

Women Pioneers in Civil Engineering and Architecture in Italy: Emma Strada and Ada Bursi

It is well known that Italian culture has discriminated against women in the fields of education and profession. Why is this? Before and immediately after the Second World War, women civil engineers and architects used strategies to overcome their gender marginality. Did these strategies influence their experiences within the profession and the recognition they received? What were the factors that enabled women to enter the patriarchal spheres of the professions? What were the roles of the first female civil engineers and architects in Italy and especially in Turin which was the capital of industry? What motivated their choice of profession and how were these women received in the male-dominated professional world? The history of two almost unknown female pioneers, Emma Strada and Ada Bursi, helps answer these questions and it gives rise to new ones.

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Italian law never explicitly denied women access to university, but in the nineteenth century the presence of women at university was low. From 1867 to 1900 there were 224 women graduates in Italy. In the same period 49.8% of female degrees were taken in northern Italy and 26.9% of this number were from Turin.¹

In the first decades of the twentieth century the number of women graduates did not increase much. This is also related to the fact that in 1910–11 there were 791 girls in all high schools of the Kingdom of Italy, while the number of boys was 13,551.²

In Italy, university was free and open to anyone who qualified, until 1923 when Education Minister Giovanni Gentile passed a law limiting access to university to those who had attended the following high schools: *liceo classico* (classical lyceum), *scientifico* (scientific lyceum) or *artistico* (artistic lyceum). In the same year, secondary schools began to segregate boys and girls.³ Girls' secondary schools were created and soon became the only choice for women to study, preventing them from entering university which was now reserved for students coming from the above mentioned *licei*.

Since the two major Italian engineering schools, the Politecnico di Torino (Polytechnic of Turin)⁴ and Politecnico di Milano (Polytechnic of Milan, 1863),⁵ were founded in the northern industrial area, the first civil engineers came from Turin and Milan. It is known that these cities were not just the most

1 Cf. Michela De Giorgio, "Donne e professioni," in Anna Maria Malatesta (ed.), *I professionisti* (Torino: Einaudi, 1996), 455–456, vol. 10 of the collection *Storia d'Italia: Annali*.

2 Cf. Marino Raicich, "Liceo, università, professione: un percorso difficile," in Simonetta Soldani (ed.), *L'educazione delle donne: Scuole e modelli di vita nell'Italia dell'Ottocento* (Milano: Franco-Angeli, 1989), 168.

3 About fascist school policy in Italy see Jürgen Charnitzky, *Facismo e scuola: La politica scolastica del regime (1922–1943)*, (Firenze: La Nuova Italia, 1996).

4 The *Regio Politecnico di Torino* was founded in 1906 following the merger between the former military school *Regia Scuola di Applicazione per ingegneri* (established in 1859) and *Regio Museo Industriale* (established in 1863). Before starting the three years of the *Scuola di Applicazione*, students in engineering had to attend two preparatory years at the *Università di Scienze*. See: Giovanni Maria Pugno, *Storia del Politecnico di Torino* (Torino: Stamperia Artistica Nazionale, 1959), 32–149.

5 On the history of the *Politecnico di Milano* see: Ferdinando Lori, *Storia del R. Politecnico di Milano* (Milano: Tip. A. Cordani, 1941).

modernised in Italy, but they would soon become the centres of the post-war economic boom and the forefront of Italy's women's movement. Women would become a significant minority, active in the vicissitudes of post-war Italian civil engineering, architecture and design, rarely working alone since they were usually collaborating with male professionals.

The region of Piedmont was among the first to welcome women into universities which could give them access to professional orders.

Piedmont's standards of excellence were also helped by the presence of religious minorities, such as Jews and Waldensians, and were characterised by a level of education that gave girls access to higher education.⁶ Although the presence of women was accepted in universities, it was not the same at the Regio Politecnico di Torino (Royal Polytechnic of Turin) which taught practical, applied sciences.

Reflecting the mentality of the time, technical studies were not at all considered feminine and, because of social pressure, women simply did not apply for them. Furthermore, the Politecnico was conditioned by its military school roots, thus by tradition it was more difficult for women to enter.

For a woman in Italy in the twenties, civil engineering or architecture were still an unusual choice of profession and in most cases women benefitted from family tradition. However, from the early thirties, girls' enrolment in courses of civil engineering and architecture was no longer seen as an exception. Indeed, from 1944 to 1947 the enrolment of women at the Faculty of Architecture in Turin (established at the Politecnico since 1929) increased at a rate faster than that of men.

In 1945–46, 25% of the school population was female and in the fifties and sixties the number of female graduates continued to grow, while the number of male graduates was static.⁷ As in other European countries, the war was one of the factors that may explain this phenomenon.

At the Politecnico di Milano, the increase in female students enrolled was disproportionately higher than the general growth of the faculty. The numbers of women graduating was, however, lower and less consistent – in 1944 women made up 33% of graduates, but in 1962 they were just 24%.⁸

In 1951 just 17 female architecture students were enrolled at the Politecnico di Milano, a number that rose to 223 in 1969, anticipating women's professional emergence in the Italy of the 1960s.⁹

Very few women undertook an academic career. Among the first professors at the Politecnico di

⁶ In 1881, at the University of Turin, Lidia Poët was the first woman in Italy to graduate in law. She was a Waldesian.

⁷ These data are deduced by the author from: Associazione Ingegneri e Architetti, *Annuario ex Allievi Politecnico di Torino 1961* (Torino: Stamperia Artistica Nazionale, 1961), 31–35.

⁸ The disparity is larger than would be expected, despite a greater trend in Italy than elsewhere in Europe for abandoning one's studies. In the 1960s, women entered higher education in ever greater numbers and by 1962 made up nearly half the student body. Cf. Politecnico di Milano, *Annuario* (Milano: Politecnico di Milano, 1970), 466.

⁹ Cf. Raffaella Crespi, "Donna e Architetto," in Barbara Mapelli (ed.), *Donna e Istruzione Politecnica: Atti del convegno, Milano 1987* (Milano: Franco Angeli, 1987), 87.

Milano were the architects: Cini Boeri (1924, graduated in 1951), Raffaella Crespi (1929, graduated in 1955) and Franca Helg (1920–1989, graduated in 1945)¹⁰. Working at the Politecnico di Torino: Mariella de Cristoforo Rovera (1931–2001, graduated in 1955), Vera Comoli (1935–2006, graduated in 1961), Giovanna Maria Zuccotti (1926–2004, graduated in 1950).¹¹ Most of them became assistant professors or full professors in the eighties.

