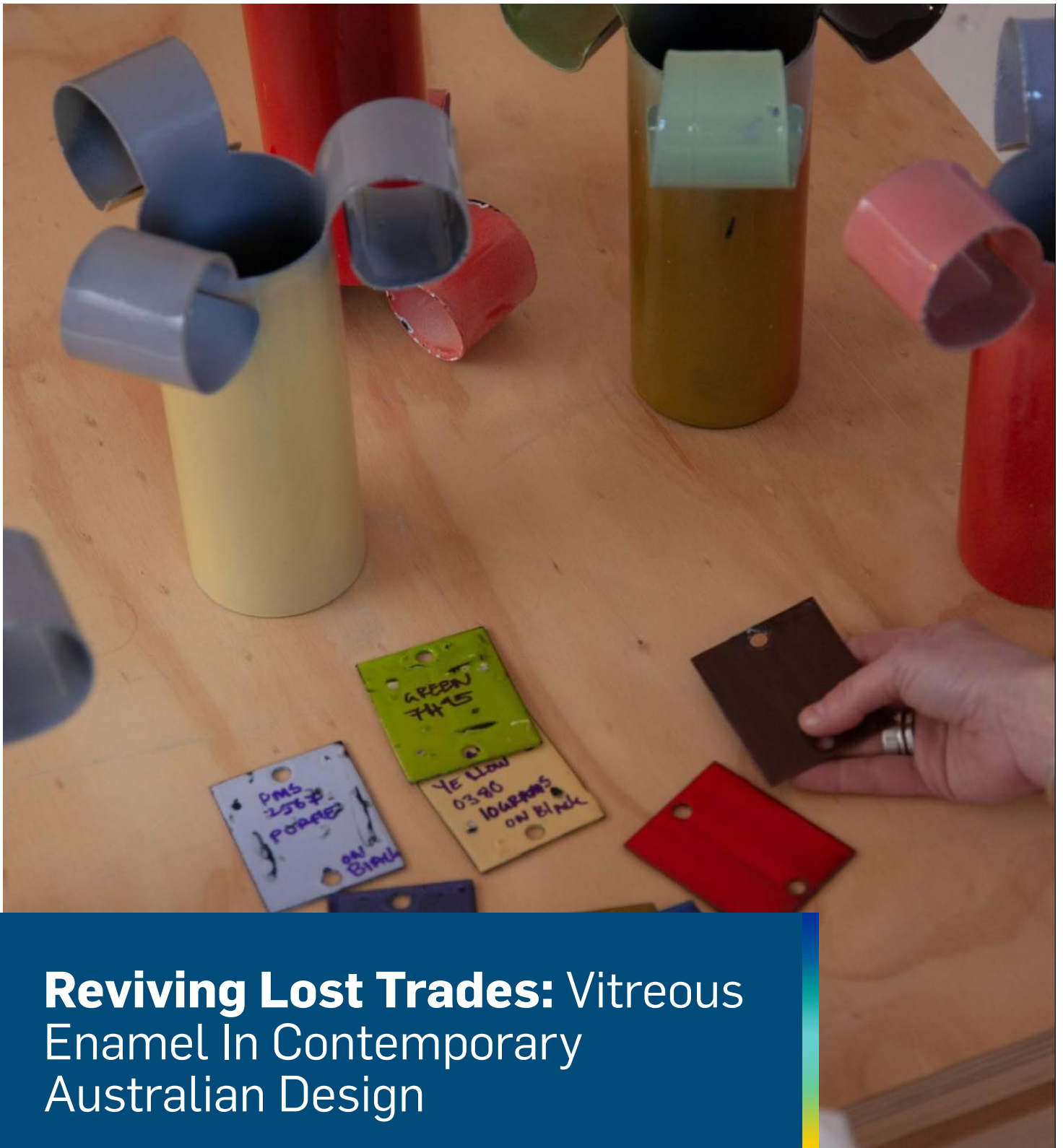




Reviving Lost Trades: Vitreous Enamel In Contemporary Australian Design

Jordan Fleming

George Alexander Foundation Fellowship 2026

© **Jordan Fleming 2026**

First Published 2026

All rights reserved. No part of this publication may be reproduced, in any form by any means, without permission from the publisher

Report by Jordan Fleming

Typeset by Danielle Cull

Printed by Elgin Printing

The International Specialised Skills Institute

1/189 Faraday St,
Carlton VIC 3053
info@issinstitute.org.au
+61 03 9347 4583

ISBN: 978-1-923561-19-9

Table of contents

01	Acknowledgements	1
02	Executive Summary	3
03	Glossary	7
04	Fellowship Background	9
05	Fellowship Learnings	13
06	Personal, professional, and sectoral Impact	42
07	Recommendations and Considerations	46
08	Conclusion	48
09	References	50
10	Appendix	51

01

Acknowledgements

The Awarding Bodies

The Fellow sincerely thanks the Victorian Skills Authority (VSA) for providing funding support for the ISS Institute and for this Fellowship.

The ISS Institute plays a pivotal role in creating value and opportunity, encouraging new thinking and early adoption of ideas and practice by investing in individuals. The overarching aim of the ISS Institute is to support the development of a 'Better Skilled Australia'. The Institute does this via the provision of Fellowships that allow Australians to undertake international skills development and applied research that will positively impact Australian industry and the broader community.

The ISS Institute was founded in 1991 by a small group of innovators, including Sir James Gobbo AC, CVO, QC, and former Governor of Victoria, who had a vision of building a community of industry specialists who would lead the up skilling of the Australian workforce.

