY ALCOA IN 1927. | LAD HHC.

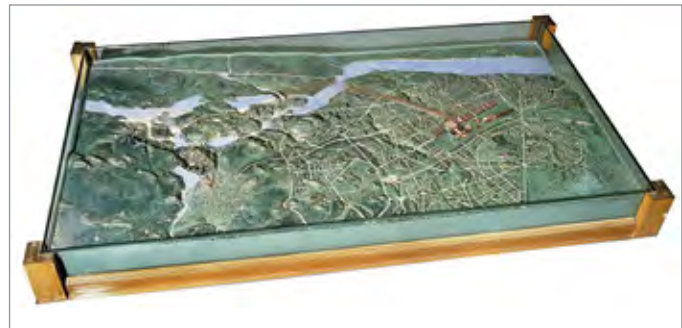


FIG. 31. MODEL OF THE TOWN OF ARVIDA, ITS SITE AND HYDROELECTRIC FACILITIES, 1926. | MUSÉE RÉGIONAL DE LA PULPERIE DE CHICOUTIMI.

Aluminum Company of America

INSPECTION TRIP TO SAGUENAY DISTRICT

September 22nd to 28th NINETEEN TWENTY-SIX

Guests			
NAME	Car No.	Compt.	
Ahmed, J. E.	2	D	D
Allen, Geo. G.	1	C	C
Bailey, E. W.	3	E	E
Bishop, George T.	2	F	F
Burford, James W.	2	G	G
Clapp, George H.	1	A	A
Cockburn, F. J.	3	B	B
Davis, Arthur V.	4	A	A
Davis, Edward K.	1	A	A
Flavelle, St. Joseph, Bart.	5	B	B
Fuller, Henry J.	2	B	B
Goodwin, Alvin	3	C	C
Gibbons, George R.	4	C	C
Gordon, George B.	1	F	F
Holt, Sir Herbert	2	F	F
Hughes, Charles E., Jr.	2	H	H
Hunt, Ray A.	1	J	J
Jack, E. A.	4	A	A
Johanson, Homer H.	1	H	H
Lawrie, Alvin K.	4	B	B
Lee, William S.	2	I	I
Lennox, Barclay	3	C	C
Liggins, Sidney S.	1	I	I
Lennox, S. H.	3	I	I
McCarthy, Leighton	3	J	J
McClellan, Edward F.	2	G	G
McMillan, H. C.	1	D	D
Mellon, Hon. A. W.	3	E	E
Mellon, R. B.	1	E	E
Noyl, C. E.	2	H	H
Parkson, W. R.	2	A	A
Price, John H.	4	D	D
Smith, Julius C.	3	A	A
Smith, William Waters	1	B	B

FIG. 32. SOUVENIR BROCHURE OF AN INSPECTION TRIP TO SAGUENAY ORGANIZED BY ALCOA, 1926. | LAD HHC.



FIG. 33. DETAILS OF AN ADVERTISEMENT FOR ALCOA HOMES PUBLISHED IN THE ALUMINUM BULLETIN IN MARCH 1919. NOTICE IN THE PICTURE THE TWO LINES OF WORKERS, WHITE AND BLACK, CONVERGING AT THE SALES OFFICE, SOME SAYING "AT LEAST EVEN I CAN HAVE A HOME"; OTHERS "HERE'S WHERE WE ALL SHARE ALIKE." | BCHGS.



FIG. 34. ADVERTISEMENT FOR HOUSES AIMED AT "MR. COLORED MAN" IN ALCOA, TENNESSEE. | BCHGS.



FIG. 35. COMMUNITY SCENE IN THE SMELTER IN ALCOA, TENNESSEE, WHERE WORKERS GREETED REPORTERS FROM *LIFE* MAGAZINE. | BCHGS.



FIG. 36. AERIAL VIEW OF THE PLANT AND PART OF THE QUARTERS (SEGREGATED) OF ALCOA HOUSING, TENNESSEE, 1920. | BCHGS.



FIG. 37. "TROPICAL BUNGALOWS" IN ALCOA, TENNESSEE. | LUCIE K. MORISSET.



FIG. 38. "TROPICAL BUNGALOWS" IN BAUXITE, ARKANSAS. | LAD HHC.

Why does the company sell this property at cost? [...]

The home owner is not only a better employee; he is a better citizen. His mind is occupied with the betterment of himself and his family. He takes more interest in civic and public affairs.³⁶

The Aluminum Company of America was able to offer homes "at cost" because it sought to streamline construction in order to produce homes that were still comfortable enough at a lower cost, and proved

to be nevertheless capable of generating acceptable features for workers wishing to become owners and settle in the company town. In Tennessee, as we have already explained,³⁷ the company outlined the planning system that would make its fortune in Arvida: a department of designers produced a relatively limited range of house models in advance, which were distributed throughout the city to ensure a minimum number of alternating models aligned from street to street. (This was also

done in Badin. Here, however, the legacy of the French and a handful of tailor-made houses increased the number of architectural designs.) Each model could then be identified and analyzed, so that its productivity, as it were, could be monitored like ingots in a factory.

Although segregated, as was usual in this region of the United States, the city of Alcoa set itself apart by offering an aesthetic residential area to all, light years

ahead of the dreary mining villages or the appalling bunkhouses from the various housing crises that had struck Massena (figs. 34, 35). While elsewhere landscape variations and the possible appropriation of different types of houses limited such developments to a few specific areas, often reserved for wealthier or more powerful clients, the decision by Alcoa to promote the sale of its houses simultaneously with the accommodation of its workers was based on the rationalization of architectural and urban designs, which in turn supported the systematic organization of construction. In this way, the company erected 700 houses in just three years in its city in Tennessee (fig. 36). The wood frame construction favoured by the Aluminum Company of America in Massena obviously supported this rapid building of various types of houses, ranging from sophisticated cottages with many balustrades, dormers, cornices and moldings, to the most rudimentary homes that we have dubbed “tropical bungalows” (figs. 37, 38). These simple square one-storey buildings with a mere gallery only delimited by the front part of a double sloping roof were practically considered ordinary in the world of housing for “foreigners”: variants of these dwellings could be found in Bauxite, the Alcoa city in Arkansas, as well as in Badin. They were also found in Henry Ford’s Amazonian utopia, Fordlandia, where the bungalows were apparently too Nordic in design and became veritable ovens under the Brazilian sun.³⁸ Internationalization and local climates were not always a smooth fit!

The decision of the Aluminum Company of America to become a mortgagee and spread the payment of houses over terms of five, ten or fifteen years did not yield the hoped for success in Alcoa, and this choice in favour of access to property may actually have hindered the capitalization it claimed to support. In fact,

breaking up the urban landscape into multiple properties risked affecting the brand with which the company wanted to invest the urban landscape. The easements included in the titles of the Arvida houses solved this dilemma, and they became all the more necessary when the company, drawing upon the expertise of the civil law notary Miville Lacroix, set up a partial payment plan devoted to further facilitating purchases by workers. This is what Alcoa had learned in Badin during the economic difficulties of 1921: it was better to actually give the houses away than to leave them vacant, especially if the company managed to ensure the stability of the workforce it had struggled so hard to recruit. Recruiting was difficult given the paradoxical nature of the pot man’s work, which focused on aluminum production, and was both particularly difficult and relatively specialized:

It would be far better for this company to allow all employees who we would desire to have return to work here when times get better remain in their homes free of rent and only charge them for light and water used [...] the house would be better taken care of and protected by being lived in than by remaining empty [...] The fact that when we start to build up the organization again each of these men will cost us from \$75 to \$1000 to bring back and it is this item that I am looking at even more than the protection of the house » [...] if we allowed them to remain free of rent or practically so in their homes even should the man go off to seek work elsewhere we will to say the least have the hold on him by his family remaining here. This will be particularly the case with the negroes.³⁹

In Arvida in 1929, a third of the houses were thus “under a contract of sale.” Archives reveal that the required payments of Arvidian owners may have

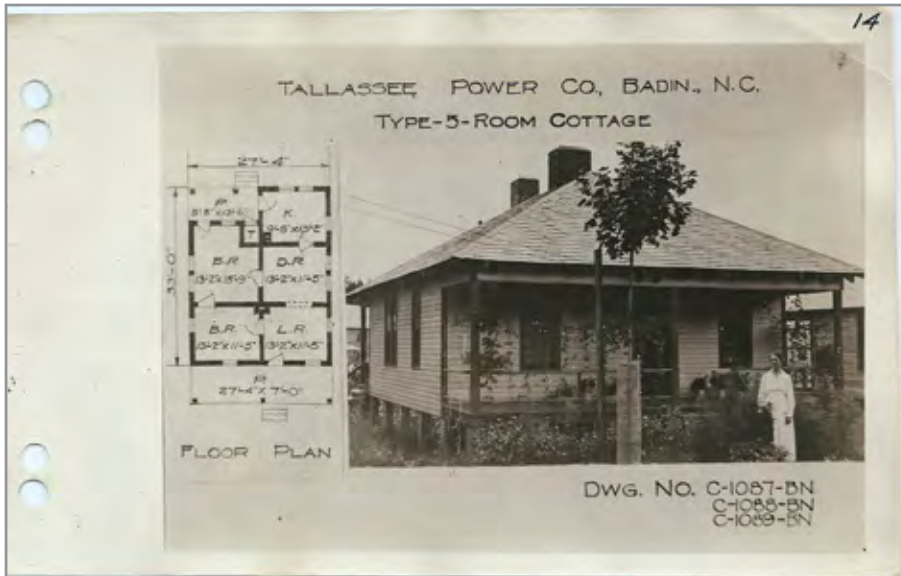
been ignored when the decline in smelter production altered the solvency of some workers. Thus, in 1927, a note in the credit report of a C3 house – “wages reduced. Can not keep up payments” – exposed the termination of a contract of sale and the reconditioning of the property for the possible arrival of a new occupant. However, without any rental or other income listed in the meantime, we discover that the same worker still lived in the same house seven years later⁴⁰ (fig. 40).