Access to the Civil Engineering and Architecture Professions

Immediately before and after the Second World War, a significant number of women architects and engineers were born into an open-minded elite, less bound by gender roles. The issue of class and consequently the educational advantage, was also relevant for women's access to the professions.¹²

Women usually began their professional career working with their fathers, brothers or husbands, most of the time without signing their projects or receiving credit for their work. There were women who chose to remain anonymous, working alongside their husbands or for their mentors and studio owners, or sometime in teams.¹³ This is one of the reasons there are just a few publications covering Italy, which focus on this specific subject.¹⁴ One other reason is that for a long time it was

¹⁰ Among the first generation of women architects and designers who emerged in the post-war period were: Gae Aulenti, Cini (Maria Cristina) Boeri, Anna Castelli Ferrieri and Franca Helg, who all born between 1920 and 1927. All graduated from the Politecnico di Milano between 1945 and 1953. Cf. Simona Grasselli and Mirella Valota, "Nel segno di Estia: Istruzione Politecnico e Professione in Architettura delle Donne a Milano" (diss. Politecnico di Milano, 1994–1995), 54.

¹¹ For the Politecnico di Torino see: Vittorio Marchis (ed.), *Progetto cultura società: La scuola politecnica torinese e i suoi allievi* (Torino: Associazione Ingegneri e Architetti ex Allievi del Politecnico di Torino, 2010), 202–203, 216–217, 220–221.

¹² As noticed by Catherine Rossi: Antonia Astori, Emma Gismonde Schweinberger and Cini Boeri all had brothers who had studied in the field of architecture. Giogina Castiglioni and Maria Luisa Belgiojoso were both daughters of celebrated architects Piergiacomo Castiglioni and Ludovico Barbiano di Belgiojoso of the rationalist group BBPR. Cf. Catherine Rossi, "Furniture, Feminism and the Feminine: Women Designers in Post-war Italy, 1945 to 1970," *Journal of Design History* 3 (2009), 248.

¹³ In the post-war Italian context, while architects-designers such as Franco Albini, Tobia Scarpa and Ico Parisi achieved a considerable degree of recognition, their partners, Franca Helg, Afra Scarpa and Luisa Parisi, have been marginalised. Outside Italy, the extensively documented partnership of Charlotte Perriand and le Corbusier; Charles and Ray Eames and Sadie Speight and Leslie Martin illustrate the problems the female partners had during collaboration. To explore the dynamics of creative partnerships, see: Whitney Chadwick and Isabelle De Courtivon (eds.), *Significant others: Creativity and intimate partnerships* (London: Thames & Hudson, 1993).

¹⁴ On women architects see: Gisella Bassanini, "Le 'madri dell'architettura moderna': Alcuni ritratti nel panorama italiano e straniero," *Parametro* 257 (2005), 20–23; Claudia Mattogno, "Muse, committenti, progettiste: Il lungo percorso delle donne in architettura," *Tria* 10 (2013), 71–84; Maria Grazia Eccheli and Mina Tamborrino, *donna Architettura: Pensieri idee e forme al femminile* (Milano: Franco-Angeli, 2014). On women designers/architects see: Nicoletta Livi Bacci, Anna Luppi and Milly Mazzei (eds.), *Design delle Donne* (Milano: Arnoldo Mondadori arte, 1991); Tiziana Occleppo and Anty Pansera (eds.), *Dal Merletto alla Motocicletta: Artigiane/Artiste e Designers nell'Italia del Novecento* (Milano: Silvana Editoriale, 2002), Exhibition catalogue; Anty Pansera and Maria Teresa Chirico De Biasi, *Nientedimeno: Nothing Less: The strength of female design* (Torino: Allemandi & C., 2011).

customary not to write the designer's full name, therefore scholars could not tell if there was a woman or man behind the title of civil engineer or architect.

On 3 August 1919, a law abolished marital approval –the requirement that a wife needed her husband's approval to work– and allowed the admission of women to exercise any work or profession and hold public positions with just a few exceptions.¹⁵ At that time, there were more female graduates from the University of Turin than any other university in Italy.

Between 1920 and 1930, both in Europe and in Italy, female architects became more numerous, even though public opinion perceived architecture as a 'profession for men'. The minority status of women in architecture and the civil engineering professions has a direct relationship to the fascist regime and the continuing dominance of conservative Catholicism. Indeed, in fascist Italy, women never exceeded 10% of the 108,000 professionals. Among the total number, 16 women were architects, 60 were lawyers, 30 were dentists, 297 were doctors and 500 were writers and journalists.¹⁶

Despite Benito Mussolini's disapproval, a small group of women architects, designers and urban planners began to grow in Italy. Some of these professionals could even design and carry out their own works. It was a silent revolution. These women showed extraordinary drive in obtaining cultural and professional emancipation which could be achieved only by acquiring a solid technical education.

To our knowledge, the first woman civil engineer in Italy was Emma Strada (1884–1970). She graduated from the Politecnico di Torino in 1908, but after that year the presence of women at the Politecnico remained sporadic and almost random.¹⁷ This was probably because social pressure was still strong.

After Emma Strada, Gaetanina Calvi (1887–1964) graduated in 1913 from the Politecnico di Milano (the first woman to do so). Maria Bortolotti Casoni (1880–1971) –who graduated in engineering in 1918– was the first Italian woman to be licensed as civil engineer on 18 July 1919 thanks to the decree that opened all professions to women.

Only in the twenties did a few women graduate in architecture.¹⁸ In 1925 Alexandra Biriukova (Vladivostok, 1895 – Toronto, 1967) and Elena Valentini Luzzatto (1900–1983) completed their

studies at the Regia Scuola di Architettura di Roma (Royal School of Architecture of Rome, founded in 1919). Valentini was probably the first qualified female architect in Italy. Two years later, Annarella Luzzatto Gabrielli (1873–unknown) also graduated in architecture in Rome.¹⁹

In 1922 Elvira Luigia Morassi (1903–2002) became the first woman to follow architectural courses at the Politecnico di Milano, graduating in 1928 with fellow student Carla Maria Bassi (1906–1971), who had enrolled in 1923.²⁰ Stefania Filo Speziale (1905–1988) graduated from Naples in 1931 and in 1939 Ada Bursi (1906–1996) graduated from the Politecnico di Torino.