The Fellowship program builds shared learning, leadership, and innovation across the broad range of industry sectors worked with. Fellows are supported to disseminate learning and ideas, facilitate change and advocate for best practices by sharing their Fellowship learnings with peers, colleagues, government, industry, and community. Since its establishment, ISS Institute has supported over 580 Fellows to undertake skill and knowledge enhancement across a wide range of sectors which has led to positive change, the adoption of best practice approaches and new ways of working in Australia.

The Fellowship programs are led by our partners and designed to achieve the needs and goals desired by the partners. ISS Institute works closely to develop a Fellowship program that meets key industry priorities, thus ensuring that the investment will have a lasting impact.

For further information on ISS Institute Fellows, refer to www.issinstitute.org.au

Governance and Management

- Patron in Chief: Lady Primrose Potter AC
- Patrons: Mr Tony Schiavello AO, Mr James MacKenzie and Mark Kerr
- Founder: Sir James Gobbo AC, CVO
- Board Chair: Dr Bill Petreski
- Board Treasurer: Adrian Capogreco CA
- Board Secretary: Alisia Romanin
- Board Members: Prof. Amalia Di Iorio AM, Robert Buckingham, Jeremy Gobbo KC and Susan Renouf
- Chief Executive Officer: Dr Katrina Jojkity

Sponsor - The George Alexander Foundation

In 1972, George Alexander AM set up an independent philanthropic foundation as a way of sharing his wealth and giving back to the community. The focus of The George Alexander Foundation is supporting access to education for promising young people, particularly those from rural and remote areas. The George Alexander Foundation's aim is to help overcome barriers and make it possible for talented students to achieve their potential and go on to contribute to the Australian community.

The George Alexander Foundation (GAF) Scholarship Programs form the core of the foundation's work, operating in partnership with major tertiary institutions, while our Fellowships and other Education grants provide other enriching and challenging educational experiences.

George Alexander believed in the notion of 'planting seeds and hoping they grow into pretty big trees'. The programs supported by the Foundation endeavour to support this ideal and as GAF Fellowship recipients go on to contribute to the community, George's legacy and spirit lives on through their achievements.

Fellow's Acknowledgements

The Fellow wishes to acknowledge the generous support of the George Alexander Foundation and the ISS Institute for making this Fellowship possible. Their commitment to professional learning and the preservation of specialist skills enabled this research to be undertaken at a critical moment for design and manufacturing in Australia.

The Fellow gratefully acknowledges the many international manufacturers, artisans and specialists who shared their time, expertise and generosity throughout the Fellowship period.

In particular, the Fellow acknowledges Vincent Vanden Borre of Emaillerie Belge in Brussels, for his openness in sharing the company's history, philosophy and production process in such depth; Patrizia Mian and Gianluca Zanella of Incalmi

in Marghera, for their generosity, hospitality and ongoing dialogue, and Giulia Rioda for sharing her technical knowledge of the enamel workshop; Alessandra Malfatti in Padua, for welcoming the Fellow into her studio and speaking so openly about her own training and practice; and Sara Martín Mazorra of Ranieri in Terzigno, for her time and insight into lava stone glazing. The Fellow also acknowledges designer Valentina Cameranesi Sgroi, whose own work and generosity in sharing her contacts first led the Fellow to Incalmi.

Within Australia, the Fellow acknowledges the knowledge and support shared by Peter Magalotti of Melbourne Enamelling, whose decades of experience and generosity with his time shaped the very earliest stages of this research, and Adam Morgan and the team at Glassmetal Industries in Geelong, for an ongoing collaboration that has become one of the most significant outcomes of this Fellowship. The Fellow also thanks the Powerhouse Museum for the opportunity to develop the Powerhouse Made project, and RMIT and Craft Victoria for their early and continued interest in sharing this research further within the Australian design and craft communities.

The Fellow would like to thank Dr Katrina Jojkity, Chief Executive Officer of the ISS Institute, and Kay Schlesinger, Program Manager, for their support throughout the entire Fellowship process.

Finally, the Fellow wishes to thank those closest to her, without whom this Fellowship would not have been possible. To her mother, Christine Robson, for her unconditional support of her creative pursuits, always. To Leigh Welsh, for his constant support of her creative practice, including through its most stressful and time-pressured moments. To her aunt, Fiona Fleming, for her particular support and assistance over the final months of this Fellowship and the writing of this report. And to Ella Saddington, a former George Alexander Foundation Fellow, for her mentorship and friendship throughout this Fellowship.

02

Executive Summary

Vitreous enamel is an industrial coating process in which powdered glass is fused to a metal substrate through milling, spraying or dipping, and high-temperature furnace firing, producing a durable, glasslike surface finish. Despite this established industrial history, it remains largely uncommon as a surface treatment within Australian product design and furniture manufacturing. Enamelling also has a diminishing presence within Australian secondary and tertiary jewellery education, narrowing the pathways through which students, artists, designers and makers might encounter the process. This suggested a process with genuine potential for contemporary product design and furniture in Australia: a potential the Fellow recognised partly through her own interest in the material's qualities, and a sense that it could hold similar appeal for other designers and makers already exploring it independently, if not yet at scale.

This Fellowship began as an attempt to understand a process that appeared to be quietly diminishing within Australian industry: what vitreous enamel could and couldn't do, where its practical limitations lay, and why it seemed to have disappeared from contemporary design and manufacturing rather than being reappreciated and recontextualised. With a focus on production processes, material behaviour, substrate diversity and the industry structures that keep enamel manufacturers viable overseas, it became clear that several international manufacturers were working at a scale genuinely accessible to designers, makers and artists, an accessibility largely absent within Australia. The Fellowship was undertaken over approximately

six weeks from March to April 2026, beginning with factory visits and in-depth discussions with several of Australia's remaining vitreous enamel businesses before extending to France, Belgium and Italy, where a small but active network of manufacturers and artisans continue to apply enamel to substrates including copper, steel, cast iron, aluminium, glass and lava stone. Further research and process development continued in Australia from June to July 2026.

