



## The Americanization of the European Cement Industry: Lafarge in Comparative Perspective, from Fashion to a Structural Change

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In 2009, the European cement industry dominated the North American market. European cement groups (Lafarge, Holcim, Heidelberg Cement, Italcementi, Buzzi Unicem, and Vicat) became well established in the United States and Canada following strong Americanization during the 1940s and 1950s. The French Lafarge Group, established to overcome decolonization in North Africa, was organized in France as a tentative effort to diversify. The method worked in America for Swiss and Belgian competitors as well. With Lafarge's success in British Columbia, the trend became a durable practice. After technological advances during the mid-1960s, the Group adopted the American organizational model. Under strong leadership, Lafarge became head first of the American, and then of the world, cement industry after rapid internal growth and merger absorptions with Canada Cement (1960s), Portland Cement and the Coppée group (1970s), Redland, and then Blue Circle at the turn of the twenty-first century.

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In 2009, the European cement industry dominated the North American market, despite the recent rise of Mexico's Cemex (see Table 1).<sup>1</sup> All the biggest European cement groups—Lafarge, Holcim, Heidelberg Cement, Italcementi, Buzzi Unicem and Vicat—became well established in the

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<sup>1</sup> This study is based on materials in the archives of the Lafarge Group, Paris. I am very grateful to its board of directors for access. See also, Dominique Barjot, "Lafarge: l'ascension d'une multinationale à la française (1883-2005)," *Relations internationales* 124 (Winter 2005): 51-67.

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URL: <http://www.thebhc.org/publications/BEHonline/2009/barjot.pdf>.

United States and Canada as the result of Americanization, which began at the end of the Second World War.

The Lafarge Group provides a good example of this process. Lafarge originated as a French limestone mining company in 1833, and by the end of World War II it was the largest cement producer in both France and North Africa. The Group was established to diversify the company's activities in light of French decolonization in North Africa. By 2009, Lafarge, the third largest European group in the construction raw materials sector, was the world leader in the cement industry, ahead of its big Swiss competitor Holcim, and third in the world in the plaster industry, behind Saint-Gobain (France) and U.S. Gypsum. This is the consequence of early efforts toward internationalization, followed by a complete transition into a leading global firm.<sup>2</sup>

TABLE 1  
The World's Five Largest Cement Producers, December 31, 2006  
(in billions of euros)

	Net Sales	Cash Flow from Operating Activities
1. Lafarge (France)	16.9	2.6
2. Holcim (Switzerland)	15.2	2.8
3. Cemex (Mexico)	14.6	2.0
4. Heidelberg Cement (Germany)	9.2	1.5
5. Italcementi (Italy)	5.9	1.1

Source: Annual reports of the concerned groups.

In the early twenty-first century, North America represented a strong part of Lafarge's global net sales (see Table 2), constituting a more dynamic market than Western Europe (see Table 3). From 1998 to 2004 North America was the region where the Lafarge Group was most productive (see Table 4).

<sup>2</sup> Dominique Barjot, "Lafarge: The Keys of a Successful Internationalisation Process (1946-1973)," in *Transnational Companies (XIXe-XXe siècles)*, ed. Hubert Bonin (Bordeaux, 2002), 663-80; and Dominique Barjot, "Lafarge (1993-2004): Comment on devient firme mondiale," *Revue Economique* 58 (Jan. 2007): 79-112.

Lafarge is, to a large extent, an American group. In the 1890s, the Lafarge House established an agency in New York, where it sold the white cement used to build the New York Stock Exchange (NYSE).<sup>3</sup> However,

TABLE 2  
Regional Importance by Net Sales, Lafarge Group, 2006  
(%)

<b>Regions</b>	<b>Net Sales</b>
Western Europe	35
North America	30
Emerging Countries	35

Source: Lafarge Group Archives, Paris, France.

TABLE 3  
Annual Average Growth Rate of Net Sales, Lafarge Group  
(%)

<b>Regions</b>	<b>1992-2004</b>	<b>1997-2004</b>
Western Europe	2.7	3.5
North America	3.9	5.4
Emerging Countries	8.6	9.0

Source: Lafarge Group Archives, Paris, France.

TABLE 4  
Productivity Levels among the Geographical Areas Covered by the Lafarge  
Group, 1998-2004

<b>Regions</b>	<b>Productivity Level<sup>a</sup></b>
Western Europe	124
North America	148
Emerging Countries	62

Source: Lafarge Group Archives, Paris, France.