In 1933 a Faculty of Architecture opened at the Politecnico di Milano, although it would take some years for women to become a visible presence. Just nine women enrolled in this faculty that year, 6% of the total.²¹

Luisa Lovarini (1900–unknown) (Fig. 1), Attilia Vaglieri Travaglio (1891–1969) (Fig. 2), Maria Bortolotti Casoni (1880–1971) (Fig. 3) were women who worked in the thirties signing their names on architectural and urban projects. These women rejected Mussolini's claim of that women do not build.

In the thirties, the lack of women in Italian architecture and civil engineering fields is largely explained by fascist rules that sought to confine women to their maternal role and exclude them from highly skilled professions.²²

Between the wars in Italy, women were hostages in their own home. They were under patriarchal authority and deprived of civil rights. They could not inherit assets and were excluded *de facto* from practising in many professions.²³

In a widely-read interview, Mussolini offered his own opinion on the absence of women architects at this time. He asserted:

The woman must obey [...]. She is analytic and not synthetic. Has she ever done architecture in all these centuries? Ask her to build you a mere hut, not even a temple! She cannot do that. She

19 Cf. Anna Maria Speckel, "Architettura moderna e donne architetture," *Almanacco della donna italiana* 13 (1935), 120–134.

20 Cf. Annamaria Galbani, "Donne al Politecnico di Milano: Studenti e docenti dalle origini al 1950," in Annamaria Galbani (ed.), *Donne politecniche: Atti del Convegno e Catalogo della Mostra - Milano, 22 maggio 2000* (Milano: Libri Scheiwiller, 2001), 57, 62.

21 If we compare this data to Germany, we find that, between 1920 and 1930, in the various Technische Hochschulen (Technical College) the percentage of women students in architecture varied between 1,5% and 5%.

22 On Fascism's position on women see: Victoria De Grazia, *How Fascism Ruled Women: Italy, 1922–1945* (Berkeley: California University Press, 1991), 1st Italian ed. *Le donne nel regime fascista* (Venezia: Marsilio, 1993); Francesca Delle Vedove, *La Donna nel Fascismo tra segregazione e mobilitazione* (diss. Venezia: Università ca' Foscari, Facoltà di Lettere e Filosofia, 2000–2001). On women architects in Italy under the Fascism see: Luisa Maria Caruso and Cristina Giannoccaro, "Architettrici. Le donne progettiste del ventennio fascista" (diss. Politecnico di Milano, 1998–1999).

23 Women voted for the first time in 1946 as full Italian citizens in the referendum on the Italian monarchy and election of the Constituent Assembly. By 1950 a bill on working mothers became law, thus provided paid leave before and after childbirth and prohibited the dismissal of mothers during pregnancy and for a year after the child's birth. This legislation did not, however, cover professional architects and engineers.



Fig. 1. Luisa Lovarini, Worker's house at the V Triennale di Milano, 1933. From: A.R. "La Casa del Dopolavorista," *Edilizia moderna* 10–11 (1933), 72–73 (Copyright free).

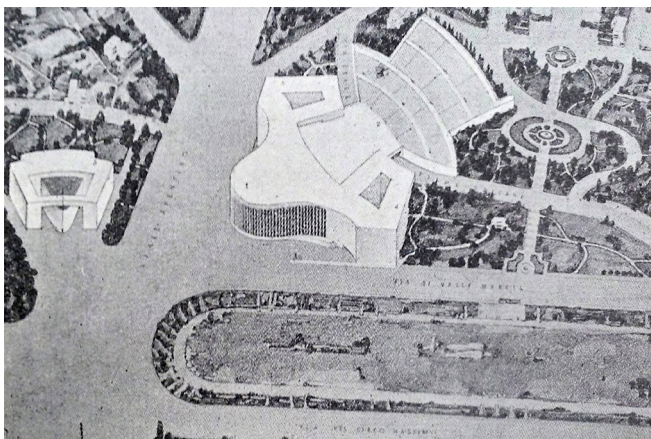


Fig. 2. Attilia Travaglio Vaglieri, Project for the Music district in Rome, ca.1935. From: Speckel, "Architettura moderna e donne architetture," 130 (Copyright free).

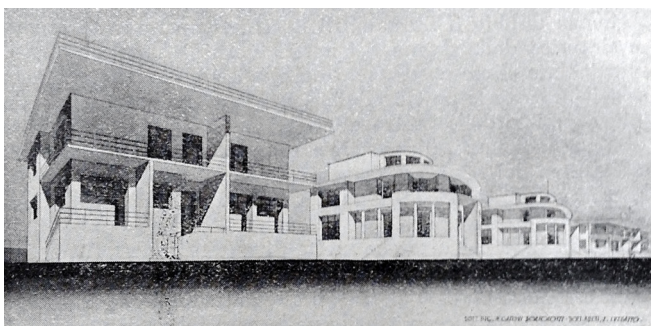


Fig. 3. Maria Bortolotti Casoni (civil engineer) and Elena Luzzatto (architect), Project for small modern houses at Ostia Mare, 1932. From: Speckel, "Architettura moderna e donne architetture," 133 (Copyright free).

is foreign to architecture, which is a synthesis of all arts, and this is a symbol of her destiny.²⁴

In 1932, Mussolini declared to the French journalist Hélène Gosset that the real task of women is: '[...] above all to be a wife and mother. The real place of woman in modern society, is now like before, in the house'.²⁵ On the pages of the number 14 of the magazine *Critica Fascista* (1933, 7), we read: '[...] the Fascist woman must be a mother, those who have children, a supporter and director of new lives [and it is necessary for her to undergo] an intense spiritual evolution towards sacrifice, self-forgetfulness, versus anti-individualistic hedonism'.²⁶

Ferdinando Loffredo reaffirmed male superiority:

female emancipation is as contrary to the interests of the family, as it is contrary to the interests of the race. The woman must return under the complete subjugation of man: the father's or husband's subjection; and therefore spiritual, cultural and economic subjugation.²⁷

There was a Fascist strategy against women's work outside home that began with educational programmes for girls. The *Decalogo della piccola italiana* (the Italian girl's handbook) stated: '[...] 3. You serve your country also by sweeping your house; 4. Civil discipline begins with the governance of the family; [...] 8. The woman is primarily responsible for the destiny of a people; [...]'.²⁸

Mussolini's statement of the tasks of the housewife, who was considered the generator of the race, so alienated women from working in architecture that only a few started working in that field.