Key Fellowship learnings suggest that vitreous enamel's contraction in Australia is as much a succession and knowledge-transfer problem as a commercial one. Peter Magalotti, with over forty years' experience and among a small number of Australians still practising the process, has shifted his practice almost entirely to restoration work, with no successor currently identified to inherit his knowledge. Glassmetal Industries in Geelong, by contrast, a family business now training its third generation, has continued to operate steadily, sustained largely by ongoing demand for enamelled signage, evidence that a viable industrial base still exists in Australia even as the wider field has narrowed. Recipes, firing schedules and application methods appeared largely to be passed directly between practitioners rather than formally documented, and the Fellow recognised this as a real risk: as demand for the process continues to diminish, that knowledge risks being lost, at both an industrial and artisanal scale. Specialist materials such as enamelling-grade steel are also no longer manufactured in Australia and must be imported in bulk. Industrial vitreous enamel

application appears to have declined more broadly over the past century, largely due to the rise of cheaper, lighter synthetic alternatives, including synthetic polymers, organic paints and stainless steel; the high-heat glass-fusing process was gradually displaced by materials offering easier manufacturing, lower energy costs and greater resistance to impact shattering¹. This broader shift may also have contributed to enamelling's reduced presence within design curricula. Rather than treating the process's inherent unpredictability as a limitation, the Fellow came to recognise it as one of vitreous enamel's central strengths, well suited to the handcrafted, one-off nature of collectible design.

Internationally, this contraction appeared to have followed a different trajectory. At Emaillerie Belge in Brussels, the Fellow observed industrial-scale enamel production and discussed the trade directly with its owner, Vincent Vanden Borre. In Padua, artisan Alessandra Malfatti, then restoring a private collection of Paolo De Poli and Gio Ponti enamels, demonstrated a direct link between historical mastery and contemporary studio practice. Repeated visits to Incalimi, based in Marghera on the mainland opposite Murano and connected to the island's glassmaking heritage through its founders, showed how sustained client demand can drive a design company to establish an entirely new enamel workshop within five years. Ranieri in Naples demonstrated how a hybrid vitreous and ceramic glazing system can operate at both architectural and furniture scale. Several of these manufacturers now collaborate with internationally recognised furniture, fashion and design brands, including Hermès, having reintroduced and refined traditional enamelling techniques in response to renewed design interest, evidence that vitreous enamel is not simply a historic craft requiring preservation, but a contemporary manufacturing process with a demonstrated capacity for reinvention.

A recurring tension also emerged across several of these sites, between control and unpredictability: whether variation in colour and finish should be eliminated, valued as historical precedent, accepted as a commercial trade-off, or deliberately engineered as a design feature. This tension was resolved differently at almost every site visited, and became one of the most consistent threads running through this Fellowship's research. A related finding concerned the informal, person-to-person nature of knowledge transfer within the field internationally: discovering that technicians at both Incalimi and Alessandra Malfatti's studio had trained under the same specialist, Rebecca Di Filippo, offered concrete evidence of just how small and closely connected this international network actually is.

Much of this international research was also, in effect, a search for proof that a commercially viable mid-scale enamel practice could exist at all. Several of the manufacturers and artisans visited, including Malfatti's ongoing collaboration with furniture brand Paola Lenti, offered working examples of exactly this: enamel practice operating profitably between the jewellery bench and the industrial factory floor. By the time of Milan Design Week, where finished work from several of these same manufacturers was exhibited to international audiences, the question the Fellow had been carrying through this research had shifted. It was no longer only about how vitreous enamel might be preserved, but how it might keep being reinterpreted and evolved as a contemporary design material.

¹ Institute of Materials, Minerals and Mining, 'A Concise History of Enamel', IOM3 [website], 22 September 2022, <https://www.iom3.org/resource/a-concise-history-of-enamel.html>, accessed 14 September 2026



Figure 1. *Across Dama, 2025* - Claudia Pignatale, produced by Incalmi, Marghera. Champlevé-enamelled copper table.

Personally and professionally, this Fellowship has clarified how the Fellow might combine industrial production capacity with the expressive, hand-applied techniques observed internationally - techniques closer to the smaller-scale, artisanal end of enamelling practice, such as wet-packing, using smaller air brush guns, dry powder application and multi-colour layering - within her own furniture and object design practice. It has also given her direct relationships with manufacturers capable of ongoing collaboration and technical exchange.

These relationships point beyond the Fellow's own studio to a broader problem. Much of the firing and application knowledge for different enamels and substrates sits with a handful of ageing practitioners, with no clear way to pass it on. Design and jewellery courses in Australia teach little to none of it - a gap that runs across secondary, tertiary and TAFE education alike. And without a practical way for designers and

manufacturers to find and commission each other, that knowledge has nowhere obvious to go - which is exactly the middle ground between industrial and artisanal production this Fellowship set out to test.

At a sectoral level, this experience has sharpened how the Fellow sees the industrial and artisanal ends of enamel practice coming together: using smaller-scale, hand-applied technique to reframe existing industrial application, and to create designed objects that demonstrate new ways the process can be used. Continued work with Glassmetal Industries, and further engagement with Peter Magalotti and Australia's other remaining practitioners where possible, will carry that forward - both to keep what expertise remains active, and to show designers and manufacturers that vitreous enamel still has far more to offer than its current use suggests.



Figure 2. Alessandra Malfatti & assistant Applying powdered enamel for the Paola Lenti table Top designs.