Although habitat could be part of a branding strategy, and access to property could diversify capitalization, strengthening the investor base of the company is not enough to explain its urban planning philosophy, or to describe the exact shape that this habitat would eventually take.

“DESIRABLE PLACES TO LIVE”

The Aluminum Company of America, which had already attracted attention in North Carolina for offering lodgings to its “coloured” workers, as its French predecessor had done, also stood out for its increasingly apparent concern with the well-being of those who lived in its “investments.” In Arvida, the town manager expected workers to learn to behave in a more civil manner thanks to regular acquaintance of gardens and groomed landscapes, as well as through schooling. As we have seen, even before the days of Arvida the aluminum company had won over the visitor from the Hampton Normal and Agricultural Institute who indicated, for example, that

It is the declared policy of the management to treat colored men with consideration, and to make them so happy and contented that labor agents will find it impossible to recruit here.⁴¹



14.

Type 5 Room Cottage - White town

Number Built 515A

DESCRIPTION OF HOUSE:

Location 3 Ash St. Roof Slate

Wall—Outside sheathing, paper, siding Inside Open stud, celled on one side and delled over

Floors Double pine

Foundation Brick piers 1' x 1'

Basement 0 Equipment 0

Heating stoves

Floor Area in sq. ft. 1114 Cost per sq. ft. 9.91

Cubical Contents 9905 Cost per cu ft. 9.10

Cost without fixtures 986.00 (Est) Fixtures 233.00 (Est)

Total cost \$1,019.00 Year Built 1916-1917

FIG. 39. EXAMPLE OF A CARD CATALOGUE OF BADIN PROPERTIES, SIMILAR TO WHAT WOULD BE FOUND IN ARVIDA. THIS IS A MORE SOPHISTICATED VERSION OF A "TROPICAL BUNGALOW" FOR THE "WHITE TOWN": THE FILE INCLUDES DATA CONCERNING THE CONSTRUCTION OF THE HOUSE, THE YEAR OF ITS CONSTRUCTION, AND DETAILS REGARDING ITS PRICE. | BHM.



FIG. 40. C3 HOUSE SOLD BY CONTRACT OF SALE AND "REPOSSESSED" IN THEORY IN 1927, BUT WITH THE SAME RESIDENT IN 1934. IT IS ILLUSTRATED HERE IN THE TOWNSITE HOUSES CATALOGUE WHICH, LIKE BADIN'S, LISTS THE PROPERTY MODELS BUILT IN ARVIDA. | RTA (SAGUENAY).

His tour of Alcoa, which was still under construction when the visitor passed through, actually did not leave an entirely positive impression, but for different reasons. In his words, "the company is more concerned about providing opportunities for questionable amusements for the worse part of the community than it is about providing places of worship for the better part."⁴² Nevertheless, in Badin as in Alcoa, he noted that the arrival in office of a new superintendent, Edward Thorpe, had put an end to certain types of mistreatment, which he credited to Thorpe's English origins and his experience in Mexico and Canada. Even in Alcoa, which already had a population of over 4,000 in 1925, the aluminum company could boast that it had "recognized early the importance of having good schools and good housing. And for recreational areas [we] planned to have approximately one acre of parkland for each people"⁴³ (fig. 41, 42, 43).

Given the pace at which globalization left its sites further and further apart and increased the number of cultures that Alcoa confronted, it would appear that it was particularly during the construction of Moengo, in Suriname, starting in 1920, and of Mackenzie, in British Guiana, during the same period, that the concept of a "desirable place to live," which would come to characterize Arvida⁴⁴ (figs. 44, 45), started to spread within company management. In Moengo, where plans reveal the construction site's systematic checks put in place at the time, the record spoke of low-cost dwellings, as well as free water and power (fig. 46). Some workers, who discussed their move from an ancient palm leaf hut to one of these dwellings, dormitories or stone houses, reported that "one could even get loans to build a house [...] The Company took care of every minute detail [...], even replacing burnt-out light-bulbs."⁴⁵ In less than a year, it seems that the village built



FIG. 41. ALCOA "TROPICAL BUNGALOW," "OWNED BY TWO OLD EMPLOYEES OF THE ALUMINUM COMPANY"; PUBLISHED IN 1919 IN THE *ALUMINUM BULLETIN* BY THE COMPANY, WHICH WANTED TO PROMOTE HOME OWNERSHIP, PARTICULARLY AMONG ITS EMPLOYEES "OF COLOUR." THE ACCOMPANYING TEXT ADVERTIZED "PLENTY OF SHADE, CONVENIENT TO THE PLANT, STORE, SCHOOL AND CHURCH AND PAVED STREET." | BCHGS.



FIG. 42. POSTCARD OF ALCOA'S SWIMMING POOL, IN TENNESSEE, WHICH STRONGLY MARKED THE COLLECTIVE IMAGINATION OF THE TOWN, AS WOULD KITIMAT'S, IN BRITISH COLUMBIA, AN ALCAN CITY (1954) AND COUSIN TO ARVIDA. | BCHGS.



FIG. 43. THE NEGRO SCHOOL BUILDING COMPLETED IN 1925, LISTED IN BADIN'S PROPERTY FILE. THE NOTICE INDICATES THAT GRAMMAR AND HIGH SCHOOL SUBJECTS ARE TAUGHT, AND THAT THE ROOF, GUTTER AND DOWNSPOUTS ARE ENTIRELY MADE OF ALUMINUM. | BHM.

by the Aluminum Company of America and its subsidiary, the *Surinaamse Bauxiet Maatschappij*, stood out for all to see. Designed to house 4,000 workers, women and children, it was divided into an American neighborhood and two distinct neighborhoods for workers from Suriname and Java (fig. 47, 48). It would be described as "*een stuk moderne geschiedenis en een monument voor de wilskracht en de volharding der Amerikanen*"⁴⁶ which established, in the jungle, health infrastructure, malaria prevention measures, and facilities so modern that they overshadowed even

the installations in the capital, "*door hun ervaringen in andere tropische enclaves zoals Panama en Cuba.*"⁴⁷

Whether they were the result of rumours or reality, these depictions of modern philanthropy at the very least reflect an intention to be cast in a positive light that became increasingly evident as the aluminum company moved further away from its base in the northern United States. Even though the term "Company Housing" was commonly used starting in the early 1920s, creating a desirable habitat and living environment involved risk taking in the

midst of increasingly exotic conditions and customs. Asked to evaluate the possibility of eventually exploiting Guianese bauxite on a permanent basis, Edwin Fickes stated somewhat fearfully that

I knew of Guiana bauxites, but had considered them so far inland that it would be out of the question for us to use them; also I had in mind the unhealthfulness of that region, very much so, because I had worked on plans for a tramway and power plant in Georgetown the building of which cost the lives of two of my friends who died of tropical fevers [...] Consequently these bauxite occurrences, like many others in unhealthy climates and inaccessible places, did not seem worthwhile when compared to the Mediterranean bauxites.⁴⁸

Although Fickes ended up drafting plans for the village of Mackenzie (as well as for mining installations, the railroad and the Demerara docks), the company did not feel comfortable venturing too far into the realm of local traditions. During the same period, none other than Puerto Ricans were a source of worry in Massena: "the Porto Rican is an outdoor liver and to house him in the North in sealed houses, with little chance of his getting out like he is accustomed to, would bring on untold sickness."⁴⁹ In Mackenzie, given that "the planning of tropical housing was new to all of our people,"⁵⁰ Fickes made inquiries of one of his friends, who was president of the United Fruit Company in Boston, in order to obtain valuable expertise. As a result, the Aluminum Company of America managed to retain the services of the engineer Morris Knowles, who was hired to help complete the company's facility in Guiana, as well as to upgrade facilities in Badin and Alcoa.⁵¹ A renowned planner, Knowles was preparing to publish his manual entitled *Industrial Housing*,⁵² which, according to critics, would be the first such work to recognize "the interdependence of many agencies and the need of the co-ordination of several



FIG. 44. VIEW OF MOENGO, IN SURINAME, IN 1928, TAKEN BY AUGUSTA CUIEL. | SSM.