As elsewhere in Europe, women architects worked mainly on private housing projects, interior design and decorative arts and, as a result of Fascism, it was nearly impossible for women to enter public contracts and competitions. However, in 1935 the *Almanacco della donna Italiana* (Almanac of Italian Woman) praises the achievements of some professional architects, whose cases remained exceptions.²⁹

24 From: Emil Ludwig, *Talks with Mussolini* (Boston: Little Brown, 1933), 168.

25 'Il loro vero compito è soprattutto quello di essere spose e madri. Il vero posto della donna nella società moderna, è attualmente come in passato, nella casa.' Translated by the author from: Piero Meldini, *Sposa e madre esemplare: Ideologia e politica della donna e della famiglia durante il fascismo* (Firenze: Guarnaldi, 1975), 77.

26 '[...] la donna fascista deve essere madre, fattrice di figli, reggitrice e direttrice di vite nuove [per essa occorre] una intensa evoluzione spirituale verso il sacrificio, l'oblio di sé, l'anti-edonismo individualistico'. Translated by the author from a quotation by Katrin Cosseta, *Ragione e sentimento dell'abitare: La casa e l'architettura nel pensiero femminile tra le due guerre* (Milano: Franco-Angeli, 2000), 28–29.

27 'L'emancipazione femminile, come è contraria agli interessi della famiglia è contraria agli interessi della razza. La donna deve tornare sotto la sudditanza assoluta dell'uomo: padre o marito; sudditanza e quindi inferiorità: spirituale, culturale ed economica'. Translated by the author from: Ferdinando Loffredo, *Politica della famiglia* (Milano: Bompiani, 1938), 369.

28 '[...] 3. La patria si serve anche spazzando la propria casa; 4. La disciplina civile comincia dalla disciplina famigliare; [...] 8. La donna è la prima responsabile del destino di un popolo; [...]'. Translated by the author from: Meldini, *Sposa e madre esemplare*, 48.

29 See: Speckel, "Architettura moderna e donne architetture," 121–134.

In Turin, the interior designer M. Besso won first prize for the furnishing of new shops on the main street of the city, via Roma.³⁰ The enlargement of this street was the largest urban renewal promoted in Italy during Fascism. Many architects were involved in architectural reconstruction, but there were no women among them. As the case of Besso testifies, women were confined to interior design tasks.

The example established by these female architects clearly demonstrates the level of excellence that women had to reach in order to fill traditionally male positions.

Italy's First Woman Civil Engineer: Emma Strada in Context

Emma Strada (Torino, 1884–1970) finished the Liceo Classico Massimo d'Azeglio high school in Turin in 1903 (Fig. 4). Her decision to attend this school showed her intention to go on to university. The same year she was enrolled in the preparatory course in Engineering Sciences at the University of Turin.³¹ This would later allow her to enroll in the Scuola di Applicazione per Ingegneri (Appliance School for Engineers). On 5 September 1908, she graduated with honours from the Regio Politecnico di Torino and finished third out of the 62 students enrolled in her course. Emma Strada was Italy's first woman graduate in Civil Engineering.³²

She became assistant to Luigi Pagliani, who was the director of the Gabinetto di Igiene Industriale (Cabinet of Industrial Hygiene) at the University of Turin and a lecturer at the Politecnico in the course of Hygiene. As a result of social constraints, there was no chance a woman could have an academic career and consequently she had to work for her father and brother, who were both engineers. Her father, Ernesto Strada, was a provincial councilor of Turin and directly involved in the city's building policies.

Turin has been a developed industrial city since the early twentieth century and has seen a complete transformation of its socio-cultural outlook. The city was revitalised and expanded and many civil engineers and architects were involved in the urban transformation process, although to our knowledge no women were involved.



Fot. cav. Lovazzano.
**La signorina Emma Strada di Torino,
prima laureata ingegnere in Italia.**
[Vedi il *Corriere*].

Fig. 4. Photographic portrait of Emma Strada, the first woman civil engineer in Italy, 1908. Propriety of the author (Copyright free).

In 1910, Emma's father closed his studio in Turin and the archival documents do not show that he opened a new studio in the city under his name, perhaps because he had already moved his professional activities to Calabria.³³ These were the years when professionals and workers from the North led the modernisation in southern Italy.

In Catanzaro, Emma probably helped her father on the construction of the auto-moto-funicular railway, junction Catanzaro-Sala (Fig. 5).

After Emma father's death in 1915, she worked with her brother Eugenio. In Liguria and in Piedmont she also designed some railway sections.³⁴ As a woman civil engineer she succeeded remarkably well in the railway sector which was traditionally male.

In Turin, she worked on a project for a children's nursery in the Crocetta district although the drawings preserved in the historical city archive do not bear her signature.³⁵ From the pages of the *Annuario in Almanacco della Donna Italiana* we know that in 1937 Emma had her professional studio in Turin (via Bove n. 2).³⁶

After the First World War, Piedmont was the most industrialised region of Italy. Because of the war, women took the place of men in factories, offices and public services, thus women demonstrated their working ability. This event contributed to the change of mentality and established a different conception of social relationships.³⁷

At the end of the Second World War, women had gained civil rights like those of men (law decree 2 February 1945) and gender equality (Italian Constitution 1948) nevertheless, equality at work would only be fully legally recognised in 1977 (law 9 December 1977 n. 903).

³⁰ Cf. Speckel, "Architettura moderna e donne architetture," 131.

³¹ Cf. "Registro di matricola relativo all'allieva Emma Strada," Archivio Storico Università di Torino (or ASUTo), *Registro immatricolazione studenti Facoltà di Scienze Fisico-matematiche*, 19.

³² On Emma Strada see: Margherita Bongiovanni, "Strada, Emma," in Béatrice Didier, Antoinette Fouque and Mireille Calle-Gruber (eds.), *Le dictionnaire universel des Créatrices* (Paris: Editions des Femmes, 2013), Vol. 3, 4127; Caterina Franchini, "Emma Strada and Ada Bursi: The First Female Civil Engineer and Architect in the Italian Capital of Industry, Turin," in Jorge Correia (ed.), *Ist International Meeting EAHN: European Architectural History Network, Book of Abstracts, CD of Papers* (Guimarães: EAHN, 2010), 216–225; Pina Novello and Elena Marchis, "Emma Strada: Temi, forme e maestri della formazione politecnica, progetti, disegni e opere della professione di progettista," in Associazione Italiana di Storia dell'Ingegneria, *Storia dell'Ingegneria: Atti del 3° Convegno Nazionale, Napoli 19–20–21 Aprile 2010* (Napoli: Cuzzolin, 2010), Vol. 2, 1047–1056.