<sup>a</sup> Global average productivity of the Group=100

<sup>3</sup> Léon Dubois, *Lafarge Coppée, 150 ans d'industrie* (Paris, 1988), 35; and Pierre d'Ambly, *Naissance d'une entreprise: Les Pavés de Lafarge de l'armée du Roi à l'industrie de la République* (Paris, 2000), 134.

the firm's efforts to create a U.S. subsidiary in 1925 failed, when Lafarge chair Jean de Waubert could not conclude an agreement with Atlas Cement Company to produce "*cement fondu*" (a quick-hardening variety) because of a long quarrel over patents.<sup>4</sup> More successful was expansion into Canada, where the British subsidiary of the Group, Lafarge Aluminous Cement (LAC), had been founded in 1923 and established at Halifax in 1929.<sup>5</sup>

The international expansion of Lafarge was halted by the difficult prewar economic and political situation. Nevertheless, because of its technological superiority (based on the creation, in 1887, of a large central laboratory managed by Henry Le Châtelier), the Lafarge House survived the 1930s economic crisis better than most of its French (Poliet et Chausson, Ciments Français, Vicat) or foreign (Associated Portland Cement Manufacturers, Holderbank) competitors, but, like them, chose cartelization. Lafarge supported the Belgian initiative to found Intercement, an international cartel established in 1937 at Malmo, Sweden. Still strongly rooted in North Africa, the Lafarge House surmounted the difficulties of the Occupation period, the risks of nationalization and, above all, the sudden death of its emblematic chairman, Jean de Waubert, who was a son-in-law in the founding Pavin de Lafarge family. Because there was no other family member to chair the board of directors (Lafarge had become a private company in 1919), in 1947 two managers were chosen to run the firm: Alfred François (1883-1953), chair of the board of directors, and Marcel Demonque (1900-1974), chief executive officer. With Demonque's urging, the firm dramatically reoriented from colonial to North American markets. At the same time, the old French family firm was rapidly changing to a managerial and multi-divisional public company heavily invested in research and development.

### **Two Aspects of the Americanization of a French Company**

The two main aspects of the ambitious move to Americanize the firm were a successful strategy of redeployment away from French North Africa to English-speaking Canada, and a thorough transformation of organizational structures, achieved without altering corporate culture.

#### *Moving to Canadian leadership*

Under the leadership of Marcel Demonque, the Lafarge Group began a Canadian operation. From the early 1950s, François and Demonque had considered setting up business on the other side of the Atlantic. Lafarge had been exporting cement to the United States for over sixty years, but,

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<sup>4</sup> Dubois, *Lafarge Coppée*, 39.

<sup>5</sup> Ibid.

because of Lafarge's earlier failure to establish a subsidiary in that market (in 1925), Canadian prospects looked more favorable. During the 1950s, Canada was experiencing high prosperity. Indeed, a number of Lafarge's competitors were tapping into the local economy: Associated Portland Cement Manufacturers, Ltd., or APCM (United Kingdom), Holderbank (Swiss), and Cimenteries et Briquetteries Réunies, or CBR (Belgium). Moreover, Lafarge was already on the ground in Montreal beginning in 1948, through its British subsidiary LAC. Finding LAC's local representatives unequal to the task, however, the Lafarge management opted instead to buy out an important cement works in Vancouver. Such was the origin of Lafarge Cement of North America (LCNA), formed in April 1956, placed under the guidance of Jean-Charles Lofficier, and floated on the Toronto Stock Exchange.

Under Lofficier's leadership, the new firm was able to hold its own in a sluggish market and against the fierce competition put in its way by APCM. Aided by chair Frank Ross, then governor of British Columbia, LCNA soon availed itself of American management techniques (including the concept of the "break-even point"). LCNA then took over two major ready-mix operations. This decision to integrate downstream was the source of the firm's early profits (from 1961 on), and of its first dividend payout in 1964. The approaching Montreal World's Fair in 1967 provided the incentive to set up a second subsidiary in June 1965: Ciments Lafarge Québec, also chaired by a former Liberal minister. To counter the downturn in local markets, by 1968 Lafarge Québec was looking for export outlets: to Ontario, the Maritime Provinces, and most important, the United States. In April 1969, LCNA had acquired all Lafarge Québec shares. The merger of the two companies gave birth to Lafarge Canada, Ltd., the third-largest Canadian cement-making operation.

Ontario, however, remained to be entered. Three options were available: building a major cement plant in the province (but, given overproduction, the market was already nearing capacity); buying out an independent firm; or merging with a major local producer.

The second option was deemed too costly, so Lafarge's management decided to try for a merger with Canada Cement, the country's leading cement producer, which was also seeking a foothold in British Columbia. Completed in 1970, the merger soon proved highly worthwhile. The new company, Canada Cement Lafarge (CCL), generated enough profit to allow construction in Ontario of a new ultra-modern cement plant, thus securing 40 percent of the home market. This success was further enhanced by the marriage of the vice-chairman's daughter to the newly elected prime minister, Pierre Elliot Trudeau. Most crucially, as early as 1971, Lafarge was able to secure an overall majority holding of the new firm's capital.