FIG. 45. AERIAL VIEW OF MACKENZIE C. 1950. | ALUMINIUM PANORAMA.

professions in the development of a successful town plan and in the up-building of a contented industrial community.”⁵³ In other words, Alcoa was thereby making a resolute choice to move forward on the basis of a modern planning paradigm aligned with community satisfaction. Indeed, the *Canadian Geographical Journal* would soon cite Mackenzie⁵⁴ for the quality of his “dwellings designed for tropical conditions:”

For example, as a protection from termites, the houses are supported about eight feet above ground on concrete posts, each of which has a small pool of oil around its base. All the staff houses are entirely screened, which, strange to say, was an innovation in British Guiana.⁵⁵

However, it was not only bauxite that led the company to the confines of strange jungles. At this stage of its integration, Alcoa was also trying to expand outwards. To this end, it had taken control of the American Body Company in 1924 in order, at the very least, to make optimal use of aluminum in the growing automobile market. The next chapter of the company’s history is centred in part on the lawsuit that the American government brought against the company

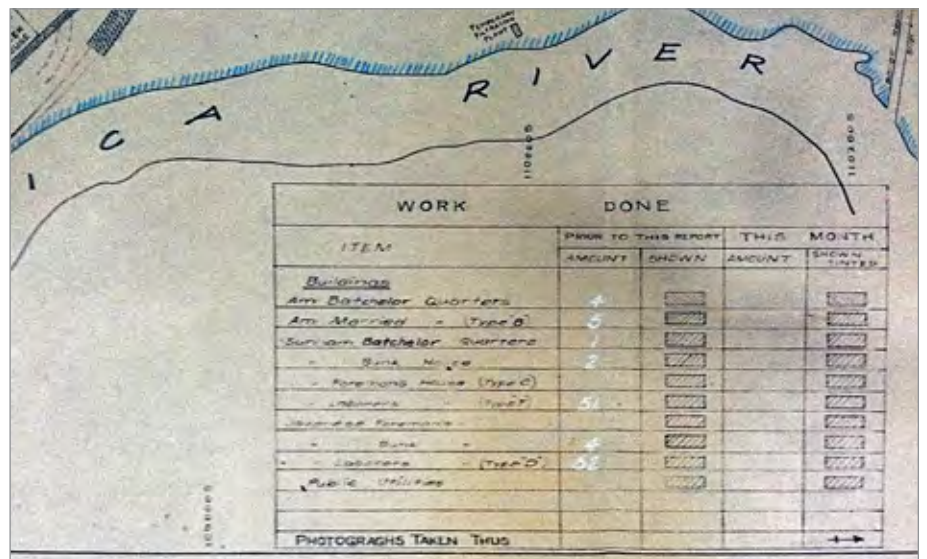


FIG. 46. PRINT CARTOUCHE OF A MOENGO TOWN PLAN DEPICTING THE PROJECT, AS WELL AS ORGANIZATIONAL CHARTS TO BE FOUND IN ARVIDA.

pursuant to the Sherman Antitrust Act. This episode reminds us that at the beginning of the 1920s, Alcoa dreamt above all of hydroelectricity, which was the least transportable of its resources. This is what had attracted the aluminum company to Shawinigan, Quebec in 1899, and access to unrivalled hydroelectric potential is also what drew it to the shores of the Saguenay River and Lac Saint-Jean approximately twenty years later. We have already briefly told the story of this quest for white coal that led to Saguenay,

where Davis ended up outlasting his local associates, James Buchanan Duke and William Price, and also triumphed over his competitors, including probably Henry Ford himself. However, with regards to the company’s urbanism adventure, which was henceforth driven by the quest for “desirable locations,” the conquest of this faraway Eldorado better explains the difference between Arvida and the still rudimentary appearance of the Aluminium Company of America’s company towns. Arvida’s hundred or so models did not



FIG. 47. PLAN OF MOENGO'S DISTRICTS, C.1922. | PRIVATE COLLECTION.



FIG. 48. POSTCARD OF THE WORKERS' HOMES IN MOENGO, AGAIN IN THE "TROPICAL BUNGALOW" FIGURE, HOWEVER, ERECTED ON STILTS HERE; THIS IS ALSO THE CASE, AT THE SAME TIME AND NO DOUBT FOLLOWING THE RECOMMENDATION OF MORRIS KNOWLES, IN MACKENZIE. | PRIVATE COLLECTION.

include any bunkhouses, tropical bungalows or quadraplexes, and the first 34 of them produced a town of 270 houses built in only 135 days. At this stage of the multinational company's peregrinations, this triumph also explains what retrospectively appears to be the first proactive invention of a "Canadian" vernacular habitat rooted in the genius of place, which emerged from a union of the aluminum company and this territory, as Nordic as it was favorable to aluminum.

FROM TROPICAL BUNGALOWS TO NORDIC COTTAGES

Construction in Arvida was based on the architectural streamlining undertaken in Alcoa, but the speed of construction was nevertheless astonishing. The engineer in charge, Harold Wake, previously employed in Badin, stated that he had rejected most of the plans for houses designed in the United States, except for 20 or so houses traceable to the portfolios of the architect James Gamble Rogers II, at that time involved in work on the Florida resort of Winter Park. He also made an exception for a certain number of front elevations, delivered, again according to Wake, by Hjalmar Ejnar Skougør, an engineer of Danish origin

(fig. 49). Strictly in line with local practices, as was the case in the tropics, Wake, in effect, replaced American houses with others, modeled, in his words, "on the type of houses common in the province of Quebec." These houses reproduced the usual front gallery, the recognizable curving bellcast formed by the deep eave at the bottom of the double sloped roof and the gabled dormer windows, all documented at the time by McGill professor Ramsay Traquair, as typical of the "Quebec cottage"⁵⁶. They also replicated the traditional family room, instead of the living room and dining room found more usually of the most luxurious American houses (figs. 50, 51). Skougør himself was probably no stranger to this sort of identity-producing handiwork, having written a short while earlier, from Nueva Rosita, his Mexican creation, that "[i]n deciding upon the building material for the town site the natural development of building operations in this territory for the past fifty years was strictly adhered to."⁵⁷ The built landscape of the Chilean saltpeter city of María Elena, constructed at the same time as Arvida, and the only other known work by the Skougør-Brainerd team, tends to confirm this leaning on the part of the creators of Arvida in favour of local figures, although the very hieratic

quality of the overall plan of the Chilean city, probably due to Brainerd, does not at all seem locally or topographically inspired. As if to underscore its foreign character, furthermore, a popular rumour had it that he reproduced the flag of the United Kingdom!⁵⁸

From Warren's houses in Alcoa to those of Massena, the urban possibilities, and still more those involving the human habitat, greatly increased due to the industrial needs of the World War 1. While the neo-Mexican architecture of Irving Gill in California remained the exception in the second decade of the 1900s – as, back in 1917, did that of Betram Goodhue in Tyrone (New Mexico), for example – explorations of the vernacular and the genius of place, which would produce what historiography calls "regionalist" architecture,⁵⁹ were gradually freed from world trade fairs and exhibitions. Thus, in 1926, the critic Lawrence Weaver, in his work *Cottages*, praised "the return to traditional types" and "the return to local traditions," in this case referring to Bournville, the model city of the chocolate maker Cadbury.⁶⁰ It will be recalled that a few years earlier the engineer Edwin Fickes expressed admiration for the latter city, given most notably its attractiveness,



FIG. 49. CURRENT VIEW OF ONE OF THE HOUSES IN ARVIDA ATTRIBUTABLE TO ARCHITECT JAMES GAMBLE ROGERS II, OF THE K3 MODEL, AND ITS GARAGE, LOCATED, LIKE THE GARAGES OF OTHER HOMES IN ARVIDA, TO THE REAR OF THE LOT, AND BORDERED BY A SIDE ALLEY. | LUCIE K. MORISSET.



FIG. 51. A HOUSE OF THE A1 MODEL OF ARVIDA, RECOGNIZABLE BY ITS ROOF EAVES AND ITS GABLED DORMER WINDOWS. | JOANIE LAPOINTE.

illustrated, as he put it, by a “long waiting list of those anxious for Bournville employment and residence.”⁶¹

Nevertheless, the tin roofs of Fordlandia bungalows, built as of 1927, in themselves illustrate the extent to which such sensitivity to local tendencies remained a marginal phenomenon. As highlighted by Margaret Crawford,⁶² the American cottage, reinvented by Grovesnor Atterbury in the model community of Indian Hill (Massachusetts), emerged rather as an instrument of architectural nationalism meant to influence immigrants, and after the First World War, the Ford Homes located close to Detroit (Michigan) confirmed this assimilationist vocation.⁶³ Earlier, in Kistler (Pennsylvania), the planner

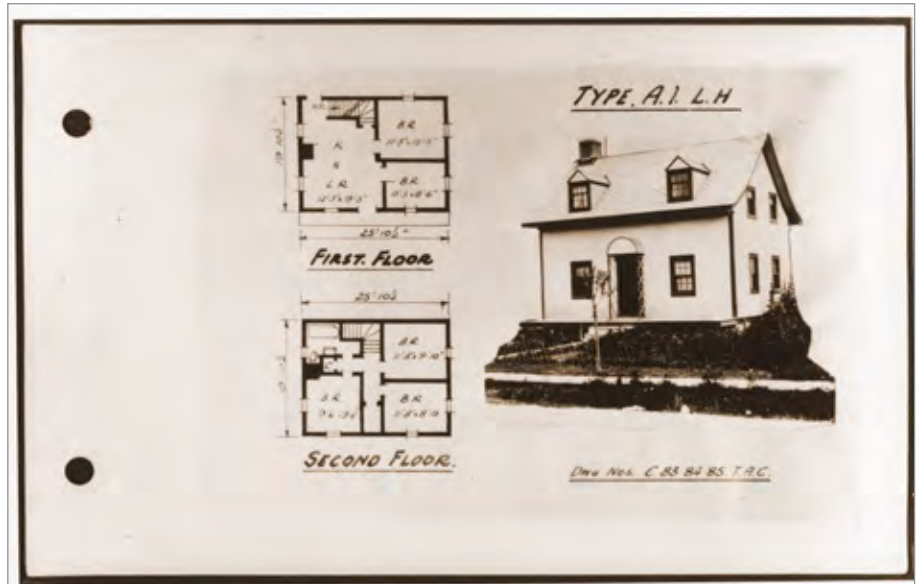


FIG. 50. TWO VARIANTS OF THE “QUEBEC TYPE” HOUSE INVENTED BY THE ENGINEER WAKE, CHARACTERIZED BY BOTH ITS ELEVATION AND ITS PLAN. | RIO TINTO ALCAN (SAGUENAY).