This report recommends bringing Australia's remaining industrial enamel capacity together with these finer-scale application techniques, to build toward that middle ground before the country's remaining expertise and supply chains contract further. In practice, that starts with connecting the practitioners who hold this knowledge to people who can carry it forward, before it disappears with them. This Fellowship observed the risk directly: process knowledge, including colour formulation, firing schedules and application method, is rarely written

down anywhere in the trade - it exists as knowledge built up over years by individual practitioners, and holds only as long as someone is actively passing it on. Where that succession isn't in place, as this research found is increasingly the case in Australia, that knowledge is at genuine risk of being lost. The report also recommends bringing enamelling back into design and jewellery education, and continuing to build relationships between manufacturers, international collaborators, and the designers who could work with them.

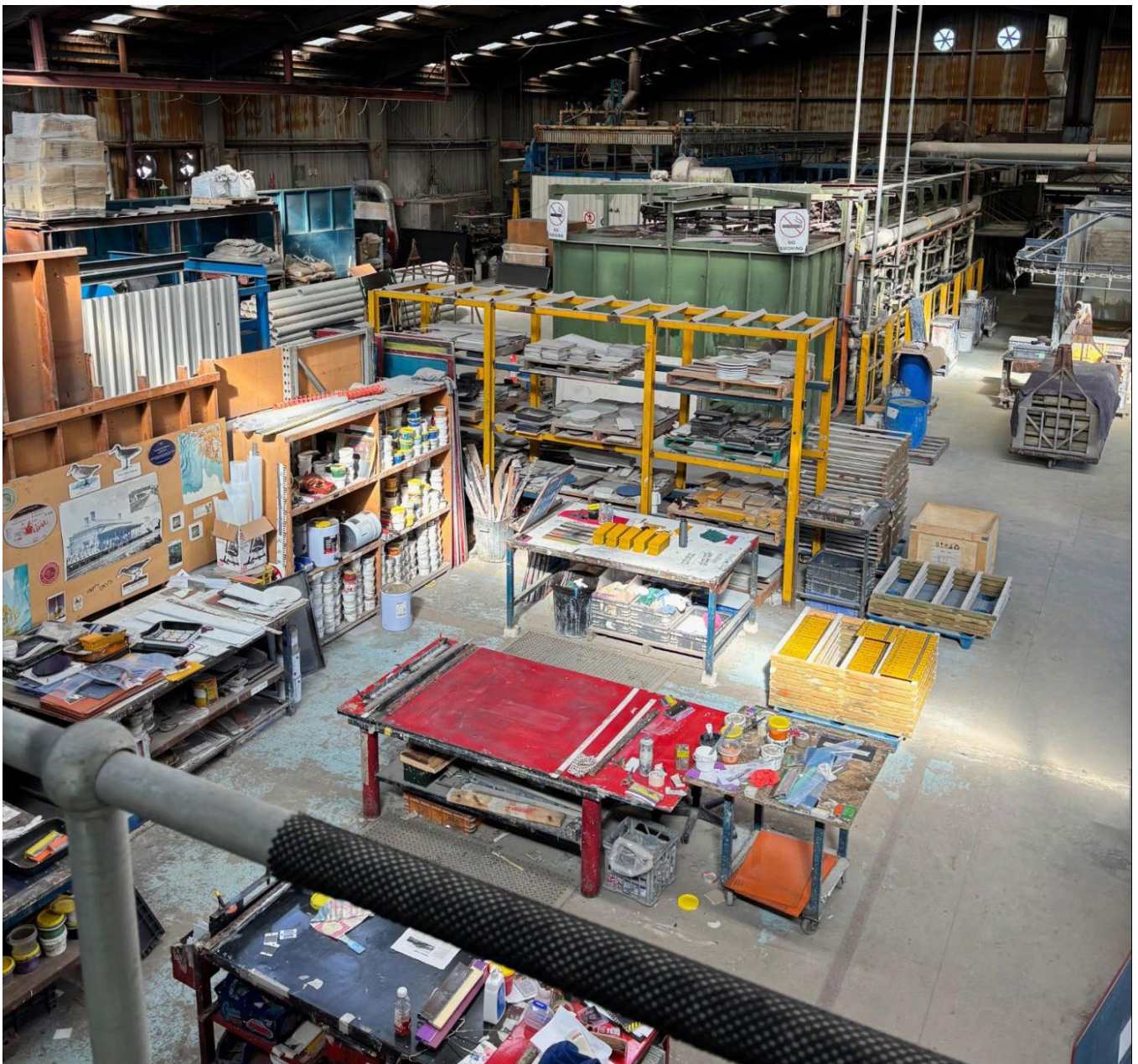


Figure 3. Glassmetal Industries Factory in Geelong

03

Glossary

Champlevé

An enamelling technique in which recesses are engraved or etched into the metal substrate and filled with enamel, producing a thicker, more dimensional surface than surface-applied enamel alone.

Cloisonné

An enamelling technique in which fine wire is used to create compartments (cloisons) on the metal surface, which are then filled with enamel, keeping colours separated during firing.

Counter-enamel

Enamel applied and fired to the reverse side of a piece to balance stress across the metal substrate and reduce warping or distortion during firing.

Cristallo glass

A clear, colourless glass developed on Murano in the sixteenth and seventeenth centuries, historically used as a base for fine, painted enamel decoration.

Dry powder application (dry sifting)

Application of enamel as a dry powder, without a liquid carrier, typically by dusting or sieving onto the substrate. Associated with small-scale jewellery enamelling, and harder to control precisely for coverage and thickness than wet application methods.

Flux

A clear, unpigmented enamel base, typically used over metal so that the substrate's own colour or texture remains visible through the fired surface.