#### *Going to a multidivisional and managerial public company*

Internationalization of the group went hand in hand with other transformations: technological diversification, changeover from an entrepren-

erial to a managerial model, and adoption of ever more sophisticated and effective organizational structures. Actively engaged in a strategy of external growth, Lafarge greatly diversified its activities, though diversification was initially oriented toward closely allied fields such as plaster production. A majority shareholder of Gypses et Plâtres de France since 1931, with the buyout of three more plaster plants in southwestern France in 1960 the Group propelled the firm to third place among French producers. In like manner, in 1964 the Group allied with National Gypsum, the second-largest U.S. plaster producer, to set up Prégypan. As a counterpart to an equity share in National Gypsum (which was then seeking a European alliance), Lafarge now found itself able to compete with Placoplâtre, the French subsidiary of the British Plaster Board (BPB) Group, European leader in the field of plasterboard manufacturers. The two Lafarge subsidiaries grew rapidly, by absorbing Plâtrières du Vaucluse and receiving technology transfers from National Gypsum, respectively. Pursuing diversification, Lafarge rose to a leading position in the manufacture of refractory brick, sanitary ceramics, and large-capacity bags (setting up Lafarge Emballage), and entered into an alliance with Union Camp, the sixth largest U.S. paper manufacturer.

The Group's internationalization, like its diversification, coincided with a changeover from an entrepreneurial to a managerial firm. In 1951, a capital share issue was floated to the public at large; Ciments Lafarge was no longer a firm under the founding family's control. The transition was effected smoothly, however; holding only 12 percent of equity stock, the family remained in a majority on the board until 1961. Also in 1951, François and Demonque recast the parent company along the lines of a fivefold functional directorate: plants and facilities, finance, commercial, research and operations, and personnel.

The Group's expansion, most notably in Canada, but also through the increasing diversification of its operations, led to a flurry of subsidiaries. The existing organizational structure proved increasingly inadequate, and in December 1965 Demonque called in management consultants McKinsey and Company, entrusting them with a corporate audit. That audit called into question the concept of a highly centralized organization designed around people rather than around the firm's primary goal: "producing and selling cements and other products with maximum long-term profitability." The outcome was the embracing, in 1968, of the "staff and line" principle. Under a general directorate, consisting of the chair and the chief executive officer, as well as the vice-chair and the vice-chief executive officer, were four main operational directorates: Ciments Lafarge Operational section (controlling the parent company's operations), the French cement subsidiaries, foreign subsidiaries, and "not cement" operations. These directorates had the power to make decisions, and had

the support of five functional directorates: Finance, Research and Technology, Planning, Management, and General Studies and Research.<sup>6</sup>

From 1969 to 1973, the Group expanded at an exceptionally rapid pace: indeed, the work force grew from 12,000 to 27,000. Such growth led directly to the creation of consolidated accounts, presented to shareholders for the first time in June 1972. Most important, the unexpected death of Demonque in June 1974 precipitated the implementation of new structures, better adapted to the Group's size. The parent company transformed itself into a holding company, under the name Lafarge, with nine operational groups: Cements France, an overseas and territories department, Europe, North America, refractories and kilns, sanitary, aluminous, plaster and trading, and packaging. They could call on the services of four functional directorates: Finance, Planning and Budget, Manpower Management and Development, and Science and Technology.

Technological innovation remained a major asset for Lafarge. Benefiting from almost forty years of Henry Le Châtelier's presence, the Lafarge central laboratory proved highly productive. In 1948, the firm recruited François Le Bel, who was entrusted with research and operations. However, the firm's corporate leaders long remained ambivalent concerning their R&D policy: should research be a dependent or an autonomous activity? Should it give priority to pure research, or should it defer to operational requirements? In 1953, research lost its status as a separate directorate and was joined with operations, under the guidance of A. Le Cour Grandmaison. The laboratory did not regain its status as a separate directorate until 1960, when Le Bel again headed it.

Le Bel was the prime mover in the rapid adoption of the "dry process," in which the dry raw material powder is not moistened into a paste or slurry before entering the kiln, but heated and stirred by homogenizing the cement, which reduces energy requirements for the burning phase. A great admirer of American methods, Le Bel, together with Jean Rives, civil engineer of mines, director of the central laboratory (1960), then director of production (1962), director of research and development (1979), and finally chief executive officer (1984), urged a search for productivity gains, and the introduction of the provisional management method, as did Demonque, Lofficier, and Olivier Lecerf (chairman, 1974-1989). Le Bel also contributed by moving the company toward ready-mix concrete production, which facilitated the group's successful internationalization, particularly in the United States.