John Nolen, who was struck by the ethnic heterogeneity of the working people, declared that “[t]he population being so largely foreign in its make-up, there is a distinct necessity for a lead to be given in the direction of Americanism.” Neither the growing diversity of the working-class population, nor the fact that in the 1920s the companies set up further and

further afield, seemed to have changed this ignorance of cultural expressions and “foreign” uses, though they were in fact local in nature. The countless illustrations of the English Domestic Revival are moreover reflections of these phenomena. They remind us of the immense fortune of the Garden City and the somewhat over-used proposals of Raymond Unwin,⁶⁴ from



FIG. 52. EXAMPLE OF A HOUSE IN MARGARETHENHÖHE, ESSEN (GERMANY), THE CITY CONSIDERED THE FIRST GERMAN *GARTENSTADT* AND BUILT AS OF 1910, AT THE BEHEST OF MARGARETHE KRUPP, ACCORDING TO PLANS BY GEORG METZ. | LUC NOPPEN.



FIG. 53. POSTCARD OF A FEW HOUSES IN TÉMISCAMING AS BUILT, STARTING IN 1918, AT THE BEHEST OF THE RIORDON PULP AND PAPER COMPANY, ACCORDING TO THE PLANS OF ARCHITECT THOMAS ADAMS. | MCCORD MUSEUM OF CANADIAN HISTORY.



FIG. 54. "ENGLISH DOMESTIC REVIVAL" COTTAGES IN RIVERBEND, A PULP AND PAPER TOWN CREATED IN 1925 BY THE PRICE BROTHERS COMPANY, ON THE EDGE OF LAC SAINT-JEAN, NEAR THE GRANDE DÉCHARGE HYDROELECTRIC FACILITIES, WHICH WOULD ALSO GIVE BIRTH TO ARVIDA. | BANQ (SAGUENAY).



FIG. 55. EXAMPLE OF AN "AMERICAN COTTAGE" IN ARVIDA, PROBABLY CREATED BY THE ENGINEER HJALMAR E. SKOUGOR. | RIO TINTO ALCAN (SAGUENAY).



FIG. 56. VARIANT OF THE ARVIDIAN "SCANDINAVIAN COTTAGE," CLASSIFIED UNDER THE "F" MODEL CATEGORY AND LISTED IN THE COMPANY'S *TOWNSITE HOUSES* CATALOGUE. | RIO TINTO ALCAN (SAGUENAY).

the few variations of a more nationalizing nature, such as the workers' houses in Margarethenhöhe (Germany), built in the Germanist manner of Hermann Muthesius, all the way to the borders of Canada where, with the exception of rare vernacular inspirations, as for example in Port Union (Newfoundland) and later in Tompkinsville (Nova Scotia), the British models dominated, from Témiscaming (Quebec)⁶⁵ to Stellarton (New-Brunswick),⁶⁶ including in Riverbend, Kénogami and Port-Alfred, not far from Arvida (figs. 52, 53, 54). The role of Thomas Adams (secretary of the Garden City Association in London and founder of the Town Planning Institute

of Canada, who may moreover have been the author of the notice about the "First Garden City in Canada" concerning Arvida, which appeared in the *Journal of the Town Planning Institute of Canada*⁶⁷) in this stylistic dissemination has been well documented.⁶⁸

The diverse cultural origins of workers around the time of the First World War nevertheless clearly contained the germ of real identity preoccupations conducive to nourishing the inventiveness of a handful of creators: in Kistler, for example, in 1914, the tenets of John Nolen inspired the architects Mann and MacNeille with a number of stylistic inventions, per ethnic

group in question, dubbed "Norman Cottage," "Georgian Cottage," and "Vermont Farmhouse."⁶⁹ It is plausible, given their participation in the public debate about urbanism and architecture, that Harry Brainerd and Hjalmar Skougor, to mention only two prominent stakeholders, were well aware of this relatively early example, if not of regionalism in the strictest sense, at the very least of an architectural redefinition of human habitat in function of the cultural background of the inhabitants; Nolen himself, the author of various manuals, did not hesitate to publish a number of images in this regard. Given the expertise that Alcoa had learned to solicit, it is thus likely that

such an achievement may have penetrated the web of ideas of the aluminum company and influenced the shape that the human habitat finally took in Arvida; the latter could not, however, have been imagined outside of the aluminum company's network of influence. Now let us see how.

Among the first houses in Arvida, in fact, we recognize some architectural achievements related to the most affluent Alcoa homes, as well as those of Eclipse Park, in Wisconsin, to refer to these relatively common examples only (fig. 55). But we also discover novel forms of dwellings, notably without integrated porches, while neighbouring houses differed due to their overhanging eaves, steeply-pitched roofline and dormers. These sequence "F" houses in the repertory of plans in the first phase of construction in Arvida were characterized by a feature that helped increase their variety; in fact, although the other house models were reduced in number by dint of a symmetrical reversal of their plan, called right hand or left hand, the appearance of these models also varied depending on how they were placed on their plot of land, *i.e.*, whether or not they were turned by 90 degrees (figs. 56, 57). By following the aluminum trail, we can nevertheless discover the predecessors of these houses: in the Norwegian electro-metallurgical and electrochemical cities of Tyssedal, Odda,⁷⁰ Høyanger, and maybe even more so, Rjukan. We must recall that these cities were at the time repeatedly visited by key players from Alcoa (figs. 58, 59, 60, 61). There, as in Arvida,⁷¹ entire cities had to be built because of the distance factor: the need to put together a stable population of workers, living with their families, led to the choice of single-family detached houses like those found in other parts of the country. The traditional construction of wood homes and their requisite coat of paint – an addition of colour



FIG. 57. CURRENT PICTURE OF A F3 HOUSE IN ARVIDA. | JOANIE LAPOINTE.

meant to illuminate the Arctic coldness – were enough to complete the figure of the Nordic cottages and the northern regionalism carefully created in Arvida; in documenting the Quebec cottage, Ramsay Traquair himself noted that "The habitant has a good eye for colour and will produce the most astonishing effects with the common house paints of commerce"⁷²... In other words, rather than a branding strategy making use of somewhat fanciful names, such as Kistler's Vermont and Norman Cottages, the combined experience of Arvida's creators, Fickes, Wake, Brainerd and Skougorg, led them, in 1926 alone, to use real architectural forms with a geographic reference (rather than an ethnic one) and to rely on the symbolic and functional balance between these forms and the territory in question to create a collective identity, which, in any case, had never existed until then.

But if "Nordic cottages" replaced "tropical bungalows" in Arvida, the town was made distinctive far more than that it was transposed. As well as the invention of houses of a "type common in the province of Quebec," numerous clues point to the creation of Arvida as being an exercise involving various forms of synthesis and adaptation. On the one hand, it must be noted that Arvidian houses, whether of the "American," "French-Canadian" or "Nordic" variety, did not fill the entire lot on which they stood, as opposed to the Norwegian houses admired by Edwin Fickes, and that they were also characterized by their more typically Canadian front porches (figs. 62, 63, 64). Like the houses of Badin and Alcoa, to refer only to these, Arvida homes were also surrounded by a large yard, guaranteed by the easements in the property titles and, subsequently, by municipal bylaws.⁷³ The



FIG. 58. A STREET IN RJKUAN, A NORWEGIAN TOWN CREATED BY NORSK HYDRO FROM 1905 TO 1916, IN CONJUNCTION WITH THE ENGINEER SIGURD KLOUMANN, CLOSE TO A HYDROELECTRIC PLANT WHICH, IN THE 1930S, WAS DEEMED THE MOST POWERFUL IN THE WORLD; A POTASSIUM NITRATE (SALTPETER) FACTORY COMPLETED THE ORIGINAL FACILITY. | LUCIE K. MORISSET.