Frit

Ground glass, the base material from which enamel powder is produced, typically combined with pigments and metal oxides.

Gran fuoco (high-fire enamel)

High-temperature vitreous enamelling, generally in the range of 750–870°C depending on substrate and studio, as distinct from lower-temperature enamelling more typical of small-scale jewellery work.

Graffito

A decorative technique in which unfired enamel powder is selectively scratched or removed to reveal the substrate or an underlying enamel layer before firing.

Incalmo

A historic Murano glassmaking technique of joining two separately blown pieces of glass. The origin of the name of the design company Incalmo, reflecting its broader philosophy of combining different materials, processes and craft traditions within a single object.

Lead-based enamel / lead-free enamel

Historical enamels used lead compounds to achieve a more lustrous, glossy finish. Contemporary practice has largely shifted to lead-free formulations for safety and toxicity reasons, producing a visibly different, less lustrous surface.

Substrate

The base material, commonly copper, steel, cast iron, or glass in the contexts examined by this Fellowship, to which vitreous enamel is fused.

Vitreous enamel

In the first instance, a glassy coating material, powdered glass fused to a metal (or, historically, glass) substrate through high-temperature firing. The term is also used to describe the industrial and artisanal process of applying that material, and the finished object it produces.

Wet-packing

Application of enamel as a wet slurry, typically using a brush or spatula, as distinct from dry powder application.

Wet spray application

Application of enamel as a liquid slip or slurry, made by mixing enamel frit with water, clay and additives, then applied evenly using a spray gun. Typically associated with industrial-scale enamelling, and produces a more consistent, controllable finish than dry powder application.

04

Fellowship Background

Fellowship Context

This Fellowship originated from a practical challenge rather than an abstract research question. While exploring material finishes for her contemporary furniture, lighting, and object design practice, the Fellow identified vitreous enamel's unique combination of qualities: exceptional depth of colour, a luminous glass-like surface, an extensive colour palette, painterly effects, and a level of permanence unmatched by paint or powder coating, as the material is permanently fused to its substrate rather than applied over it. This discovery reframed the research question. What began as curiosity about a material and surface finish the Fellow wished to incorporate into her practice evolved into an investigation into why a technically sophisticated, centuries-old process had declined so significantly within Australian design and manufacturing.

Early attempts to identify companies, specialists, and artisans capable of collaborating on contemporary enamelled furniture and objects revealed a significant structural gap within Australia. Vitreous enamel remains active on a limited scale in jewellery and decorative arts, and at an industrial scale through architectural cladding, signage, and infrastructure, but is almost entirely absent from the mid-scale of collectible furniture, lighting, and functional objects, the scale at which the Fellow's practice operates, a missing middle, with two active ends of the field and almost nothing operating between them. The Fellow's objective was to combine the production capacity

of industrial enamelling with the expressive, handcrafted techniques more typical of jewellery-scale practice, and this missing middle became the starting point for the international research that follows.



Figure 4. Left: vase, Marguerite de Bodinat, France, c.1900, cloisonné enamel. Right: bowl, Noémie Philastre, Paris, c.1902, enamelled copper. Musée des Arts Décoratifs, Paris - an example of small-scale artistic enamelling held in the museum's collection.



Figure 5. An industrial graniteware (speckleware) enamel sample alongside screen-printed publicity signage in vitreous enamel, Emaillerie Belge, Brussels, showing the industrial scale of the factory's everyday output.

Early conversations with two of Australia's few remaining vitreous enamel practitioners, one an individual craftsman now working largely in restoration, the other a small industrial manufacturer, showed this contraction playing out at both ends of the field: specialist knowledge held by very few people, informally passed on rather than documented, and an increasingly fragile supply chain for materials the process depends on. These conversations, and the people behind them, are introduced properly in Fellowship Learnings; here, they simply confirmed that the problem was real, immediate, and close to home.

Internationally, the picture looked different. While many European manufacturers had experienced similar pressures, a number had successfully reinvented, rather than simply preserved, traditional enamelling technique for contemporary design and luxury markets. This contrast, an ageing, contracting domestic base set against an international field actively reimagining the same material, became the starting point for this

Fellowship's research, undertaken across France, Belgium and Italy.

The Fellowship itself is made possible through the George Alexander Foundation, established from the estate of George Alexander, an English inventor, who left his estate to support Australians undertaking practical, skills-based study abroad. This origin proved unexpectedly fitting over the course of the Fellow's research: travelling to Italy to learn a practical craft from specialists willing to share their knowledge directly mirrors, in method as much as in substance, the informal way technical knowledge within vitreous enamel itself continues to move, passed from practitioner to practitioner, workshop to workshop, rather than held within institutions built for the purpose. During a visit to a small studio in Padua, the Fellow's explanation of the Fellowship's funding history drew this same observation from the practitioners hosting her: that the Fellow's presence in their workshop, learning informally and firsthand, was simply the latest link in a chain of knowledge transfer they recognised well from their own training. The Fellowship's structure, in other words, is not incidental to its subject matter, it is itself an instance of the very knowledge-transfer model this report goes on to argue Australia needs to rebuild.

Fellowship Methodology

The Fellowship methodology combined intensive workshop visits, practical observation and institutional research, providing both technical knowledge and broader contextual understanding of vitreous enamelling. The Fellowship began with visits to two of Australia's remaining vitreous enamel businesses, including factory tours and in-depth discussion with company owners and craftspeople, to understand their production capabilities, how the industry had evolved, and the substrates and finishes achievable through contemporary industrial enamelling. Building on this Australian foundation, the Fellow then visited factories, workshops and studios across France, Belgium and Italy, ranging from several hours to multiple days per site, gaining firsthand insight into both industrial and studio-scale enamelling practice.