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<sup>6</sup> Martine Müller (general ed., Félix Torres), *Lafarge-Coppée: de mémoire d'hommes: de 1946 à demain, un demi-siècle de croissance industrielle* (Paris, 1989), 27-36.

### **From Americanization to the American Conquest**

Lafarge's history provides a good picture of the succession of the "three globalizations." The first stage, between 1864 and 1945, was the period of internationalization, begun before World War I and strengthened during the interwar years, notably as a result of cartels. The second stage, from 1947 to 1974, was the period of multinationalization, characterized by strong growth, the transition to the managerial firm, and the rise of Canadian activities. The third stage was globalization, which included three aspects: the progressive conquest of the European market, ascent to leadership in North America, and entrance into Far Eastern countries. These goals were accomplished through the successive takeover of General Portland, Coppée, Redland, and Blue Circle. The first step in this third stage was access to leading American companies.

#### *Agreement with Lone Star*

In 1968, Lafarge Québec made use of pulsed-air railcars, a North American first, enabling it to offload bulk cement directly into trucks or silos. Lafarge also set up a retailing subsidiary, North East Cement, incorporated in Syracuse, New York. Breaking into the U.S. market was facilitated by Lafarge's agreement with Lone Star, the leading U.S. maker, entered into in 1967. Six years earlier, LCNA had bought a large Washington state quarry from Bob Hutton. At the helm of a large ready-mix business, Hutton had maintained a cordial relationship with LCNA, which continued when he joined the Lone Star Group. Having risen to vice-president there, he concluded a major deal with LCNA for the supply of clinker (the sintered raw material used in cement making) over a five-year period. Renewed in 1974, the contract marked the beginning of a succession of joint ventures in Brazil and the United States, enabling the Lafarge Group to build a second cement plant in British Columbia.

In 1970, the alliance with Lone Star strengthened with the founding of the Lone Star Lafarge Company to market the aluminous cement produced by the Lafarge Group. The agreement marked the accession of Lafarge to world leader in aluminous binding agents. In 1973, the two partners formed Citadel, a joint subsidiary for sales operations in the United States, with each company owning 50 percent of the stock. Though Lafarge had to agree to buy up unsold stock (the flotation occurred at the height of the Yom Kippur War), the agreement heralded a true strategic alliance, with an annual conference that brought together the two firms' managers to compare policies and look for new collaborative ventures.

The Spanish experience provides another example of collaboration. In 1965, Lafarge made an unsuccessful attempt to build a cement plant in Andalusia, first in association with Ideal Cement, the second U.S. cement maker, and then with Lone Star,. Three years later, Lafarge resurrected its endeavor to secure a foothold in the Spanish market. This time, the French Group's managers proposed a joint venture with the Tudela Virgin Group, based in the Asturias, to build a large cement plant in Gijon and to enter

into production of white cement, lime, and aggregates near Oviedo. However, faced with limited results, Lafarge withdrew from the operation in 1975.

As this time, the alliance with Lone Star was becoming even closer. In 1975, they proposed that Lafarge Fondu International, a subsidiary created in 1973, consolidate the Group's aluminous activities in Norfolk, Virginia. In a 1979 joint venture, Lafarge and Lone Star built the Cantagalo cement plant north of Rio de Janeiro, which produced 750,000 tons per year. At the same time, Lafarge merged all its Brazilian interests into the Companhia Nacional de Cimentos Portland, fourth in national production, of which Lafarge possessed 52 percent of the capital and Lone Star owned 48 percent.

Nevertheless, the closeness between the two groups was not static. In 1976, fearing the antitrust laws, Lone Star and Lafarge were separated from Citadel, with Lafarge receiving 100 percent of the capital. This destroyed the partnership between Lone Star and Canada Cement Lafarge (CCL), following the 1970 merger between Canada Cement and Lafarge. Thereafter, CCL was able to make massive investments. From 1971 to 1978, Canada Cement Lafarge made more investments than any other North American cement maker: 70 percent of its production utilized the "dry process." Moreover, CCL production doubled from 1974 to 1978, as a result of a reorientation toward downstream investments. Because of its presence in the engineering sector, with Lafarge Conseils et Etudes, in 1972 the Lafarge Group created a specialized subsidiary at Montreal.

### *Buying out General Portland*

Chaired by Olivier Lecerf since 1974, the Lafarge Group chose to create a permanent, significant presence in the United States.<sup>7</sup> They needed to buy an important American firm. Lafarge approached three California companies without success: California Portland Cement (Los Angeles), South Western Portland Cement (Los Angeles), and Kaiser Portland Cement (Oakland). In August 1980, John Redfern, chair of CCL, met with Jim Lendrum, chair of General Portland, Inc. (GPI). They considered three possible ways of forming an alliance: purchasing 100 percent of General Portland's registered capital; taking control of 51 percent of this registered capital; or merging General Portland and Citadel. The Portland board of directors preferred the third option.