FIG. 59. SOME HOUSES IN HØYANGER, NORWAY, A NORSK HYDRO TOWN BUILT AS OF 1917 ACCORDING TO THE PLANS OF ARCHITECTS MORGENSTIERNE & EIDE, AT THE SAME TIME AS AN ALUMINUM SMELTER CREATED BY THE ENGINEER SIGURD KLOUMANN. | LUSTITSCHLAUDI (CREATIVE COMMONS).



FIG. 60. VIEW OF ODDA, AN INDUSTRIAL CITY ALSO BORN OF HYDROELECTRICITY AND BUILT AS OF 1909 IN SOUTH-WESTERN NORWAY. | LUC NOPPEN.



FIG. 61. HOUSES IN THE TVEITAHaugEN NEIGHBOURHOOD, IN THE ALUMINUM CITY OF TYSSedal, CONSIDERED AS ONE OF THE FIRST NORWEGIAN GARDEN CITIES; THEY WERE BUILT ACCORDING TO THE PLANS OF ARCHITECT OSCAR HOFF BASED ON A GENERAL PLAN BY MORGENSTIERNE & EIDE. | LUCIE K. MORISSET.

houses were furthermore built without fences, as if to declare the definitive abolition of the semi-detached houses found in old company towns, and they were made distinct as much originally as after successive paint jobs, thereby in some way affirming their individuality or their “detached” nature. The creative synthesis of Nordic, Canadian and American practices, along with the undoubted addition of a few touches of British urbanism, which also inspired Tony Garnier, thus engendered the sacred model of the American suburb, long before it actually came into being.

A CLASSLESS CITY... DEMOCRATIC LIKE ALUMINUM

Similarly, regarding the adaptations and particularizations that occurred in Arvida, one may wonder about the fate of one of the most dissonant housing models. Among the sixteen archived housing models found drawn in perspective (and the “Nordic cottage” is not among them), we discover a four-roomed model. It is difficult to believe that it could be represented in such a way and yet be built only once, as was in fact the case (fig. 65). In the town plan, including its

first neighborhood, called the “town built in 135 days,” especially near the smelter, one can find lots that are a little longer and narrower than the others, but lined with alleys apparently randomly placed, as if, we might think, some of them were not built and, thus, not represented in the plan (which, in that view, looks to have been completed after the beginning of the construction, as some of its elements, especially the smelters, are identified as being completed before the drawing). It is plausible that these lots lined with alleys were designed to accommodate row housing, or other types of lodgings,



FIG. 62. CURRENT VIEW OF A STREET IN THE FIRST NEIGHBOURHOOD BUILT IN ARVIDA. | LUCIE K. MORISSET.



FIG. 63. CURRENT VIEW OF A STREET IN THE FIRST NEIGHBOURHOOD BUILT IN ARVIDA, JOINED TO AN ALLEY BUT NONETHELESS FEATURING THE SINGLE-FAMILY RESIDENTIAL BUILDINGS CHARACTERISTIC OF THE REST OF THE TOWN. | MARIANNE CHARLAND.

such as quadruplexes, in neighborhoods characterized by slightly higher densities than others.

Did the company consider reserving less prosperous neighborhoods for poorer workers? In the real three-dimensional Arvida, as opposed to its two-dimensional prior plan, which materialized for a somewhat smaller number of inhabitants, several factors appear to have prevented this sort of discrimination from occurring, perhaps including the experience in Massena, and the segregation that resulted from it. Indeed, demographic analyses⁷⁴ show that skilled and unskilled workers were uniformly distributed throughout the town. The only exception was in regard to religion, where certain employees have finally settled close to a given church, Roman Catholic or Anglican. It is true that among the nationalities marking the demographic landscape of the early years of Arvida, the basic distinction between “foreigners” or “people of colour” could seem less simple, especially since, as in Moengo, for example, the French-English situation in Arvida reversed the paradigm: the bosses were foreign and therefore deprived of a number of rights that could be exercised by Canadians (French or English), especially in regard to municipal governance.⁷⁵



FIG. 64. VIEW OF PART OF RUE RADIN (WHICH BECAME LA TRAVERSE), WHOSE ROUTE FOLLOWS AN OLDER COUNTRY ROAD AND WHOSE LOTS REMAINED UNREGISTERED UNTIL THE END OF THE 1930S: THE TWENTY-SOME HOUSES WHICH CONSTITUTE THE COMPANY'S "PRIVATE DOMAIN." | MARIANNE CHARLAND.

As Alcoa's desire to keep its very specialized workforce in place led the company to consider local particularizations concerning living conditions of workers more carefully and, by extension, to contemplate forms of lodging that would attract families “450 miles North of Boston,” its settlement in the Saguenay region was thus accompanied by new challenges that reframed the question about this aluminum city's attractiveness. Indeed, in 1926, the geographer Raoul Blanchard counted “hundreds of Poles, Swedes, Norwegians, Finns, Czechs, Italians”⁷⁶ in Arvida, but apparently few French Canadians, the most likely group to settle in families and which represented

80 percent of the population of Quebec at the time.

On site, after acquiring 2,400 hectares of land from sixty farmers whose establishments and lifestyles remained representative of those in the region, outside of a few industrial enclaves, the company discovered that the French Canadian population it hoped to attract spontaneously proved to be much more reluctant to settle in the industrial city than expected (fig. 66). Engineer Thomas L. Brock recalled that “[i]t took a number of years to coax them off the farms in any large number to work indoors, particularly in



FIG. 65. NO DOUBT ATTRIBUTABLE TO ENGINEER HJALMAR E. SKOUGOR, THE FOUR-UNIT HOUSING MODEL OF ARVIDA, BUILT ONLY ONCE AND REPRESENTED HERE WITH THE ONLY ROW HOUSES OF ARVIDA, SERVICED BY AN ALLEY AT THE REAR OF THE LOTS. | VILLE DE SAGUENAY.

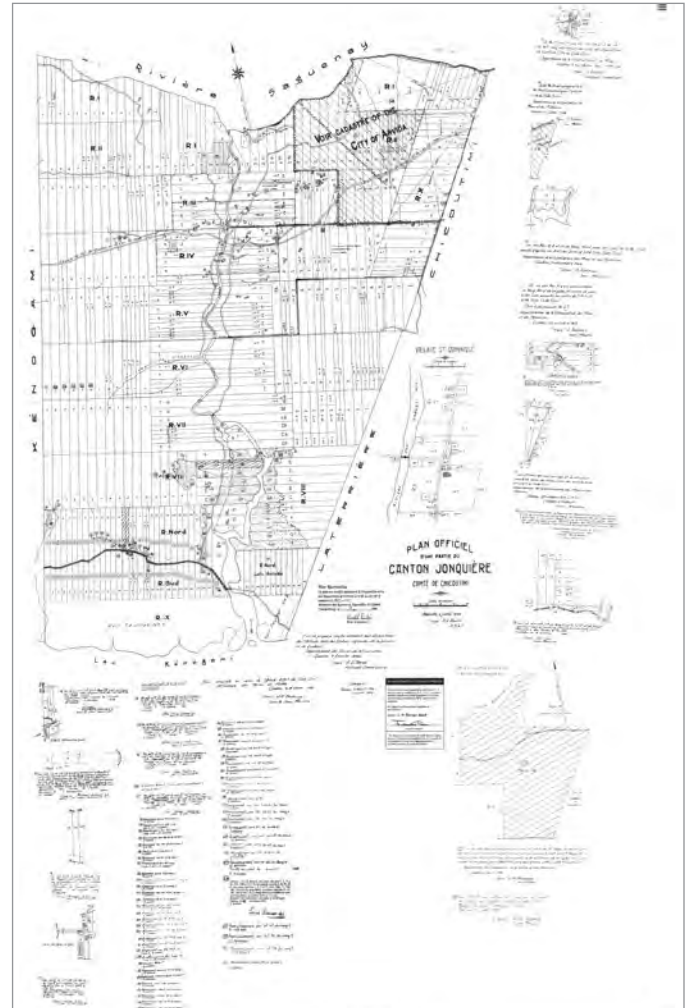


FIG. 66. THE LAYOUT OF THE TOWN OF ARVIDA ON THE ORIGINAL LAND REGISTER, DIVIDED INTO ROWS. | REGISTRE FONCIER DU QUÉBEC.

the pot-rooms or carbon plant.”⁷⁷ What made things worse was that in addition to having to attract such labour, since the total population within sixty kilometres of Arvida was barely 75,000 inhabitants, it was also necessary to retain residents and prevent neo-Arvidians, French Canadian or otherwise, from deserting Arvida for the neighboring industrial aluminum facilities of Kénogami and Port Alfred, or even cities such as Jonquièrre and Chicoutimi. The architectural turnaround brought about by the engineer Wake probably intended to correct this

problem by ensuring the French Canadian character of many of Arvida’s houses. This was done with success, it seems, because historiography indicates the formation of a “foundational core” slightly over half of which was made up of French Canadians, one third of them being from the immediate region of Arvida (which is curiously equivalent to the proportion of “French Canadian” houses). The other two thirds included some 18 other nationalities.⁷⁸ This means that the widespread reproduction of the French Canadian home, even if it had been possible, would not have been

sufficient to ensure the settlement of all these people. Such an approach could not help any more than, for example, the use of as many architectural styles as there were nationalities in Arvida. This diversity is reflected in the residential landscape of Arvida, taken as a whole and understood as the product of a creative mediation of a territory at once Nordic, Canadian, and under the influence of aluminum; it was made up of a habitat recognizable by its inhabitants, but that they could find nowhere else. However, persuading them all to settle to ensure a

sufficient workforce for the smelter no doubt required establishing social conditions conducive to the forming of a unique community of belonging, a kind of desirable elsewhere, meaning both different from the company towns known to French Canadians and also capable of integrating various cultural worlds. The law that incorporated the city of Arvida reflects this: "The city," it tells us, "shall comprise but one ward."⁷⁹

For the same reason it offered English classes to all its workers in Arvida, as it had also undertaken to do in 1918 in Massena, the company probably gave up the usual segregation that it, as well as its workers, had been accustomed to, at least in the south. As such, the company set itself apart from the ethnic considerations found in the contemporary literature on other company towns, whose planning in this regard may have simply become too complex. If the plan and distribution of Arvida housing conceal an initial distinction between denser neighborhoods populated by tenants and others featuring freehold houses, this distinction, however characteristic may be in company towns, probably have brought in Arvida real estate, social and cohabitation management issues all to be feared given the scope and era of Arvida's utopian project.