Figure 6. A fired piece removed from the kiln, glowing red, Incalimi, Marghera.

Alongside these visits, the Fellowship included research at museums and private collections undergoing restoration, to investigate the historical and contemporary application of vitreous enamel and the diverse substrates on which it has been applied. The Fellow also attended Milan Design Week, where finished enamelled objects from several manufacturers visited earlier in the Fellowship were exhibited to international audiences, offering a rare opportunity to observe the complete journey from factory floor to public exhibition.



Figure 7. Enamelled copper boxes within Studiopepe's "The Intimacy" installation, Manifesto Project, Milan Design Week, produced in collaboration with Incalimi.

Throughout the Fellowship, processes, techniques and conversations were documented through written notes, voice-recorded interviews, photography and video, with the intention of translating this knowledge into future Australian outcomes, including exhibitions, education and continued commercial development.

Fellowship period

The Fellowship was conducted over approximately 6 weeks during March - April 2026.

Further research and working with the process was conducted in Australia from June - July 2026.

Fellow Biography

The Fellow is a Melbourne-based designer and artist working across furniture, lighting and sculptural objects. Holding a Bachelor of Design from the University of New South Wales and a background in cabinetmaking and professional career as an interior designer, she founded her eponymous practice in 2018, producing process-led, materially driven work that sits between utility and ornament. Her practice is rooted in traditional making techniques while remaining open to

experimentation, with fabrication, manufacturing and material behaviour guiding each design. She has exhibited nationally and internationally, including at Melbourne Design Week, Melbourne Now at the NGV and Milan Design Week, and has received recognition including 30 Under 30, Vogue Living top 50. The Fellow maintains a sustained interest in traditional and industrial manufacturing processes that underpin her contemporary design practice.

Prior to this Fellowship, she undertook independent research into vitreous enamel - its history, applications and potential for reintegration into contemporary design and manufacturing - establishing the technical curiosity and industry relevance behind this project. While vitreous enamel remains in use in Australia, it is produced only by a small number of local companies operating at an industrial scale, and is little known or used by designers working at a smaller, studio scale. Her practice increasingly requires direct engagement with fabrication processes, and she is drawn to vitreous enamel for both its inherent aesthetic qualities and its practical, highly durable properties. This Fellowship represents a critical step in acquiring advanced technical skills in vitreous enamel and integrating it into contemporary Australian design at a scale beyond current industrial application.



Figure 8. The Fellow with an early enamel test sample, Peter Magalotti's workshop, Melbourne Enamelling, taken during independent research prior to applying for this Fellowship.

05

Fellowship Learnings

The Fellowship Learnings outlined below capture the technical, structural, and cultural knowledge gained through international research, with direct relevance to the revival of vitreous enamel within Australian design and manufacturing. Three themes emerged consistently across the sites visited: the relationship between industrial and artisan scale, and the design opportunities that open up where the two intersect; substrate as an active design variable rather than a fixed technical constraint; and the culture of knowledge-sharing that determines whether a specialised process can be sustained and passed on. Together, these findings move the Fellowship beyond documenting individual visits toward a clearer understanding of what has allowed vitreous enamel to be continually reinvented internationally, and what Australia would need to put in place for the same reinvention to take hold here.

Peter Magalotti / Melbourne Enamelling

Peter Magalotti was the Fellow's first real contact in the Australian enamel industry, and the visit to his workshop at Melbourne Enamelling, three hours, largely unplanned in its direction, turned out to matter more than either of them realised at the time.

Peter has worked with enamel for over forty years, one of a small handful of people in Australia with that depth of hands-on experience. Much of his current work involves restoration, repairing damaged enamel pieces, alongside new work

such as house signage, collectible train signage and enamelled appliances, and his workshop has narrowed accordingly: as his team shrank over the years to just himself, the space became built entirely around one person's accumulated knowledge.



Figure 9. Peter Magalotti among decades of past enamelling work, including signage and gravestone plaques, at Melbourne Enamelling.



Figure 10. A hibachi BBQ and an old house number sign, examples of the range of objects produced and restored across his career.

With no clear successor to pass the business on to, much of that knowledge and technique now sits with him alone.



Figure 11. Peter Magalotti's workshop at Melbourne Enamelling, showing the spray booth, sand blaster and kiln.

The Fellow had come with an early, still-forming idea for a side table and a hope that Peter might be interested in working on it together. Most of the visit was spent talking through the process and what was actually possible: kiln size, substrate options for enamelling, the difficulty of enamelling larger flat surfaces evenly, and the practical ceiling on how far the process could be scaled up in a workshop of his size.

Turning point, the colour samples That came later in the visit, almost by accident. While Peter was talking to another visitor, the Fellow was looking around the workshop and found a handful of old colour test samples pushed to one side. They looked nothing like the finished enamel work displayed around the rest of the space: loose, organic, irregular, with colour that pooled and shifted rather than sitting flat and even. When the Fellow showed them to Peter and said this was closer to what she was actually interested in, he was genuinely confused. To him, these weren't examples of anything. They were colour tests, the discarded, in-between stage of getting to a correct, controlled result, not a destination in their own right.



Figure 12. The colour test samples found at Peter Magalotti's workshop, the loose, irregular quality that first drew the Fellow toward unpredictability as a design strength.

Two ways of seeing the same material That gap in how the two of them were looking at the same object turned out to be the real finding of the visit. Peter was assessing the samples technically: was the colour accurate, was the application even, would this make a good finished surface. The Fellow was responding to them as a designer: the variation, the evidence of process, the fact that nothing about them looked deliberately controlled was exactly what made them interesting. Neither position was wrong. They were simply asking different questions of the same material.