³³ Cf. *Annali Paravia*, microfilm (1910), ASCTo.

³⁴ Emma Strada's projects and works are listed and partially described in: Bongiovanni, "Emma Strada," 94–95; Novello and Marchis, "Emma Strada," 1051.

³⁵ Scuola materna Crocetta, 1868–1980, ASCTo, Archivi Aggregati.

³⁶ Cf. Silvia Bemporad, "Annuario," *Almanacco Annuario della Donna Italiana* 15 (1937), 475.

³⁷ During the war, women belonging to the upper classes joined the Red Cross and enrolled in the *Consiglio Nazionale delle Donne Italiane* (National Council of Italian Women), that was inspired by patriotic and emancipationist values. Cf. Rosa Rosá, "Le donne cambiano finalmente," *L'Italia Futurista* 27 (1917), 2.



Fig. 5. Ernesto Strada and Daniele Mercegalia, with the collaboration of Emma Strada, "Auto-moto-funicular" railway junction Catanzaro-Sala, 1910. Ancient picture displayed on the site, piazza Roma Catanzaro (Copyright free)..

Since women's aspirations were more ambitious and they were conscious of their own value, the disappointment of being cut off *en masse* from the working world became a stark reality. Even though Turin could include many engineers in multiple industries, women trained in engineering did not find their future careers there. Only in the eighties would women engineers enter Turin industry and then only marginally.³⁸

In 1957, 148 professional female engineers and 147 architects were enrolled in the registers of professional orders, but it was very difficult for women to succeed because they were unable to get work.³⁹ The legacies of a misogynistic regime proved the main obstacle for the majority of women engineers and architects, preventing their entry into professional practice. This galvanised the women to form a professional association.

First Italian Association of Women Engineers and Architects

On 26 January 1957, women engineers and architects of Turin and Milan, who had gathered in 1955 at the Exhibition of Mechanics in Turin, legally founded the Associazione Italiana Donne Architetto e Ingegnere - AIDIA (Italian Women Engineer and Architect Association). Emma Strada was one

of the founders and the association's first national president. Among the founding members, the contribution of the electrical engineer from the Politecnico di Torino (graduated in 1933) Anna Enrichetta Amour (Milano, 1908 – Torino, 1990) was crucial.⁴⁰

In 1953, while studying for her master's degree in industrial engineering at Columbia University (New York), Enrichetta Amour was approached by the British-American organization Women's Engineering Society - WES and through this, upon her return to Italy, she became the initiator of the foundation of AIDIA, of which she was national secretary and editor of the association's newsletter (since 1956).⁴¹

Early issues of the AIDIA newsletter identified the professional advantage of family connections; male family members could introduce their female relatives into the profession.⁴² Since its first issues, the newsletters reveal that women faced real forms of discrimination in the profession: problems of less pay, hostility from male colleagues and cases of being fired rather than promoted.

The incompatibility of professional and family life was a key issue. In the January-February 1956 newsletter we read: 'the first duty of the young married graduate is towards her family' and recommended that 'remaining single was necessary in order to advance in her career'.⁴³

At AIDIA's second national conference in Turin, Emma Strada introduced the debate about professional claims and opportunities for women in the field of technology. In 1970 she agreed to organize the III International Conference of Women Engineers and Scientists in Turin supported by WES. The topics included: family duties and professional women. Unfortunately, Emma Strada passed away just a few months before the event.

The theme of incompatibility between professional and family life remained, but it was perceived in a reverse logic: the problem became the family. In 1972 one AIDIA member declared that the family was 'the biggest obstacle in women's liberation'.⁴⁴

The First Woman Professional Architect in Turin: Ada Bursi

The first woman to practise as a professional architect in Turin was Ada Bursi (Verona, 1906 –

38 Cf. Patrizia Audenino and Paola Corti, "Donne e professioni liberali: studio, carriera e famiglia (1918–2000)," in Patrizia Audenino and Paola Corti (eds.), *Donne e libere professioni: Il Piemonte nel Novecento* (Milano: Franco-Angeli, 2007), 30.

39 Cf. Margherita Bongiovanni and Nicoletta Fiorio Plà, "Emma Strada, ingegnere dal 1908: La vita della prima donna ingegnere attraverso le fonti archivistiche istituzionali e private," in Associazione Italiana di Storia dell'Ingegneria, *Storia dell'Ingegneria*, 1045.

40 The other founding members were: Vittoria Ilardi, Laura Lange, Ines del Tetto, Lidia Lanzi, Adelina Racheli Domenighetti.

41 Cf. Bongiovanni, "Le donne al Politecnico di Torino," 79.

42 Cf. Associazione Italiana Donne Ingegnere e Architetto, *Notizie dall'A.I.D.I.A.* 5 (1957), 3.

43 Cf. Associazione Italiana Donne Ingegnere e Architetto, *Notizie dall'A.I.D.I.A.* 1 (1956), 4.

44 Cf. Associazione Italiana Donne Ingegnere e Architetto, *Notizie dall'A.I.D.I.A.*, 20 (1972), 5. For AIDIA relationships with feminism see: Rossi, "Furniture, Feminism and the Feminine," 249–250.