In 1980, GPI was a major American cement company. The product of several firms founded by William Foster Cowham (1844-1913) beginning in 1899, GPI was the result of a 1959 merger between General Portland Cement and Consolidated Cement. Under Lendrum's leadership, begin-

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<sup>7</sup> Olivier Lecerf, *Au risque de gagner: Le métier de dirigeant: Entretiens avec Philippe de Woot et Jacques Barraux* (Paris, 1991), 137.

ning in 1975, GPI became the third American producer (with 5.2 million tons per year), behind Lone Star (8.1 million) and Ideal Cement (5.4 million), and comparable to Canada Cement Lafarge (5.5 million). GPI was established primarily in the South (Texas, Florida, Tennessee), but also had a presence in California, Kansas, and Ohio.

GPI constituted a dynamic, but financially fragile, group, susceptible to a hostile takeover bid (TOB). Without another strategic option, CCL launched a TOB on GPI's capital stock in May 1981. After difficult bargaining, an agreement was concluded for about 47 dollars per GPI share, and in November 1981, the stock takeover was realized to 96 percent. Because GPI controlled 7 percent of the U.S. market, the CCL-GPI alliance became the top North American producer (with a 14 percent market share). It was the reason for creating the Lafarge Corporation as a subsidiary of the Lafarge Group and registering it on the New York Stock Exchange. It was Lafarge's most important financial operation since its foundation (\$349 million, plus \$18 million to bankers and lawyers). The Group confirmed its bipolar character, with a Paris-Dallas axis, and took a decisive advantage over the other major world producers.

#### *Reinforcement of the American positions*

The American experience with the Lafarge Group was not limited to cement. With a view to reinforcing its European position, Lafarge worked closely with the Belgian Coppée Group. In 1979, three major goals dominated the Lafarge strategy: to reinforce its always fragile position in the refractory materials sector; to enlarge the Group's position in the U.S. cement market; and to enter into biotechnology.

The second aim was achieved by buying out GPI, but the first and the third presumed an alliance. This was the case with the Coppée Group, which brought its subsidiary Orsan, a leader in biotechnology with important engineering skills. However, Lafarge in North America's financial difficulties forced the Group to desert the engineering sector. In 1983, Lafarge Coppée sold its Coppée Courtoy and Coppée Engineering subsidiaries to Lavalin, a Canadian engineering leader.

At the same time, the economic situation worsened. First, the GPI purchase proved disappointing, because Lafarge had underestimated the management problems, financing needs, and changes in demand. During the 1980s, GPI was stronger in the South (Sunbelt) than in the North (Snowbelt), contrary to Lafarge's expectations; from 1980 to 1984, the Canadian construction sector slumped. The Lafarge Group resolved difficulties by four means: generalization of participative management by objectives; a strong reduction of the gap between provisional and executed budgets; the adoption, in 1983, of a new system of corporate taxation, based on world consolidated profit; and, in 1987, introduction of stock options for wage earners. In 1979, immediately after the success of the introduction of Lafarge Corporation on the NYSE, the Lafarge Group had

created an executive committee, which in 1981 began coordinating the actions and functions of the operational groups.

From 1984 to 1986, the Lafarge Group reduced its financial debt and gross cash flow and reorganized its industrial strategy around cement, other construction raw materials, and bio-industries. In the biotechnology sector, Orsan became a bisectoral group, linking chemistry and plant biology. It launched important investments, including a joint venture with the Japanese group Ajinomoto, the Heartland lysine plant in Iowa. The plant biology sector was developed through acquisitions, particularly in California and Arizona. With respect to construction raw materials, Lafarge Fondu International (LFI) made its contribution to the Group as a world leader. For example, in 1985, LFI repurchased from Lone Star its share in the common subsidiary, becoming Lafarge Calcium Aluminates.

The cement sector realized a spectacular recovery. CCL developed related activities: aggregates, ready-mix concrete, and concrete prefabricated products. At the same time, GPI established itself in Texas and California, increased its productivity, and reinforced its concrete and aggregates activities. GPI purchased Systech, an engineering firm specializing in the use of industrial scraps. This was a necessity, because of the strengthening of Lafarge's European competition: the purchase of Louisville Cement by Ciments Français, of Genstar's cement assets by CBR, of Universal Atlas by Heidelberg Cement and, above all, of Ideal Cement by Holderbank (which became Holcim).<sup>8</sup> From 1987, the European groups had controlled more than 50 percent of American production. Under the Lafarge Corporation's supervision, CCL and GPI developed important synergies, reinforced by the 1986 acquisition of the Huron Cement Company, purchased from National Gypsum.

