«Smooth, hard, clean, perfect»
Terranova, history of a modern plaster

Emilia Garda

**TERRANOVA: PLASTER AND PEOETICS**

Developed in Freihung, Bavaria by Kapferer in 1893, «Terranova» — a ready-mix, factory tinted plaster for exterior facade use — came into widespread use in Italy starting in 1932, thanks to the efforts of Aristide Sironi and his plant in Via Stephenson, Milano.¹

It was in this period that Terranova plaster first begins to receive extensive attention in technical journals, manuals, handbooks and advertising brochures; it figures in the statements and theoretical writings of the Rationalist architects; above all, it emerges as the finish material of choice — virtually to the exclusion of all others — for the facades of civil and industrial buildings, where it is applied in broad areas or more limited bands, used for contrast in loggias and arcades, with its myriad colors, now luminous and bright, now somber, lusterless and restrained, setting off other facade materials such as marble, natural or artificial stone, high-fired tile or glass brick.

For this material, created in reality over forty years earlier in Germany, Aristide Sironi shrewdly retained the original name (which was also maintained after the manufacturer’s recent acquisition by Weber & Broutin, though in this case the motives were entirely different: to underscore — by using the same name as well as by other means — a sense of a continuing tradition). For Sironi, the intention was to promote the product as a new, innovative, modern and — why not? rational and economical (the two terms were almost synonymous in those years) material, well able, precisely because of its touted modernity, to redeem architecture from its backward-looking immobility.

In a climate such as this which extolled all that was new, technical and economic motivations are inextricably mixed with ideological ones, an unswerving faith in progress with allusions to the artificial imagery of the Futurists and their ilk — not just as regards the use of Terranova, but also for all materials employed in architecture and interior decoration. So pervasive was this ethos that, frequently, synthetic materials — developed as substitutes for other, more costly products — ended by being more highly prized than the originals themselves. Such, indeed, was the case of the Bakelite used in place of amber or tortoiseshell, the Linoleum used to imitate briar or Persian carpets, and the plasters that were carefully contrived and treated to imitate stone.

The various defenders of the faith lost no time in pumping up the myth of the new materials, and the improbable virtues often attributed to them, so much so that a number of designers, including Figini and Pollini, felt the need to defend themselves from what they called «Another rhetoric, the most recent, the rhetoric of new materials» (Figini, Pollini 1932, 2–3).

Alongside the modernistic ideology, another theme that was widely viewed as essential in those years, deeply felt and vigorously promulgated, and which is closely linked to the use of new materials and the Rationalists’ categorizing efforts, is the theme of
ambient hygiene. At the typological level, the desire for hygiene — seen as the road to healthfulness — was responsible for sweeping renovations: horizontal windows, flat roofs that could be used as gymnasiums or gardens, etc. When selecting materials, it led to a preference for those that were smooth and washable, would not harbor bacteria, and were free from cracks and joints. While the favored materials for exteriors were marble, granite or their more economical relatives, the «smooth, hard, strong, clean, perfect» plasters, as Gaetano Minnucci defined the various types of Terranova (Minnucci 1930), preferences for interior finishes ran to washable materials such as Lincruster; above all, however, it was glass (in ever-
more sophisticated forms such as Saint Gobain glass bricks, Opaline glass, Desagnat flexible glass, Civer tiles) which was preferred for its characteristic transparency and ability to reflect light.2

For building exteriors in particular, hygiene changed from being a functional requirement to an aesthetic concern, a guarantee of the smooth, perfect and incorruptible surfaces that were necessary to an architecture that relied heavily on simple geometrical elements. Particularly interesting in this connection are the opinions of two protagonists of the architectural experimentation of those years: Alberto Sartoris and Domenico Morelli.

Alberto Sartoris goes so far as to say that the simplification of architectural form is not a compositional issue but is rigorously functional in nature, as self-cleaning forms are an answer to the problem of materials that rapidly become obsolete:

We have arrived at this type of simplification after a close scrutiny of public monuments. Observing the nudes found in all of Italy’s squares, they will be seen to be blackened under the arms, between the legs, anywhere, in short, where rainwater does not pass. Under the nose, for instance, even if the personage represented is not moustached, the statue will have a pair of black whiskers, because dust builds up under the projections and the surface will look clean only where water flows over it. Trivial as they may seem, such considerations are extremely important in architecture. (Sartoris 1989).