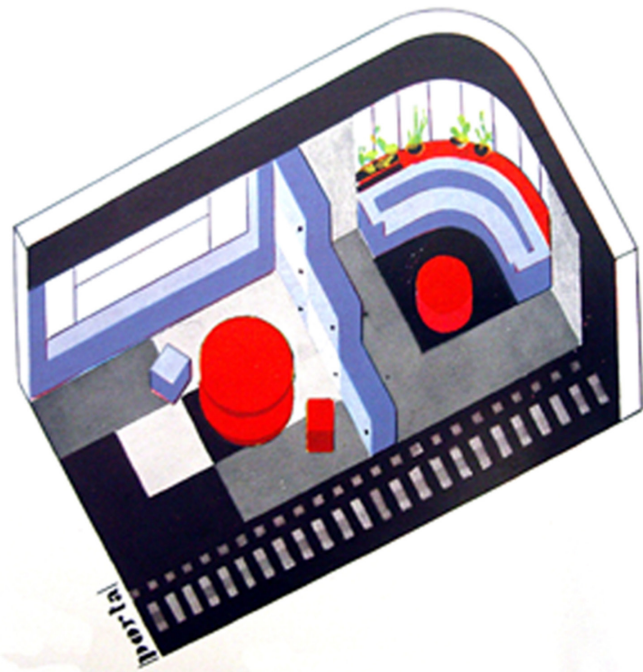
Castiglione Torinese, Torino, 1996).⁴⁵

When she was a girl, Ada Bursi moved from Verona to Turin with her family and attended the Regia Scuola femminile Margherita di Savoia (Royal Women School Margherita di Savoia).⁴⁶

In the second half of the 1920s, she attended the school of the painter Felice Casorati (1883–1963) and, influenced by the friendship of the painter Mino Rosso (1904–1963), she completed some graphic works in futuristic style.⁴⁷ In fact the Futurist avant-garde movement, especially in its initial period (until 1910), offered women new opportunities of expression in terms of originality, authenticity and self-confidence.⁴⁸

In the early 1920s, the many women who wrote, often in a provocative way, in the periodicals *L'Italia Futurista* or *Roma Futurista*, progressively changed their artistic activity to social interest. Soon, the role of woman varied between the reaffirmation of the strength and power gained in time of war and the return to their traditional boundaries.

In 1929, Ada Bursi published her tempera drawings, in the specialised magazine *La Casa bella*, of the linoleum flooring (Fig. 6) that she had designed for the architect Giuseppe Pagano Pogatschnig (1896–1945).⁴⁹



As Ada Bursi's drawings show, the interior materials of the Modern Movement were designed to be continuously renewed and replaced. The taste for colour re-enters the home by the use of inlays in *linoleum* that underline perfect geometries and smooth surfaces of modernity.

Since the twenties, the home had become the ground for applying the scientific theories on organization of domestic work. In the thirties the political, ethical, aesthetic and social canons were redrawn. The debate on the modern rational housing, already

Fig. 6. Ada Bursi's drawing for the linoleum flooring of a living room with veranda, 1929. From: Pagano Pogatschnig, "Pavimenti moderni," 44 (Copyright free).

45 Cf. Caterina Franchini, "Bursi, Ada," in Béatrice Didier, Antoinette Fouque and Mireille Calle-Gruber (eds.), *Le dictionnaire universel des Créatrices* (Paris: Editions des Femmes, 2013), Vol. 1, 698.

46 From the Historical Archive of the Ordine degli Architetti, pianificatori, paesaggisti e conservatori della provincia di Torino (or OAT), folder "Ada Bursi".

47 Cf. Luisa Perlo, "Bursi Ada," in Enzo Godoli, *Dizionario del Futurismo* (Firenze: Vallecchi, 2001), Vol. 1, 176.

48 Cf. Rosá, "Le donne cambiano finalmente," 2.

49 Cf. Giuseppe Pagano Pogatschnig, "Pavimenti moderni," *La Casa bella* 8 (1929), 44–46.

introduced in Germany in the late 1920s, come to the fore. At the same time, the status of the housewife was affirmed because the lady of the house could no longer depend on the help of servants. Large homes were replaced by smaller apartments to be rationally designed and needing flexible furniture which was easy to clean.⁵⁰

The first specialised magazines in architecture and interior design *Casabella*, *Domus*, *Quadrante*, *Stile* saw the "new woman" working in the field of architectural criticism as well as interior design. The art of decorating and beautifying the house was made popular by Lidia Morelli, Elisa Ricci, Vanna Piccini and Amina Polito Fantini. Articles in *Domus* naturalised woman's presence in traditionally female realms of creativity and allied their skills to domestic and reproductive duties.

In 1939, *Domus'* editor Gio Ponti put women back in their traditional place by describing needlework as: '[...] the natural work of women, it should be the only work for women, it is work that does not take her away from the home and does not distance her from the cradle and the hearth'.⁵¹

Bursi's artistic skills led her to find work in advertisement graphics. She worked for Avigdor's fabric in 1929, Gancia's spumante in 1930, and after the Second World War she designed the poster for the Exhibition in Mechanics (Turin, 1946). For the Municipality of Turin, she continued to work on graphic design for Via Roma up to 1954, as well as for those of Porta Nuova (the Central train station).

In 1933, Bursi became a member of the Partito Nazionale Fascista⁵² (National Fascist Party) and in the same year she exhibited her paintings with the group of Futurists at the 5a Mostra Regionale del Sindacato Fascista di Belle Arti (5th Regional Exhibition of the Fascist Syndicate of Fine Arts). Soon she was well integrated in the artistic milieu of the time, although it was still almost exclusively male.

In 1936, Bursi participated in the VI Triennale di Milano (6th Milano Triennial) exhibiting some carpets together with the architect Ettore Sottsass sr. (1892–1953) and earning awards for the design of a tapestry and a set of coffee cups.⁵³

50 To study the complex relationship women-home between the wars, see: Cosseta, *Ragione e sentimento dell'abitare*. Between 1915 and 1945 the house became the centre piece of a lively critique by women which emerged in novels, essays, manuals and specialist magazines. The analysis of these sources shows the unstable balance between reason, which requires a functional home, and feeling that refuses mechanistic and impersonal living. On the same subject see also: Stefania Berrino, "Casa di donna: Analisi dello spazio domestico tra le due guerre" (diss. Politecnico di Torino, 2006).

51 'Il lavoro di ricamo [...] è il lavoro naturale della donna, dovrebbe essere il solo lavoro della donna, è il lavoro che non la toglie dalla casa, che non la allontana dalla culla e dal focolare.' Translated by the author from: Gio Ponti, "Per l'affermazione delle industrie femminili italiane," *Domus* 139 (1939), 65–66. Women's "natural" domestic role was used to explain - and contain - the increasing number of women architects emerging in the late 1940s. It is interesting to notice that Enrichetta Ritter and Lisa Licitra Ponti were part of *Domus's* editorial team and Gae Aulenti worked with Ernesto Rogers at *Casabella-Continuità* on its relaunch in the 1950s.