By the end of the three hours, Peter had a clearer sense of what the Fellow was actually chasing, and the Fellow had a clearer sense of how different that was from the way enamel had traditionally been used in the Australian work she'd seen so far. Peter's own approach to the process had been shaped, understandably, by four decades of clients, equipment and technology, product demand and the established application methods of industrial enamelling, not by any lack of imagination, but because that was what the work itself had always required of him. The Fellow's interest ran the other way: toward the testing process itself, the things normally thrown out because they're considered unsuccessful, and what might happen if that irregularity became the point rather than the flaw.

Looking back, this conversation did more than introduce the Fellow to vitreous enamel's practical limitations. It opened up several questions she carried into the rest of the Fellowship: whether other manufacturers treated colour variation as something to eliminate or something to work with; how differently the same process could be handled depending on the scale, purpose and history of the workshop running it; and, underneath both of these, how she might actually bring this surface treatment into her own design practice. Not every site visited in the course of this research answers all of these questions, but each speaks to at least one of them directly.



Figure 13. Pre-coated signage in Peter Magalotti's workshop, showing edge burnout, where exposed metal edges re-oxidise during successive kiln firings.

The visit also produced the Fellowship's first direct evidence of the scale gap later confirmed at every international site. Peter's workshop, medium in size, hands-on, and reducing in scale and capacity due to diminishing demand for the process, sat at one extreme of what the Fellow would come to think of as the missing middle in the industry. Needing enamelling-grade steel sheet to begin testing the process herself, the Fellow asked Peter where to find it; he pointed her to another vitreous enamelling company, Glassmetal Industries in Geelong, who still imported the material, and that referral was how she first came into contact with Adam Morgan and a larger, industrial scale of enamelling.

An Australian instance of an international pattern

That referral was also, in miniature, the same pattern the Fellow would keep finding internationally: specialist knowledge passed on person to person, simply because no formal channel exists to do it instead. The pattern wasn't something found only overseas. It was already here, just thinner and harder to trace.

Meeting Peter didn't hand the Fellow a single finding. It opened up the questions this Fellowship would go on to test: how production processes and material behaviour shift depending on who is applying enamel and why, what scale of practice might actually support her own design work, and how the industry structures that keep enamel manufacturers viable, or don't, differ from place to place. It was less a conclusion in itself than the real starting point of the research: the moment a general interest in the material's colour, depth and durability became a specific investigation into how vitreous enamel could be reintroduced into contemporary Australian design.

Emaillerie Belge, Brussels

The Fellow's fieldwork began internationally in Brussels with a visit to Emaillerie Belge, the last remaining vitreous enamelling company in the Benelux, and an extended interview and factory tour with its owner, Vincent Vanden Borre. Emaillerie Belge, now operating from a former clothing warehouse in the Forest district of Brussels, presented a case study in how a traditional enamelling business, brought to the brink of closure, could be revived and carried forward into contemporary design and manufacturing.

Emaillerie Belge was founded in 1923 in Molenbeek, growing within its first decade to employ 138 people producing enamelled household goods, signage and advertising panels. By 2016, the business was again close to closure. The factory building had already been sold, and staff numbers had fallen to as few as three. It was at this point that Vincent Vanden Borre, then twenty-five, newly graduated and with no prior knowledge

of the process, took over the company, given just two weeks to decide without the chance to properly review its finances.



Figure 14. The entrance to Emaillerie Belge, Brussels. Photography was not permitted beyond the office, in keeping with the company's privacy and confidentiality requirements.

What Vanden Borre found on taking over was a business with almost nothing formally documented: a client database, a set of invoices, and decades of production knowledge held only in the memories of the few staff who remained. As he put it to the Fellow, "when I bought the company, I didn't buy the machines, I bought the knowledge of the people." He spent his first period working alongside every department in turn before changing anything, summarising his philosophy as "I first developed the people, then the products." Manufacturing at Emaillerie Belge remains almost entirely unautomated, and it is the people, not the process on paper, that Vanden Borre considers the company's real asset.

The factory tour moved through the same stations Vanden Borre once worked in himself when learning the process: metal fabrication, metal

cleaning and preparation, the mixing of enamel colours from raw glass frit, pigment and oxide, a screen-printing room combining a decades-old press with newly installed equipment, and kilns firing steel and enamel together between 750°C and 850°C.



Figure 15. Enamel colour and finish samples on display at Emaillerie Belge, Brussels

Own enamel, own control

Notably, Emaillerie Belge produces its own enamel powder in-house, the only company encountered during the Fellowship, other than Glassmetal Industries, to do so. The factory's layout reflects the scale it now operates at: fabrication, packing and cleaning areas all feeding into a spray booth, since the entire finishing process is spray-applied

rather than hand-applied, a clear point of contrast with the wet-packing and dry-powder techniques seen elsewhere on this Fellowship. The large conveyor-belt kilns reinforce that impression, resembling a powder-coating line far more than a bench or studio kiln.

The everyday work behind the design commissions

Alongside the design-led projects the company has become known for internationally, much of Emaillerie Belge's day-to-day output remains commercial signage and advertising panels, the same kind of work that sustained the business through its earliest decades. Among the panels seen in production during the Fellow's visit were Tintin-branded advertising pieces, a reminder that the factory's regular output is closer to reproducible commercial signage than to the one-off design commissions it is increasingly recognised for.

Design collaboration and experimentation

Vanden Borre described projects in collaboration with designers including Marc Newson that other manufacturers had declined as technically unworkable, in one case requiring around four months of development and roughly €120,000 invested before the first piece could be produced. Asked what determines whether such a project succeeds, he named knowledge, budget and willingness, but was emphatic that willingness mattered most: "creativity has no limits," in his view, and projects fail because people stop pushing, not because a technical ceiling is genuinely reached.