Domenico Morelli, on the other hand, sees the use of new materials whose value has not yet been proved by experience (he is speaking specifically of the «new plasters» Pietranova, Terranova, Silexore, etc.), together with the extreme simplification of forms and volumes, as perhaps the most critical aspect of Rationalist experimentation:

I believe that one of the causes of the decay of Rationalist architecture lies precisely in the fact that the materials have not held up to the architects’ intentions. The architecture that preceded this period (the Twenties

Figure 4
and Thirties) was based on decorations such as carved foliage and moldings, and was enriched with statues, frescoes and so forth. As the years go by, these decorations become dirty, obsolete, but they nevertheless retain a character of their own, something that time cannot take away . . . By contrast, modern architecture is based on clean, precise surfaces whose only ornamentation is the rhythm established by the window openings . . . Sadly, this type of architecture, even if finished with special plasters, plasters that are a bit out of the ordinary, solider than before, has not stood the test of time and has betrayed the expectations of its designers (Morelli 1989).

As Gaetano Minnucci wrote in _Architettura ed arti decorative_ in 1930:

Trends in plasters have taken two directions, one concentrating on the plaster's surface form: while in past years especially, we have seen a true flowering of textures, with surfaces streaked, scraped, hammered, combed, and in short, roughened in every imaginable way, today's preference is for the smooth, hard surface. The other trend, which is some senses closely connected to the first, regards the plaster's composition, and how to color it in various long-lasting shades. The introduction of cement, the use of lively colors for exterior as well as interior plasters, the modern spirit to which anything that could be called architectural decoration is increasingly foreign, have all contributed to relegating the plasterer's work in moldings, cornices and modeling of all kinds to the background, favoring large-scale use of broad, smooth surfaces, where any projections have elementary shapes and contours. We have thus passed to productions that are more industrial in nature, where the economic factor predominates . . . (Minnucci 1930).

Reading between the lines, this ostensibly technical note expresses both of the contradictory principles that, paradoxically, are present even in the «eminently rational pursuits of the Rationalists».

The first contradictory element regards the abolition of decoration in favor of pure functionalism. If we look carefully at the sketches, design proposals and buildings of those years, we see that, however energetically designers may have striven for an architecture based on functional requirements, decoration was never entirely abandoned. On the contrary, it crops up again and again: no longer as a mere adjunct or overlay, but as a synchronic and consubstantial part of design. In other words, it was the material itself that was called upon to perform decorative functions, almost as an attempt to counterbalance formal simplification.

It is chiefly in finish materials, whether they be noble marbles and mirror-bright crystal, or humbler materials such as Terranova plasters, Buxus, Linacreter or Linoleum that we can descry, often under the banner of hygiene, a decorative intent. Frequently, this intent is pursued through a reliance on the chromatic qualities of natural materials and the intense, pure colors of artificial materials.³

The Rationalist architects, in fact, made extensive use of color. We must not be deceived by the black and white photographs we find in the magazines and journals of the time, and the washed-out, anemic image they give us: «the Rationalist house is cheerful, luminous, colorful» (De Guttry, Maino 1988). These colors are generally pure tones combined in graded or contrasting shades, as masterfully described by Giacomo Polin:

. . . at the beginning, colors have the names of things: yellow is lemon, red is coral, white is ice or ivory. Later, these colors, lively because natural, rational as are lemons or coral, shade away into the infinity of the chromatic spectrum, like the malachite green that the numberless veins of the stone prevent us ever from reaching . . . (Polin, Selvafolta 1982).

The second contradictory element emerges from the concluding words of Gaetano Minnucci, when he speaks of « . . . more industrial in nature, where the economic factor predominates . . . » (Minnucci 1930). If, on the one hand, the Rationalist period favored the humbler materials in deference to an ideological and social outlook that hoped to provide low-cost, affordable housing through the use of industrial processes and mass production, the buildings and rooms that were actually created were commissioned by the highly educated and progressive moneyed classes. Thus, the materials that were born humble as part of a social program often ended up, despite everything, as luxury materials.