52 Unione provinciale Fascista dei professionisti e degli Artisti Torino, Historical Archive OAT, folder "Ada Bursi".

53 Cf. Perlo, "Bursi Ada," 176.

Probably, after having attended Biennio speciale in Architettura (two years' courses in architecture) at the Accademia Albertina di Belle Arti (Fine Arts Academy) she could enrol at the Faculty of Architecture of the Politecnico di Torino.

It is interesting to note that research carried out at the Accademia Albertina archives revealed no evidence of Ada Bursi's presence. Nevertheless, recently discovered documentation concerning the Biennio speciale in Architettura shows that women's presence on architectural courses in the fine arts academy was not an exception.⁵⁴

In 1927, out of a total of 12 candidates to enter the biennium in architecture, four were women: Alidia Besso, Dellia De Benedetti, Severina Olivetti and Laura Tamagno.⁵⁵ When Giuseppina Agliodo took the exam the same year, she was the only woman among eight candidates to become a professor of architectural design.⁵⁶

On 27 October 1938 Ada Bursi graduated in architecture (85/100 points) from Politecnico di Torino where she was the only woman in her class.⁵⁷ That year there were 13 women architects and 23 women engineers in Italy.⁵⁸

The same year of her graduation, Bursi passed the Esame di Stato (a state exam to become a professional architect), with 239 points out of 280,⁵⁹ and she became a self-employed architect. On 24 October 1940 she became a member of Ordine degli Architetti (Architects Association).

She was a volunteer assistant of the professor Giovanni Muzio at the Politecnico for the courses of Architectural Composition and Elements of Architecture and Survey of Monuments.

Not having found a future academic career at the university, which was still the domain of men, she looked for employment in public administration. In 1941, she was hired in the Ufficio Tecnico Comunale (City Technical Office) where she worked until 1971.

At the end of 1945, Bursi was the only female among the 26 founders of the Gruppo di Architetti Moderni Torinesi "Giuseppe Pagano" (Modern Architects Group "Giuseppe Pagano") created in memory of the architect who died in a concentration camp.⁶⁰ This is explained by the fact that Ada

⁵⁴ The presence of women at the Fine Art Academy in Italy, especially in architectural sections, needs to be investigated.

⁵⁵ *Esami di ammissione ai Corsi Superiori della R. Accademia delle Belle Arti e del R. Biennio Speciale in Architettura, Versamento della terza parte di tasse, 25 giugno 1927 (anno V°) al regio Uffici del Demanio di Torino, Torino 25 giugno 1927, 1010, 2N, Historical Archive of the Accademia Albertina delle Belle Arti (or AABA).*

⁵⁶ *Ripartizione delle tasse scolastiche e delle propine degli esami per il conseguimento del Diploma di Professore Architettonico, Torino, 25 aprile 1927, To 118, Historical Archive AABA.*

⁵⁷ Giuseppa Audisio was first to graduate in Architecture in Turin in 1930 but she did not practice the profession.

⁵⁸ Cf. De Giorgio, "Donne e professioni," 479.

⁵⁹ *Università degli Studi di Roma, Certificato Superamento Esame di Stato (n. posizione 244, n. partenza 2299) Roma 25 luglio 1939 – XVIII, folder "Ada Bursi," Historical Archive OAT.*

⁶⁰ Cf. Emilio Pifferi, "Fondazione del Gruppo di Architetti Moderni Torinesi Giuseppe Pagano," *Agorà* 3 (1945), 16.

Fig. 7. Amedeo Albertini, Gino Becker and Ada Bursi, Modular furniture at the exhibition of furniture by architects and craftsmen of Piedmont, association Pro Cultura Femminile, Turin 1946. From: Albertini, Bursi, Becker, "Mobili da Torino," 16 (Copyright free).



Bursi did not share the anti-Semitic ideology of the regime. Her membership to the fascist party was determined by her need to find work.

In 1946, with her male colleagues architects Amedeo Albertini (1916–1982) and Gino Becker (1913–1971), Bursi worked as a furniture designer making a series of modular furniture (Fig. 7) for the Mostra di arredamento di architetti e artigiani piemontesi (Exhibition of furniture by architects and craftsmen of Piedmont) held in Turin at the women association Pro Cultura Femminile and promoted by Felice Casorati and Paola Levi Montalcini.⁶¹ Among the exhibitors were also Carlo Mollino (1905–1973), Gio Ponti (1891–1979) and Ettore Sottsass sr.

The modular furniture was designed to contribute to change living models; architects wanted to express a new freedom of household life. The female role was becoming more standardized and based on the efficiency of Taylorism.

In 1947, Albertini, Becker and Bursi wrote to the Commission Arredamento of the VIII Triennale di Milano to propose the mass production of their modular furniture.⁶² They also sent the Commission *Oggetti per la casa* (Object for the house) projects for a desk set, tea sets and faucets.⁶³

It is well known that most architects operating in the country had also practiced as designers. In fact, the training of architects included furnishings and furniture. Until the early 1950s, this close-knit relationship between architecture and design saw furniture perceived as part of the

⁶¹ On the exhibition see: Amedeo Albertini, Ada Bursi and Gino Becker, "Mobili da Torino," *Domus* 216 (1946), 16; Daniele Regis, *Gino Becker Architetto: Architettura e cultura a Torino negli anni Cinquanta* (Torino: Gatto Editore, 1989), 49–51, 111–114.

⁶² Amedeo Albertini, Ada Bursi and Gino Becker, *Letter to Commission Arredamento of the VIII Triennale di Milano*, letter n. 201, 16/01/1947, S.DIS/M.9–2°, Archive Amedeo Albertini (or AAA). The author thanks Alberini's family.

⁶³ Letter 31/12/1946, S.DIS/M.9–2a, AAA.