Certainly, in support of this hypothesis concerning a second turnaround of the Arvidian project, this one more driven by issues of property and society, it is important to recognize that the principle of selling homes, as expressed in both Alcoa and Arvida, actually invalidated four-roomed residential apartment models, since the cadastral division of superimposed buildings was not included in the law at the time. Even on lots connected to alleys, appearing like fossilized negatives of Arvida's segregated city, the



FIG. 67. CADASTRAL PLAN, IN 1929, OF ONE OF THE TWO SECTIONS OF THE TOWN REGISTERED AT THE OUTSET, DUBBED "THE TOWN BUILT IN 135 DAYS"; BOTTOM LEFT, RUE RADIN AND THE COMPANY'S "PRIVATE DOMAIN" ARE NOT EVEN REPRESENTED; NOR IS THE SMELTER, IN THE TOP RIGHT OF THE PLAN. | VILLE DE SAGUENAY.

single family dwelling was preferred to any other type of housing, with all the consequences that this choice had on population density (fig. 63). In addition, the considerable mobility of managers and more specialized engineers of the multinational aluminum company reduced both the probability and the obligation of permanent settlement near the smelter. The development of transport in the 1920s contributed to this situation as well. Thus we find in Arvida two small groups of lots located along the two oldest roads incorporated into the plan that were not included in the huge operation of establishing the town's land registry (fig. 67). Six of these lots correspond to staff houses and were situated not far from the smelter and railway station. They were boarding houses built primarily to accommodate employees of the construction sector, especially as

related to the smelter. Further north, fifteen correspond to the first permanent houses, where the engineer Harold Wake lived, for example; they remained without a specific registry until the end of the 1930s, when the aluminum company built the famous Saguenay Inn especially to accommodate its most mobile employees and visitors (fig. 64). There are thus good grounds to believe that the Aluminum Company of America provided these eleven properties preserved in its realm in order to offer them for rent or for free to specialists or managers who were only passing through; it would seem as though this insignificant setting aside of Arvidian urban space ought not to be confused with a voluntary gesture of segregation, especially since the territory in question is surrounded by other buildings that were intended to be sold without regard to the social status of their occupants.



FIG. 68. DISTANT STREET VIEW OF KITIMAT, BRITISH COLUMBIA, CONSTRUCTED AS OF 1954 ACCORDING TO A GENERAL PLAN BY CLARENCE STEIN AND CHARACTERIZED, AMONG OTHER THINGS, BY PEDESTRIAN PATHWAYS CRISS-CROSSING CITY BLOCKS... AS IN BADIN AND IN THE *CITÉ INDUSTRIELLE*. | LUCIE K. MORISSET.

THE SUSTAINABLE INVENTION OF A SPIRIT OF PLACE

It is as though from Alcoa's by now customary regionalism, combined with the utopian ambitions promoted by potential entrepreneurs of the site, surfaced the antithesis of the proletarian landscape of industrialized Quebec with its typical tenements and "quartiers des Anglais" (English neighbourhoods) reserved for the bosses, such as in Riverbend, Kénogami and Port-Alfred. This egalitarian achievement can be viewed as a kind of urban corollary to the popularization of aluminum itself after World War One, and of its international network. Rooted in the land and its specificities, it is no doubt among the factors that fostered the deeply rooted Arvidian identity still prevailing today. Besides contributing a typically Canadian habitat to the evolution of the American town as such, Arvida also historically marked the end of segregation along with that of tenement housing. Thus, even though Arvida is far from being the only industrial utopia, it was then and there that the industry and its needs

established the conditions of its existence. The present overview attempted to grasp this two-decade-long urban process rooted in preliminary expressions scattered elsewhere in the world.

The civil engineering, financial, strategic and urban planning efforts expended in establishing Arvida illustrate, as a backdrop to Davis's wish, that the industrialist turned philanthropist was attaining his ideal in the process of founding company towns. Arvida attracted the most knowledgeable representatives of the aluminum industry; in 1925-1926 alone, McNeely Dubose and Harold Wake from Badin travelled there; F.E. Dewey, and A.W. Whitaker from Massena followed soon after; J.P. Dearasaugh from Suriname; F.E. Dickie and J.P. Walsh from Shawinigan; J.B. White from Niagara Falls; A.C. Johnston from Toronto; J.T. Carter from New Kensington; V.T. Hultquist, head of building and construction at Alcoa City, Tennessee, and so on. In fact, the integrated aluminum complex, eventually equipped to accommodate the mining of anorthosite, as well as the nearly infinite

potential for hydroelectric development, spurred Arvida's plant to its zenith. This peaking process, backed by the multinational network of the company, which in 1928 was almost entirely turned over to the Aluminium Company of Canada, later Alcan, was accompanied by the town's taking root on Canadian soil before becoming the international capital of aluminum. A pinnacle in its own right, Arvida appears to be the first and the last of its kind; in keeping with the promise of the "magic metal of the 20th century," it was the first to solve the workers' housing issue by effecting a remarkable synthesis of all the schools of thought and experience that the company had gleaned from all over the world. It is, no doubt, also the last of that monopolistic wave's creations, and of that sort of company town, which even before Arvida was born, started to be gradually replaced by government initiatives and public housing programs. Finally, it remains unique, for only there, and only at that moment in the 20th century, was the precise conjuncture of company expertise and local practice able to produce this kind of Canadian aluminum habitat preserved to this day.

The enthusiasm to preserve Arvidian heritage and identity could not be fully understood without this "thick description" drawn from our world-wide overview and the intentions and nuances it has brought to light. Few company towns or even industrial subdivisions can be documented as thoroughly without the crossover of composite reasoning of the kind we evoked in our introduction in order to bring them and the region they spring from to life. To these ends, we have shown how aluminum inspired original thinking in urban planning, not by looking at smelter operations but rather at the ideational and material universe of its producers first, and then at a few architectural achievements from the workers' habitat; it has to be recalled that we only observed

here the figures of a quarter of the total house models produced, which summed up, in 1948, as just a little more than 10% of the company housing in Arvida.

As much as we still have to analyse in depth all the other house models produced after 1928 by architects like Alexandre Tilloch Galt Durnford, Ernest Isbel Barott, Harold Lea Fetherstonhaugh, Henry Ross Wiggs and others, which pursued the neo-vernacular quest of the first Arvida houses, we could have attempted similar gymnastics around urban form to highlight the Norwegian aluminum and hydroelectricity town of Høyanger we mentioned earlier. Its centre, built in 1950, is spatially organized in the same spirit as Arvida's, designed in 1926 by the *beaux-arts* architect Harry Beardslee Brainerd: a church and a smelter along one axis and over a river, crossing a perpendicular axis connecting the town's main public and commercial buildings.⁸⁰ The *beaux-arts* downtown area of Rjukan, also mentioned above, is akin to Arvida's as well. In the same vein, a detailed study of social models would have revealed that Alcan conducted a thorough analysis of living conditions and of any causes for dissatisfaction Arvidians might have had before proceeding to plan Kitimat, its British Columbian town, in 1954.

Based on a still embryonic scientific paradigm, such research itineraries in the history of urban planning trace avenues for interpretation which could enrich our understanding of the 20th century in as much as, away from architects' offices, they incorporate a precocious globalization of models and a predilection for the vernacular. Beyond machines and labour conditions, the heritage of industrialization still has much to disclose.