**TERRANOVA PLASTER AND THE TECHNICAL LITERATURE**

As we have seen, Terranova plaster was not a new material, though this is how it was presented. Even in the technical publications that were designed to provide
information about the product, the accent is on its innovative character. Terranova, in fact, is numbered among the «new lightweight plasters» or —adding its presumed exceptionality to its modernity—among the «special plasters».

The properties that were required for these products, in fact, were light weight (indispensable for plasters that were applied thickly or were used to cover thin, light cladding materials), together with high mechanical strength (due to the product’s high cohesion), good thermal and acoustic insulation (guaranteed by its cellular structure and comparatively low density), impermeability, resistance to freezing and weathering (high cohesion increases compactness, thus improving impermeability, while the presence of mineral fibers which «reinforce» the plaster eliminates crumbling and makes it less prone to ice damage), and, finally, good pigment absorption (unlike ordinary plasters, in fact, the new products are impregnated with color down to a certain depth).

Frequently, claims are also made regarding the product’s «petrifying power» (or in other words, its ability to become rock-hard after a certain period, making it able to withstand extreme temperatures, impact and mechanical damage), which allegedly guarantees the smooth, perfectly incorruptible surfaces necessary to an architecture that achieved its effects through the use of simple geometrical elements. Very often, in fact, the new plasters, «... smooth, hard, clean, perfect», are used as «substitute» materials on facades, «in place of» the less modern and economical marbles and granites (Minnuci 1930).

In addition to Terranova, mention should also be made of other types of special plaster, named according to the factories that produced them: Jurasit, Pietranova, Silitinto, Stalfit, Terrasit, etc... The cements used for this type of plaster included
Duralbo cement (an extremely white, fast curing high-strength artificial portland cement produced in rotary kilns by Società Istriana dei Cementi at the latter’s Pola plant), and Cromocemento (a tinted high-strength Portland cement produced by Soc. An. Cromocementi of Milano).

The technical literature also devotes considerable space to how the new plasters are applied to the lightweight drywall and fiberboard materials that began to make their appearance in those years. The literature makes a distinction between Eraclit drywall panels, and in general all types consisting of wood chips or magnesium cement, where thin coats of mortar are sufficient because of the high adhesion between the cellulose fibers and the plaster (and on which gypsum plasters show excellent performance), and those based on compressed fibers such as Insulite, Masonite, Celotex, and so forth, where it is advisable to use galvanized wire lath, and where the plaster reaches a thickness of around one centimeter. It was also recommended to cover panel joints with strips of hemp tacked at the intersections (a method of bridging gaps frequently referred to as «a cavalletto» in the handbooks of the period) and then plastered over.

To complete this brief survey of applying the new plasters to new materials, mention should also be made of the metal corner beads placed on outside corners of adjoining walls at the time they are plastered. One of the most widely used of these products was the «Titano» corner bead patented and marketed by the producer of Terranova plaster.

While the foregoing remarks apply in general to all of the «new plasters», it is perhaps worthwhile to dwell for a moment on the distinctive characteristics of Terranova, which, though not the most commonly used, was without doubt the most widely publicized. In the technical handbooks of the period, Terranova is described as a «factory tinted plaster based on rock-hardenable silicates and natural colorants produced in a wide range of different colors and shades, supplied in ready-to-use bags in three grain sizes: fine, medium and coarse». It is also classified by method of application, three common categories being «Scraped Terranova», «Sprayed Terranova» and «Troweled Terranova».

A case apart is that of «Hard-grain Terranova» which, unlike the other types which feature uniformly sized, compact grains — though grain sized differed according to type — is made up of silica compounds in graded grain sizes and is thus particularly luminous.

«Scraped Terranova» is applied to a base coat of lime, sand and portland cement in four separate operations: Application - Floating - Scraping - Brushing.

— Application is carried out using an ordinary plasterer’s trowel, achieving a thickness of 5 to 7 mm.
— Floating is performed using an ordinary wooden float. As soon as the plaster begins to set, it is scraped down to a thickness to 5 mm.
— Scraping is performed using an ordinary chamfer-edged steel scraper.
— Finally, brushing is performed using an ordinary bristle brush.