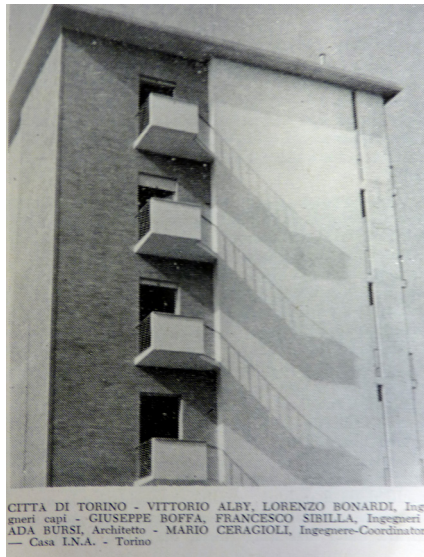


Fig. 8. Ada Bursi et al., Social housing in Turin - Istituto Nazionale delle Assicurazioni - INA Gestione Casa, ante 1954. From: Melis, "Per una città migliore," 317 (Copyright free).

architectural environment. Ada Bursi typified this approach as other colleagues did later. Margherita Bravi (1921–2006) and Luisa Castiglioni Deichmann (1922) designed a built-in wardrobe, a table and chairs for the IX Triennale di Milano in 1951. Castiglioni and Bravi studied at the Politecnico di Milano, graduating in architecture in 1946 and 1948, respectively.⁶⁴

While working in the city technical office in 1946, Ada Bursi also participated together with architects Albertini and Becker in tendering for the cemetery to those fallen during the liberation of Turin.⁶⁵ The project, anti-monumental and metaphysic won the second prize as the first prize went to Carlo Mollino.⁶⁶

The trend for male-female partnership was one way women dealt with their minority status. AIDIA's newsletter also noted the importance of collaboration for improving women's career opportunities, and a partnership was a popular choice amongst architects. Male partnerships promised more commercial success as well as the continuity required to sustain a practice

when the demands of raising children arose.⁶⁷

In the late 1940s, Bursi showed her artistic creativity by creating some furniture reminiscent of abstract painting and sculpture.

In the city office she designed social housing (Fig. 8) and many school buildings for the City. This experience shows once again how gender also affected the type of commissions women received, in fact most of the work was in a domestic context or concerned children. This demarcation of "feminine" realms within architecture, linked to women's maternal and domestic duties, ensured that the gender hierarchy within the profession remained intact.

In 1954, Ada Bursi contributed in designing the Piccolo Torino nursery school⁶⁸ where she created a



Fig. 9. Ada Bursi, School in via Duino, Turin 1969. Photo by Caterina Franchini.

terracotta decoration that surrounds the facades and the mosaic interior decoration of the entrance hall, thus demonstrating her artistic sensitivity and ability.

At the early 1960' she worked on the project of two twins primary schools ("Giulio Gianelli", 1961 and "Giacomo Leopardi", 1961, opening 1962–63) in the new planned Vallette suburb, a worker residential neighbourhood.⁶⁹

It was only at the end of the 1960' that Bursi was entrusted with the execution of an entire school complex (1968–1970) in a worker residential suburb, between Fiat factories of Lingotto and Mirafiori.⁷⁰ There, the architect applied her experiences to the building which is distinguished by the relationship between the interior and exterior spaces (Fig. 9). On the access road, there are four main wings which were built parallel to each other, interspersed with large green areas and a garden, design by Bursi, used for outdoor activities and connected with other buildings at the

back with covered walkways. New technologies characterized the design of the brick work facades: window frames made out of aluminium.⁷¹

⁶⁴ In Milan, from 1945 to the early 1970s, 47 architects have emerged as furniture designers. See: Rossi, "Furniture, Feminism and the Feminine," 243. On woman presence at the *Triennale di Milano* see: Alessia Caserio, Alessandra Gulmini and Luca Mariani, "Le signore della Triennale: La presenza femminile italiana nella storia dell'esposizione milanese (1923–2000)," (diss. Politecnico di Milano, 1998–1999).

⁶⁵ Gino Levi Montalcini, "Memoria di Partigiani," *Agorà* 6 (1946), 33–35.

⁶⁶ Cf. Regis, *Gino Becker*, 49–51.

⁶⁷ Cf. Associazione Italiana Donne Ingegnere e Architetto, *Notizie dall'A.I.D.I.A.* 5 (1957), 3.

⁶⁸ *Via Giacinto Collegno* 65, "Piccolo Torino" - *Circoscrizione* 3, dis. 101, Archive of the Comune di Torino - Settore Edilizia Scolastica (or ACT SES). The signature of Asa Bursi do not appears on the project drawings nevertheless documents contained in Bursi's folder at the Archivio Storico della Città di Torino (ASTo) demonstrate her authorship. *Pratica individuale di Bursi dott. Arch. Ada, Architetto di I° classe*, Registro a matricola, vol. 11, 780, ASTo, Città di Torino.

⁶⁹ See: Fondazione Tancredi di Barolo, "Scuola elementare Giulio Gianelli" and Fondazione Tancredi di Barolo, "Scuola elementare Giacomo Leopardi".

⁷⁰ *Via Duino*; 544 0A (Scuola Materna); 544 0A bis (Scuola Elementare); 545 0A (Scuola Media), ACT SES. Signature: architetto Ada Bursi.

⁷¹ See: Diana Lomas, "Complesso scolastico (scuola materna, elementare, media), Torino, via Duino, 1969, Ada Bursi," in Maria Adriana Giusti and Rosa Tamborrino, *Guida del Piemonte: Architettura del Novecento (1902–1906)* (Torino: Umberto Allemandi C., 2008), 317.

Bursi worked as a professional architect during the reconstruction of post-war Turin, when the number of *architette* (women architects) started to rise: there were 43 women architects in 1961 in Turin out of 306.⁷² She was also involved in the urban growth of the 1970s with some projects of urban design and restoration, until she left the *Ordine degli Architetti* in 1975 and ended her career.⁷³

Conclusion

Emma Strada and Ada Bursi epitomize the complexity of questions related to the choice of a liberal profession and the difficulties that women needed to challenge especially in terms of social-cultural pressure. On one hand, the case of Emma Strada shows us how the family background was determinant for the success in the profession. On the other hand, the biography of Ada Bursi confirms that the boundaries between architecture, interior design, industrial design and graphic design are typical of the Italian case and are indifferent to gender. However, cultural norms confined professional work of women architects in areas related to the home and motherhood.

Some questions are still to be investigated and some of these are listed below. Were women civil engineers and architects intended to devote themselves completely to their career? How did their private lives influence their professional choices? Has participation in women's associations to defend the right to exercise a liberal profession actually helped women in their work?

Now we know that thanks to these professionals the status of women in engineering and architecture in Italy began to change in the second half of twentieth century.

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⁷² Cf. Associazione Ingegneri e Architetti, *Annuario*, 31–35.

⁷³ *Cancellazione dall'Albo degli Architetti delle Province di Torino, Asti e della R.A. Valle D'Aosta, Torino 27 maggio 1975 (Prot. n. ° 205)*, folder "Ada Bursi," Archive OAT.