Identification of archive collections

LAC	Library and Archives Canada
BAnQ	Bibliothèque et archives nationales du Québec
BCHGS	Blount County Historical and Genealogical Society
BHM	Badin Historic Museum
IHA	Institute for the History of Aluminum
LAD HHC	Library and Archives Division, Heinz History Center, Pittsburgh
LEE	Leemage
SSM	Stichting Surinaams Museum
VS	Ville de Saguenay

NOTES

1. A great many people were critical to the documentary research underpinning this article. Here are but a few: Louise Avery (Kitimat Museum and Archives); Gilles Bertrand, Line Lafontaine, Martin Lanthier, and Suzanne Lemaire (Library and Archives Canada); Anne Buteau, Yvonne Jomphe, and Nicol Guay (Rio Tinto Alcan Saguenay); Paul Chénier (Canadian Centre for Architecture); Becky Darrell (Blount County Genealogical and Historical Society); David Duggan (City of Alcoa, Tennessee); Gaston Gagnon (Ministère de la Culture, des Communications and de la Condition féminine du Québec); Davis Summerlin, Jim and Jane Harrison, Martha Garber, Larry Drye, and all the other board members of the Badin Historic Museum who welcomed me; Nancy Hadley (American Institute of Architects); Nicole Hébert and Emily Toms (Rio Tinto Alcan Montreal); Paul K. Kerr (Beloit Historical Society); Roger Lavoie and Chantale Francœur (Ville de Saguenay); Claire Leymonerie, Patricia Hélié, and Jenny Piquet (Institut d'histoire de l'aluminium); Art Louderback and other staff at the Senator John Heinz History Center of Pittsburgh; Heather McNabb (McCord Museum of Canadian History); Audrey Bouchard, Jacques Morin, Colombe Dallaire, Régis Guérin, and Céline Villeneuve (Bibliothèque et Archives nationales du Québec); Barbara R. Stewart (Alcoa); Bruce Tabb and Tanya Parlet (University of Oregon Libraries); and Jonathan A. Underwood (Stanly County Historic Preservation Commission and Museum).
2. Notably in Morisset, Lucie K., 2009, "Ville nouvelle pour pays neuf. Arvida, ou la Cité industrielle en Amérique," in Philippe Dufieux (ed.), *Tony Garnier, la Cité industrielle et l'Europe*, Lyon, Éditions CAUE du Rhône, p. 105-130. Our latest work on Arvida explores these relationships more fully: Morisset, Lucie K., 2014, *L'aluminium fait ville. Arvida*, Québec, Presses de l'Université du Québec.
3. Hachez-Leroy, Florence, 1999, *L'aluminium français. L'invention d'un marché 1911-1983*, Paris, CNRS Editions.
4. Badin and Davis partnered to build an aluminum smelter in the Spanish Pyrenees. See in particular, about the Alcoa-Pechiney association, Kipping, Matthias, 2010, "Mintzberg's Emergent and Deliberate Strategies: Tracking Alcan's Activities in Europe 1928-2007," *Business History Review*, vol. 84, no. 1, p. 79-104. Also see, about the internationalization of aluminum, Bertilorenzi, Marco, 2010, "L'Alliance aluminium compagnie, 1931-1939. Organisation et gestion de la branche internationale de l'aluminium entre Grande Crise et guerre mondiale," in Alain Cortat (ed.), *Contribution à une histoire des cartels en Suisse*, Neufchâtel, Éditions Alphil-Presses universitaires suisses, p. 219-253.
5. Garnier referred more broadly to the metallurgical industry, while discussing more specifically the metal "used to make airplanes."
6. Anonymous, c. 1914, *État des affaires de la Southern Aluminum Company à Whitney en fin 1914*, p. 13. Institut d'histoire de l'aluminium/Institute for the History of Aluminum.
7. Ford's adventure in Muscle Shoals was related by Greg Grandin in *Fordlandia. The Rise and Fall of Henry Ford's Forgotten Jungle City*, 2009, New York, Picador, p. 66 et seq. See also Morisset, 2011 : 3-38.
8. "A Garden City for Canada—Perhaps," *The Journal of the Town Planning Institute*, 1925, vol. IV, no. 4, p. 4.
9. Cronin, Fergus, 1949, "Arvida: Ace Company Town," *Saturday Night* (Toronto) December 13.
10. Ellison, Beth, 1945, "Model City Built by Aluminum Industry," *Engineering and Contract Record* (Toronto), vol. 58, no. 7, p. 60-65 and 108-112.
11. With a view to building Arvida, in 1925 the Aluminum Company of America created the Aluminum Company of Canada as an offshoot of the Northern Aluminum Company. When in 1928 Alcoa created the Canadian company Aluminum Limited in order to transfer to it

- the better part of its operations outside of the United States, the latter became owner of the Aluminum Company of Canada. Alcoa's creation was renamed Alcan in 1945. In 2007, after having bought the French company Pechiney, Alcan was purchased by Rio Tinto, becoming Rio Tinto Alcan.
12. Rio Tinto Alcan, 2010, *Aluminerie Arvida. Centre technologique AP60*, Press Release, August 23. Translation of the French "L'histoire se poursuit avec vous."
 13. According to two translations suggested by Jacques Boulot in Riegl, Aloïs, 2003, *Le culte moderne des monuments. Sa nature, son origine*, Paris, L'Harmattan, 2003; and, before him, by Wiezorek, Daniel, 1984, *Le culte moderne des monuments. Son essence et sa genèse*, Paris, Seuil. The English is a rendering of the French.
 14. Land Register of Quebec, number 56185, April 7, 1931.
 15. Fickes, Edwin S., 1938 [unpublished typescript], *History of the Growth and Developments of the Aluminum Company of America*, p. 257, Library and Archives Division, Heinz History Center [Pittsburgh] [LAD, HHC], MSS 282, 4.
 16. Fickes : 239.
 17. Adams, Thomas, 1917, *Rural Planning and Development: A Study of Rural Conditions and Problems in Canada*, Ottawa, the author, p. 40.
 18. Quoted in Smith, George David, 1988, *From Monopoly to Competition. The Transformations of Alcoa, 1888-1986*, Cambridge, Cambridge University Press, p. 29.
 19. Williams, W.T.B., 1918, *Report on Labor Conditions at Tallassee Power Company Subsidiary of U.S. Aluminum Company, Badin, N.C.*, Hampton, Hampton Normal and Agricultural Institute, June 22, vol. 1, LAD, HHC, MSS 282, 39: 9.
 20. The archives of the Badin History Museum conserve a catalogue of dwellings, including their variants and costs, and rents established by the Tallassee Power Company, a subsidiary of the Aluminum Company of America in Badin. A similar catalogue was established by Arvida Works in Arvida.
 21. Fickes : 147.
 22. F.A. Stoughton to A.V. Davis, September 8, 1913, LAD, HHC, MSS 282, 14: 4.
 23. A.M. Nutt to A.V. Davis, June 3, 1915, LAD, HHC, MSS 282, 14 : 4.
 24. Gréber, Jacques, 1920, *L'architecture aux États-Unis. Preuve de la force d'expansion du génie français*, Paris, Payot et cie, p. 101.
 25. [Our translation] A.V. Davis to B.L. Glascock, April 24, 1919, LAD, HHC, MSS 282, 1 : 8.
 26. A.V. Davis to P.H. Falter, March 4, 1914, LAD, HHC, MSS 282, 14: 4.
 27. *Ibid.*
 28. A.V. Davis to F. W. Stoughton, June 2, 1913, LAD, HHC, MSS 282, 14: 4.
 29. Fickes : 223.
 30. Upon his death, Hall put all of his Alcoa shares, i.e., 26% of the total equity, into a trust; and apparently convinced of the importance of Davis's keeping control over the company, appointed him fiduciary of the trust, which gave Davis, with the 25% he held already, the status of de facto majority shareholder. George David Smith, *From Monopoly to Competition: The Transformation of Alcoa, 1888-1986*, Cambridge, Cambridge University Press, 2003 : 116.
 31. Fickes : 242.
 32. Prospectus kept in the Alcoa trust, LAD, HHC.
 33. We can take for example the Eclipse Park project in Beloit, announced in 1917 by the Fairbanks Morse Company as a new town with 40,000 inhabitants, designed in the manner of a "Typically American Garden Village" and highlighted by the critic Lawrence Veiller for its forty sumptuous house models, before it was reduced preceding construction to a neighborhood of about 300 houses reserved for white employees, where it finally erected only roughly 80 dwellings. See Veiller, Lawrence, 1918, "Industrial Housing Developments in America," *Architectural Record*, vol. 43, no. 4, p. 231-256 ; Beloit Historical Society, Historic Preservation Division [undated typescript], "Eclipse Park," Thematic Study no. 15, p. 208-253 ; and National Park Service, 2003, "Park Lane Apartments, Jackson County, Missouri," United States Department of the Interior, National Register of Historic Places, p. 21.
 34. The archives of Rio Tinto Alcan and the City of Saguenay, of which Arvida is now a part, include several exchanges between Arthur Vining Davis and Harold Wake, manager of the City of Arvida, in regard to the issuance of bonds by the municipality of Arvida, legally established at the creation of the company town.
 35. It should be recalled that the French inventor of electrolysis shared this credit with Charles Hall, who was delegated by Adrien Badin to establish the Southern Aluminum Company in North Carolina. It may be that he contracted a fatal dose of typhus in the eponymous town of the French industrialist in 1914.
 36. "Construction Department," *Aluminum Bulletin*, March 1919, p. 4.
 37. Morisset, 2011 : 3-38.
 38. Grandin, *op. cit.*
 39. J.E.S. Thorpe to E.S. Fickes, January 7, 1921, LAD, HHC, MSS 282, 39: 9.
 40. RTA (Saguenay), file AS-384. This is the first of nine C3 houses to be constructed, and it is catalogued in *Townsite Houses* at 260 rue Hare (today 2791 rue Hare).
 41. Williams : 4-5.
 42. Williams : 6-7.
 43. *Aluminum at Alcoa*, n.d., brochure conserved at the Blount County Historical and Genealogical Society, Alcoa, Tennessee.
 44. For example, A.V. Davis to B. L. Glascock, April 24, 1919, LAD, HHC, MSS 282, 1: 8.
 45. Interview cited by de Koning, Anouk, 2011, "Shadows of the Plantation? A Social History of Suriname's Bauxite Town Moengo," *New West Indian Guide*, vol. 85, nos. 3-4, p. 220.
 46. [Our translation] "a piece of modern history and a monument to American willpower and perseverance." Oudschans Dentz, Frederick, 1921, p. 485, quoted in de Koning : 221.
 47. [Our translation] "thanks to their experience in other tropical enclaves such as Panama and Cuba." *Ibid.*
 48. Fickes : 128.
 49. J.E.S Thorpe to C.H. Moritz, September 9, 1918, LAD, HHC, MS 282, 39: 9.
 50. Fickes : 192.
 51. *Ibid.*
 52. Knowles, Morris, 1920, *Industrial Housing*, New York, McGraw Hill.
 53. Aronovici, Carol, 1921, "Industrial Housing [...]," *The American Journal of Sociology*, vol. 26, n° 5, p. 660.
 54. Regarding Mackenzie, we have to highlight the excellent research carried out by Brad Cross, 2014, "Bound Together Yet Worlds Apart: Comparing Alcan's Industrial Towns of Guyana and Canada in the mid-20th Century," in Dominique Barjot (ed.), *Aluminium. Du métal de luxe au métal de masse* (provisioinal title), Paris, Presses universitaires de Paris-Sorbonne.