Now established in the Great Lakes area, Lafarge Corporation completely reorganized into four regions: the Northeast (from Québec to Pennsylvania), the Great Lakes (from Ontario to Indiana), the Pacific Coast, and the southern United States. A fifth branch brought together all the company's concrete, aggregate, and prefabrication activities in the United States. Consequently, Lafarge Corporation moved its headquarters from Dallas to the Washington, D.C., area, where it consolidated its Finance, Human Resources, Planning, and Technical functions.

The case of the plaster industry is particularly interesting.<sup>9</sup> In 1981, Lafarge chose to develop an alliance with National Gypsum. The 1972 merger between Plâtrières de France and Prégypan had created Plâtres Lafarge; at the same time, a financial holding company, *Companie du*

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<sup>8</sup> Bruce T. Allen, "Vertical Integration and Market Foreclosure: The Case of Cement and Concrete," *Journal of Law and Economics* 14 (April 1971): 251-74.

<sup>9</sup> Félix Torres and Frédéric Emeric, *Lafarge Plâtres, Histoires pour l'avenir* (Paris, 2000).

Plâtre, was constituted. National Gypsum, founded in 1925 and established in Dallas in 1974, was a diversified group, present in the plaster sector, but also in fiberglass, metals, paper, house painting, and carpentry. In 1985, National Gypsum started a leveraged management buy-out (LMBO), initiated by eleven top managers of the company. A year later, the California raider Wilkes Co. launched a TOB for National Gypsum shareholders' equity. Lafarge Coppée played the role of "white knight." The French first repurchased 10 percent, and then around 32 percent, of the LMBO stock capital. A counter-TOB was possible, which would benefit the eleven managers, but would require extensive debt (\$1.5 billion). This was the reason for the Lafarge Corporation's purchase of Huron, and also for the increase in the French group's share of the shareholders' equity to 50.1 percent by 1990.

The alliance with National Gypsum was a financial failure. In 1990, National Gypsum came under Chapter Eleven bankruptcy, and a new company was created in 1993. Lafarge agreed to take 10 percent of the new shares, but refused to go to 20 percent. In 1995, a group of private investors repurchased National Gypsum, and Lafarge Coppée sold all its shares. That was a strategic error, because National Gypsum quickly returned to prosperity. But Lafarge remained in the U.S. market, with two plants purchased in 1996 in New York and Delaware.

Lafarge was taking another path, choosing to become a world leader in cement, concrete and aggregates, and, temporarily, in roofing.

### **From American Leadership to a World Firm**

In 1989, Lafarge's growth began losing steam. Certainly its positions remained strong: second in the world in cement, behind Holderbank; third in the world in concrete and aggregates, behind Holderbank and Cemex; well placed in the bioactivities sector (first in lysine, thanks to Orsan), but weaker in plaster (third in Europe behind British Plaster Board and the German group Knauf), and the ready-mix concrete sectors. The trend began reversing in 1993, with two successive accelerations in 1997 (taking control of Redland) and 2001 (the purchase of Blue Circle). North America was, to a large extent, the source of the recovery.

#### *Since 1997 a sustained recovery in North America*

In 1993, the French share of the Lafarge Group began to decrease. Although Western Europe remained the most important market, by 1998 it had lost its absolute hold, as the advantage went to emerging countries and North America. By 2004, North America represented 27 percent of Lafarge's net sales and 20 percent of its employees. The North American share of the percentage of employees remained stable, because Lafarge made productivity gains in the face of fierce competition. Globalization was coming with the internationalization of shareholders' equity. As early as 2003, North Americans held 15.4 percent of Lafarge shares and the British held 17.7 percent. Thus, English-speaking shareholders became

increasingly important, accounting for a third of the shareholders' equity. This phenomenon correlated with the introduction of Lafarge, concurrently with the Lafarge Corporation, on the New York Stock Exchange in July 2001. In contrast, the Lafarge Group declined on the London, Frankfurt, and Düsseldorf exchanges.

Lafarge faced the challenge of preserving its North American leadership without running afoul of antitrust provisions. It needed to provide the Lafarge Corporation with the necessary financial support without losing control of operations. In 1993, the Lafarge Group maintained a majority share of 53.1 percent. In 2001, the Lafarge Corporation became Lafarge North America, because Lafarge (the Group) was also listed on the NYSE. The Group's strategy favored the cement branch. Lafarge alternated acquisitions (1993, 1998), divestments (1994), capital-widening investments and rationalization investments (1995, 1997), and market-sharing agreements, for instance with Cemex (1994).