The most delicate operation is scraping, as the success of the work depends chiefly on it.

Figure 6
Examples of hard-grain Terranova in actual service,
Marescotti, Felice. 1937. «L'intonaco Terranova a grana dura», Casabella, 110: 41
«Sprayed Terranova» is applied to a thickness of 3 mm using special machinery supplied by the plaster manufacturer, and requires that the underlying base coat be applied with greater care to avoid unevenness. «Troweled Terranova» is simply troweled on without further operations.

Finally, «Hard-grain Terranova» is applied using normal plastering tools.

As regards areas of application, a distinction should be made between the types featuring constant grain size («Scraped Terranova», «Sprayed Terranova» and «Troweled Terranova»), which are used both on exterior and interior walls, and those with variable grain sizes (hard-grain Terranova), whose strength and resistance — being much higher than that of the other grades of Terranova — makes it advisable for walls or portions thereof that are subject to continual wear, and in particular for wall bases, stairwells, entryways, heavily trafficked areas, work areas and so forth.

**TERRANOVA AND THE TEST OF TIME**

After discussing the cultural climate that prevailed in the early years of Terranova plaster’s life, it can be of interest to consider its relationship with time in the light of what Domenico Morelli saw as the «betrayal» on the part of materials.

Nor is Morelli alone in his sense of betrayal: the dramatic fragility of modern architecture has also been perceived by Marco Dezzi Bardeschi.

The architecture of the Modern Movement is by its very nature ecstatic, rarefied, almost dematerialized; it relies on pristine surfaces, so clean as to be peremptory . . . it manifests, proclaims an absolute idea that will dominate through its sheer, imperious force. But once translated into concrete shape, alas, it can do naught but follow the biological laws that govern its components (Dezzi Bardeschi 1986).

For a variety of reasons, in fact, be they formal (as in the case of certain design solutions such as flat roofs, walled balconies and facades shorn of projections), technological (as where materials were selected because they were «modern, domestically produced, experimental» even though nothing was known of their performance in service or over time) or ideological, such as the decisions stemming from a
machine-oriented aesthetics, we must admit that, however bitter such a realization may be, modern architecture is constitutionally and irremediable fragile: it deteriorates more quickly than its advocates and proponents had foreseen, and thus requires greater care and attention than the architecture that preceded it. For modern architecture more than for any other kind, it is thus fundamental to employ a cognitive approach pursued through a fuller analysis of case-histories. This type of approach, however, is often neglected even for buildings that are part of our everyday knowledge, and about which we ought, in fact, to be able to find out much more» (Bardelli, Rome, 1992).

If these considerations apply in general to all of the materials associated with the poetics of Rationalism, it is essential to understand the inherent characteristics of Terranova plaster, the most extensively advertised of its day, if not the most widely used. If the success and survival of a material (Terranova, as we shall see, continues to be produced and used today) spring from its initial popularity, its technical and appearance-related characteristics, and, intimately connected to these characteristics, its performance in service and over time, then we can say that the features that did most to differentiate Terranova from other earlier or coeval plasters were the fact that it is factory tinted, applied in relatively thick coats, and reinforced with mineral fibers.

The latter features in particular have ensured outstanding technical performance, despite certain application problems. With spray processes, for instance, thickness is hard to gauge, particularly at joints.

In addition, the fact of being a thick, high-build product helps mask imperfections and makes it possible to use one rather than two final scraping and decorating stages.

As for how Terranova has stood the test of time, we can say that it has done very well on the whole. Throughout Italy, in fact, we find individual buildings or whole districts which still retain their Terranova plaster after sixty years and more, its colors, though dulled and at times even gloomy, as evocative as ever.

Terranova shows good adhesion to the underlying masonry (sagging, delamination and the like are usually due to water in the wall as a result of local infiltration and leaky pipes), and deterioration is most likely to be caused by soil buildup in cracks and gaps.

For these reasons, totally removing damaged Terranova plaster does not appear to be advisable. In most cases, it is better to take localized action, cleaning the plaster, eliminating structural problems and patching where necessary.