55. Kennedy, E.V.N., 1918, "Canada's Aluminum Industry," *Canadian Geographical Journal*, November, p. 36.
56. Before the publication in 1947 of his *Old Architecture of Quebec. A Study of Buildings Erected in New France from the Earliest Explorers to the Middle of the Nineteenth Century* (Toronto, The Macmillan Company of Canada Limited), Ramsay Traquair documented the Quebec cottage by way of its teaching at McGill University, starting in the 1910s, and with multiple papers produced, for the most part, with or by his friend Gordon Antoine Neilson.
57. Skougor, Hjalmar E., 1921, "Rosita, Mexico, a Carefully Planned City: Pleasing, Comfortable and Hygienic," *Coal Age*, June 2, p. 985.
58. See, for example, [in.wikipedia.org/wiki/María_Elena] (accessed in April 2014).
59. In the artistic and architectural universe of Brittany, and in the literary universe of Quebec at the time, for example. Without using the term itself, in the world of architecture in Quebec a taste of this sort developed, particularly as concerns professors Percy Nobbs and Ramsay Traquair. As regards regionalism in Brittany, see Le Couédic, Daniel, 1995, *Les architectes et l'idée bretonne 1904-1945. D'un renouveau des arts à la renaissance d'une identité*, Rennes, Société d'histoire et d'archéologie de Bretagne. We have ourselves published several works on the neo-vernacular in Quebec, more or less as a continuation of the literary regionalism of the era: among others, Noppen, Luc and Lucie K. Morisset, 1996, "À la recherche d'une architecture pour la nation canadienne-française : entre le paysage et la patrie. De la Crise à la Seconde Guerre mondiale," *Cahiers d'histoire du Québec au XX^e siècle*, no. 5, spring, p. 19-36; and Morisset, Lucie K., 1995, "À la recherche d'identités : usages et fonctions du passé dans l'architecture au Québec," in Luc Noppen (ed.), *Architecture, forme urbaine et identité collective*, Sainte-Foy/Sillery, Septentrion, p. 103-133. See also Loyer, François and Bernard Toulhier (eds.), 2001, *Le régionalisme, architecture et identité*, Paris, Monum.
60. Weaver, Lawrence, 1926, *Cottages: Their Planning, Design, and Materials*, London, Country Life.
61. Fickes : 239.
62. Crawford wrote: "cultural Americanization took the form of a self-conscious mythification of the Anglo-Saxon and colonial heritage. Simulating the architectural styles of the colonial period allowed industrial managers to affirm their allegiance to pre-industrial cultural values and simultaneously repress the multicultural social reality on which the industrial economy depended." Crawford, Margaret, 1995, *Building the Workingman's Paradise. The Design of American Company Towns*, London and New York, Verso, p. 112.
63. Loeb, Carolyn S., 2001, *Entrepreneurial Vernacular. Developers' Subdivisions in the 1920s*, Baltimore and London, John Hopkins University Press, p. 185.
64. Unwin, Raymond, 1909, *Town Planning in Practice: An Introduction to the Art of Designing Cities and Suburbs*, London, T. Fischer, p. 367-368.
65. Read, about Témiscaming: Trépanier, Paul, 1995, "Témiscaming, une cité-jardin du Nord," in Robert Fortier (ed.), *Villes industrielles planifiées*, Montreal, Boréal, p. 119-152.
66. Peter Ennals and Deryck W. Holdsworth showed, as regards Albion Mines (Nova Scotia) and New Brunswick mining operations, that housing models were imported from Great Britain. *Homeplace. The Making of Canadian Dwelling over Three Centuries*, 1998, Toronto, University of Toronto Press, p. 129.
67. "A Garden City for Canada—Perhaps" : 4.
68. See most notably Van Nus, Walter, 1977, "The Fate of City Beautiful Thought in Canada, 1893-1930," in Gilbert A. Stelter and Alan F.J. Artibise (ed.), *The Canadian City: Essays in Urban History*, Toronto, McClelland and Stewart, p. 162-185; Stelter, Gilbert and Alan F.J. Artibise, 1982, "Canadian Resource Towns in Historical Perspective," in Gilbert Stelter and Alan F.J. Artibise, *Shaping the Urban Landscape: Aspects of the Canadian City-Building Process*, Carleton, Carleton University Press, p. 413-434. See also, as regards this question involving the dissemination of the *Garden City*: Barbara Julien, 2012, "La cité-jardin au Québec," doctoral thesis in urban studies, Université du Québec à Montréal.
69. Crawford : 162.
70. As regards Odda and Tyssedal, see notably Røyane, Eva, 2011, *Fabrikkbyane I Hardanger. Husa I Industrielandskapet* [Industrial cities of Hardanger. Houses in an industrial landscape], Nord4; and as regards Odda and Rjukan, see Heiden, Noland R., 1952, "Odda and Rjukan: two Industrialized Areas of Norway," *Annals of the Association of American Geographers*, vol. XLII, no. 2, p. 109-152. Although there exists more literature about Rjukan than about other cities, the following needs to be singled out for the purposes of this article: Kjeldstadli, Sverre, 1943, *Rjukan et moderne eventyr om industri-of bondesamfunn* [Rjukan a modern fairy tale about a community made by industry], Oslo, J.W. Cappelens Forlag.
71. And, furthermore, like in certain Swedish cities, among which the example of Kiruna should certainly be mentioned.
72. Traquair : 61.
73. In this regard see Morisset, Lucie K., 2014, "Arvida, from Socio-industrial Utopia to Urban Heritage: The History and Contemporary Challenges of an Identity Project," in Tom Urbaniak and Andrew Molloy (eds.), *Company Houses, Company Towns: Heritage Conservation in Canadian Post-industrial Communities*, Sydney (NS), Cape Breton University Press.
74. Igartua, José, 1996, "Vivre à Arvida," *Villes industrielles planifiées*, Montreal, Centre Canadien d'Architecture / Boréal, p. 155-176; Igartua, José, 1989, "Worker Persistence, Hiring Policies, and the Depression in the Aluminum Sector: the Saguenay Region of Québec, 1925-1940," *Histoire sociale – Social History*, vol. XXII, no. 43, p. 16-29; Igartua, José, 1989, « L'industrialisation du Saguenay-Lac-Saint-Jean », *Saguenayensia*, vol. XXXI, no. 2, p. 4-10; and, finally, Igartua, José, 1996, *Arvida au Saguenay. Naissance d'une ville industrielle*, Montreal, McGill-Queen's University Press.
75. While English Canadian Anglophones may have been living in the "English neighborhoods" of the other company towns of Quebec, the Arvida Anglophones were of foreign nationalities, which denied them a certain number of rights, especially in regard to municipal management.
76. Blanchard, Raoul, 1935, *L'Est du Canada français. Province de Québec*, Paris/Montreal, Librairie Masson/Librairie Beauchemin, p. 106.
77. Brock, Thomas L., 1971, *Alcan in the Saguenay. The Formative Years*, Montréal, Aluminium Company of Canada.
78. Igartua, 1996, *Arvida au Saguenay* : 73-74.
79. *An Act to Incorporate the City of Arvida*, 16 George V, chap. 78, March 24, 1926, section 5.
80. Publications on Høyanger, as on most company towns in the world, seem quite fragmentary. See Førde, Einar, 1990, *Smeltedigelen Høyanger*, Oslo, Det Norske Samlaget.