Lafarge made a considerable effort to become the leader of the important American wallboard market, which accounted for 50 percent of world demand. After the failure of its alliance with National Gypsum, Lafarge attacked the market alone under the Lafarge Corporation trade name. In 2002, Lafarge Corporation purchased Continental Gypsum, a Newark, New Jersey, firm. In other Lafarge branches success was uneven. In 1998, Lafarge took a part in Carmeuse, a world leader in the lime sector, and then sold its 40 percent share. The Group had better results with Lafarge Applications Routières (Lafarge Road Products): in 1998, this subsidiary controlled 30 percent of its market. More spectacular was the acquisition of Warren, the Canadian leader in road aggregates, in 2000. As a consequence, the Lafarge Group obtained eighty worksites and an annual capacity of 18 million tons of aggregate. The acquisition put Lafarge in direct competition with Colas, a Bouygues subsidiary and first in the road construction industry in North America.<sup>10</sup>

Lafarge had long been superior in its efforts in technological innovation to those of its competitors. Every year, the Group created many new products—thirty, for example, in 1995. In order to “create today the materials for tomorrow,” the Group cooperated not only with industries, but also with big research institutions, notably Berkeley, Princeton, and the Massachusetts Institute of Technology (MIT) in the United States, and Laval and Sherbrooke universities in Canada.<sup>11</sup> In 2004, for instance, MIT considered Lafarge “the sole actor dominating the nanometric approach to

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<sup>10</sup> Dominique Barjot, “Un leadership fondé sur l’innovation, Colas: 1929-1997,” in *Trajectoires technologiques, Marchés, Institutions: Les pays industrialisés, 19<sup>e</sup>-20<sup>e</sup> siècles*, ed. Laurent Tissot and Béatrice Veyrassat (Bern, 2001), 273-96.

<sup>11</sup> Annual Report of Lafarge Coppée, 1995.

the construction raw materials.”<sup>12</sup> The Group also saw itself as an exemplar in sustainable development; since 1994, it had cooperated with the World Business Council for Sustainable Development. In 2005, by its sustainable development policy, the Group became first in the world in construction materials, ahead of Saint Gobain, Holcim, Cemex, Heidelberg Cement, and the others. This constituted an excellent argument for its positive image in North America, but the primary reason was its succession of external growth operations.

*The decisive factor: an active strategy of external growth*

From 1993 to 2005, the Lafarge Group alternated strategic divestment and investment. Two divestments dominated the period. In May 1994, the Group freed itself from Orsan, the leader in the biotechnology sector. The acquisition had been an important contribution of the Lafarge-Coppée merger in 1997, completed with the aid of French Crédit Agricole. The result, however, was disappointing: in 1994, Orsan represented only 3 percent of the Group’s net sales. The second divestment occurred in 2000, with Lafarge’s sale of its special raw materials sector to three investment funds: CVC Capital Partners, Advent International, and the Carlyle Group. Exceptions included road construction road products, sold to the Burelle Group, and lime production, which was already part of a joint venture with the Carmeuse Group. Without these two last sectors, it was possible to constitute an independent firm, Materis, of which Lafarge held 34.6 percent of the shareholders’ equity. The real reason for this divestment was the need to reduce the Group’s corporate debt after the acquisition of Redland and Blue Circle.

Redland was one of the big British groups in the construction raw materials sector. Founded in 1919, it later acquired a stake in the shareholders’ equity of the German firm Braas, which specialized in roofing works. In 1959, Redland took control of Braas, began its diversification into aggregates, and in 1960 took an interest in ready-mix concrete. Redland created Redland Braas Building (RBB) in 1996 to develop its roofing activities in Europe. In 1997, Redland employed 18,000 workers and realized about 3 billion Euros in net sales. The company worked in aggregates and concrete (33 percent of net sales), lime (4 percent), and above all, roofing (53 percent), principally in Europe, but also in Asia and Africa. In the roofing sector, Redland was first in the world, but also benefited from strong positions in aggregates and concrete (first in France, third in the United States, and fourth in the United Kingdom).

The Redland acquisition was rapidly executed. In October 1997, Lafarge started a TOB on 100 percent of the shareholding equity of

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<sup>12</sup> Annual Report of Lafarge, 2004, p. 27.

Redland Plc, quoted on the London Stock Exchange at a purchase price of £3.26 per share, for a total of £1.66 billion. In November, Lafarge raised the bid to £3.45 per share, for a total of £1.8 billion. The board of directors agreed, as did the shareholders. Consequently, Lafarge reinforced its leadership in construction raw materials, became first in the roofing sector, increased its competitiveness, and improved its profitability. Redlands' integration into the Group was completed in only six months. In 1998, net sales grew 5.3 percent (of which 50.9 percent was by structural effects). However, corporate debt increased: €3.3 billion after the takeover bid, compared with €2.3 billion before. The Lafarge Group adopted a divestment policy. It started with the December 1998 sale of Redland Stone Products, which was first in aggregates and asphalt production in Texas.