As for the measures that have been introduced to bring the system up to date (an inevitable process in view of the new potential offered by manufacturing equipment), the asbestos fibers - now regarded as hazardous and thus no longer usable - added to the mixture in order to reinforce the plaster and prevent cracking have been replaced with other compatible, long-lasting fibers.
TERRANOVA AND ITS MANUFACTURER

As indicated earlier, Terranova plaster is still being produced today, though it has been variously adapted to meet changing needs and new regulatory requirements. Thus, the history of this «new material» has, in reality, lasted over a hundred years. Consequently, a review of some of the most important moments of this history is perhaps not without interest.7

In 1893, Terranova - INDUSTRIE C.A. KAPFERER & Co. began manufacturing prepackaged tinted plaster in Germany, and specifically in Freihung, Bavaria. Soon afterwards, the company’s success enabled it to set up production units throughout Europe. Around 1920, Terranova products began to be marketed in Italy, imported from by Germany by AGENZIA SIRONI of Milano.

In 1932, the German parent company TERRANOVA and the Milano agency headed by Aristide SIRONI set up an Italian joint-stock company, S.A. INTONACI TERRANOVA, headquartered in Via Benaco, Milano. Sprayed Terronova was employed for the first time in this period for the buildings housing the Milano Triennial (1940–1942).

In 1936, the plant in Via Stephenson 70, Milano, was inaugurated. This plant is still active today.

In 1939, the Civitavecchia plant was inaugurated, producing Terranova plaster for southern Italy and the colonies. The plant was shut down in 1956.

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Figure 11
Advertisement
L'architettura Italiana, October 1936

Figure 12
Advertisement
Rassegna di Architettura, June 1937
In 1945, the Sironi family bought out the German-held shares to set up a new, all-Italian company, Società Italiana Intonaci Terranova. In the early 50s, the company's production included scraped Terranova, troweled Terranova, sprayed Terranova and hard-grain Terranova. In 1956, production of plastic-based products (the Ferdian Plast line) got under way, and these products were gradually introduced alongside mineral plasters.

Between 1980 and 1985, silicate plasters were developed under the tradename Terrasil. In 1987, the Austrian Terranova unit bought 100% of the shares of Societa Italiana Intonaci Terranova, at the same acquiring full ownership of Societa Terranova throughout Europe. This was the same year that saw the introduction of Terrasan repair plasters and Terratherm insulating plasters.

In 1993, on its hundredth anniversary, Terranova Italy sponsored the restoration of Casa Malaparte in Capri.

In July 1993, the Austrian Terranova Group and all Terranova companies controlled by it (in Italy, Germany, Hungary, the Czech Republic and Slovakia) were acquired by Weber & Broutin of Paris, the leading European producer of ready mix tinted plasters for construction application. Under the new ownership, Terranova continues to develop the plasters that made it famous. Once the name of the company, Terranova becomes the name of the product.

Several of the products featured in the current catalog, including marbled Terranova, sprayed Terranova, and troweled Terranova, can be compared to the historical Terranova plasters, though they have been adapted to reflect more recent technical needs and market demand (Weber & Broutin 1997).
NOTES

1. «Factory tinted» means that pigments were mixed into the product during production.

2. Lin cruiser: An interior trim material based on boiled linseed oil, normally spread on paperboard and in some cases on canvas. It was produced in three different types: smooth, imitation silk, and relief, with a wide range of patterns and shimmering iridescent colors of great decorative impact.

3. Opaline glass: A type of glass tinted by mixing coloring oxides into the batch, so that the color is uniform throughout the thickness of the product. Sheets or tiles of Opaline glass were produced in three types: polished on one face, polished on both faces, and unpolished. At the beginning, only two colors—milk white and black—were available, as they were the only ones in high demand, given the striking decorative effects obtained by using them in combination.

4. The further development of this concept, i.e., that of reducing the number of coats and thus cutting labor costs, led to the introduction of single-coat ready mix factory tinted products such as the «Monocappa» plaster which became particularly popular in France from the 80s onwards.

5. As regards weather resistance, it has been found that Terranova plaster holds up well under heavy rains, though frequent acid rain can interact with certain pigments and cause them to fade.

6. The following account of the company’s history and its products was compiled with the help of Manfredo Barberis (Product Marketing—Manager, Technical Mortars and Repair Products Division—Weber & Broutin, Italy).

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