The acquisition of Blue Circle Industries was more difficult. It was a prestigious firm, and for a long time the leading European producer of cement, under the trade name of Associated Portland Cement Manufacturers, Ltd. After World War II, APCM lost its leadership in the face of competition from Holderbank (then Holcim), Lafarge, Cemex, Heidelberg Cement, and Italcementi. In 1999, with Blue Circle sixth in the world in cement making, Lafarge and Blue Circle bought a majority of the shareholding equity of Hims Cement, the most important producer in Uganda, in a joint venture.

During the first quarter of 2000, Lafarge started a hostile TOB of its competitor. It failed. Lafarge had acquired only 19.9 percent of Blue Circle's shareholding equity when the board of directors rejected the bid. After a reduction in registered capital, Lafarge's share grew to 22.6 percent. At the end of the year, there were new negotiations, and Lafarge put in a friendly TOB in January 2001. Thereafter, the integration of Blue Circle was rapidly completed. As a consequence, Lafarge became first in world cement production, before Holcim, as a result of a 35 percent increase in capacity. The global growth of the Group sped up over the next three years with net sales increases of more than 16 percent in 2000, 12 percent in 2001, and 7 percent in 2002.

The Blue Circle acquisition brought in 17,000 additional employees, most of whom were successfully integrated; 90 percent of the operational managers remained in place in 2002. The synergies appeared stronger than planned. Above all, Lafarge obtained leadership in many countries with a strong development potential, including the United Kingdom, Greece, Chile, and Malaya. The situation was more difficult in Nigeria and the United States, because of a temporarily less favorable economic situation, and in the Philippines, because of a price war among producers. Because financial charges greatly increased the group debt, Lafarge accelerated its divestment policy. In October 2001, for example, Lafarge sold two Ontario subsidiaries of Blue Circle to Holcim. This was a consequence of antitrust injunctions by the Canadian and U.S. authorities.

The acquisition of Redlands and Blue Circle, controlled by Warren, consolidated Lafarge's North American leadership.

### Conclusion

From the present study, it is possible to draw two conclusions. The first is that North America served as a major axis of the Lafarge Group's strategy. In 2005-2007, Lafarge realized more than a quarter of its total net sales in North America, which employed only a few more than a fifth of the total wage earners. The branches were unequally represented in North America (see Table 5).

TABLE 5

North American Share of Net Sales and Operating EBITDA in 2005, by  
Lafarge Group Branches  
(% of total)

	<u>Net Sales</u>	<u>Operating EBITDA</u>
Cement	21.1	18.2
Concrete and Aggregates	39.5	40.7
Roofing	0	0
Plaster	22.4	29.8

*Source:* Lafarge Group Archives, Paris, France.

*Note:* EBITDA=Earnings before Interest, Taxes, Depreciation, and Amortization

The Group was better positioned in concrete and aggregates, where profitability appears higher than average. It was the branch where the Lafarge Group experienced the fastest growth, especially because of the strong demand for asphalt, road surface, and ready-mix concrete. Cement was more difficult, because prices were low. In autumn 2008, amid an international crisis, plaster offered more favorable perspectives. Indeed, Lafarge's North American plants seemed highly competitive with BPB (Saint Gobain), U.S. Gypsum, and National Gypsum. It is clear that Lafarge remains in place to respond to competition from Saint Gobain in Europe through its strong development in the United States, the most important world market. In contrast, roofing was absent in the U.S. holdings.

Second, Lafarge has become a global actor, searching for balanced development among emerging countries. However, North America retains a privileged place; before the conquest of Europe, Lafarge sought to assert itself in Canada and the United States. This was the case in cement, aggregates, and, to a lesser degree, ready-mix concrete. This is a necessity, because North America remains the more competitive market, accounting for the greatest productivity gains.

This was the reason for the repurchase, in 2005 and 2006, of a 46 percent minority interest in Lafarge North America. At the same time, Lafarge divested the roofing sector in 2007, maintaining only a 35 percent share. Facing an offensive by its main competitors, in the early twenty-first century, the Group is concentrating on its major strengths to protect its North American sanctuary, which has become more important than France. In 2008, the need to reinforce shareholding and development activities in emerging countries led Lafarge to conclude an alliance with the Egyptian group Orascom. Consequently, the Lafarge Group preserved its world leadership (see Table 6).

TABLE 6  
The Five Major Cement Industry Companies, December 31, 2008  
(in billions of euros)

	<b>Net Sales</b>	<b>Cash Flow from Operating Activities</b>
1. Lafarge	19.0	3.5
2. Holcim	15.8	2.3
3. Cemex	14.5	1.7
4. Heidelberg Cement	14.2	2.4
5. Italcementi	5.8	1.1

*Source:* Annual reports of the concerned groups.