A different position on unpredictability

This same insistence on pushing past accepted limits shaped Vanden Borre's approach to quality. He was critical of the colour-variation tolerances generally accepted across the wider enamelling industry, describing his own approach as identifying and controlling every variable so inconsistency is designed out rather than tolerated. This put Emaillerie Belge at odds with almost every other site visited during this Fellowship, where practitioners consistently described variability between firings as accepted, even valued.

Encountering this contrast directly, rather than reading about it, sharpened the Fellow's own reasoning: the finish at Emaillerie Belge, for all its technical accomplishment, read as closer to powder coating in visual effect than to the handcrafted quality found elsewhere, clarifying by contrast exactly why the Fellow's own practice is drawn toward unpredictability rather than away from it.

Consistency as commercial strategy Consistency of outcome was also the explicit commercial rationale Vanden Borre gave for why designers including Marc Newson and the Belgian design duo Muller Van Severen continue to work with Emaillerie Belge: reproducibility at this level of control is what allows the company to meet commercial demand for furniture-scale editions, something a more variable, artisan-scale process would struggle to guarantee.



Figure 16. Finished enamelled bowls and trays produced at Emaillerie Belge, Brussels, an example of the consistent, repeatable finish the factory produces at commercial scale.

Vanden Borre was noticeably guarded when the interview began, becoming more open as the conversation progressed, a guardedness that tracked closely with his account of having had to reinvent and relearn the company's processes almost from nothing when he took over. He was also visibly curious about which other manufacturers the Fellow had visited, and mentioned he had personally mapped enamel workshops and factories across Europe.

Emaillerie Belge's response to purchasing a business with almost no documented knowledge represents one particular strategy for addressing the succession problem seen across this Fellowship. Rather than working to preserve inherited methods as they were, Vanden Borre approached the process with something closer to a scientist's method: testing systematically, investing significant time and money into pushing his understanding of the process beyond what was generally accepted in the industry as fixed or inevitable, then formalising and recording the resulting processes, formulas and firing schedules that had previously existed only in memory. This

approach serves a specific kind of client: designers and brands seeking enamel's lustrous, hard-wearing finish delivered consistently and repeatably across a production run, rather than as a one-off. Emaillerie Belge demonstrated that industrial-scale consistency and commercial furniture demand are directly linked, but also that this consistency came at the cost of the very unpredictability the Fellow's own practice values, setting up a tension that would recur, differently resolved, at every subsequent site.

Museums

Alongside factory and studio visits, this Fellowship included visits to museum collections holding historical examples of enamel on glass and metal, providing grounding in the material's history that complemented the contemporary practice observed elsewhere. Two museum visits are discussed in this Fellowship: the Murano Glass Museum in Venice, and the Musée des Arts Décoratifs in Paris.

Murano Glass Museum, Venice

The Fellowship's Italian research began in Northern Italy's Veneto region, encompassing Venice and Marghera before extending south to Padua, the setting for the Murano, Incalimi and Alessandra Malfatti visits discussed across this section. Research at the Murano Glass Museum confirmed glass as one of vitreous enamel's original substrates, with enamel painting on glass documented from the late thirteenth century and applied to the island's own Cristallo glass by the sixteenth and seventeenth centuries². The technique reached Venice through trade rather than local invention, carried from Syrian and Egyptian workshops in the Islamic world, where it had flourished in earlier centuries, and adapted by Murano's glassmakers once it arrived³. This application was historically decorative and graphic, fine painted detail in polychrome enamel and gold, distinct from the broader colour-field and textural use of enamel on metal seen elsewhere in this Fellowship.



Figure 17. Footed bowl, crystal glass decorated with spotted enamels and etched gold leaf.



Figure 18. Fragmented conical goblet, decorated with refined enamels, found among the ruins of the San Marco bell tower after its 1902 collapse, Murano Glass Museum, Venice.

Notably, this tradition is no longer commonly practised on Murano island itself: conversations with current glassmakers on the island confirmed that enamel is not used in contemporary Murano glass production, despite its centuries-long documented history there, a useful counterpoint to sites elsewhere in this Fellowship where enamel-on-a-given-substrate is being actively revived. That was not, however, quite the whole story, as a later visit to Incalimi would reveal.

² M. Da Cortà Fumei and C. Squarcina, Museo del Vetro. Murano, Venezia. Guida alla Visita, Fondazione Musei Civici di Venezia, Venice, 2023, pp. 11–43.

³ Q. Adamjee and S. Carboni, 'Enameled and Gilded Glass from Islamic Lands', The Metropolitan Museum of Art [website], 1 October 2002, <https://www.metmuseum.org/essays/enameled-and-gilded-glass-from-islamic-lands>, accessed 20 July 2026.



Figure 19. Mezzega Glass factory a working glass studio on Murano, where enamel decoration is no longer part of contemporary practice.

This gap between historical record and present-day awareness surfaced again, in a smaller way, during the visit itself. Asked whether the collection held any examples of enamel on Murano glass, museum reception staff could not confirm that it did, despite

using a mouse pad printed with an image of the Barovier Cup at the very desk where the question was asked. It was a small but telling reminder, repeated at other points across this Fellowship, that even within institutions built around a material, direct knowledge of it can sit closer to the surface than day-to-day awareness suggests.



Figure 20. The Barovier Cup, attrib. Angelo Barovier, c.1460–1470, blown glass with polychrome enamel and gold, Murano Glass Museum, Venice.



Figure 21. Vessel, milk glass, decorated with mythological scenes in painted on enamel, Murano Glass Museum, Venice.

The collection also holds a set of bowls by Vittorio Toso Borella, a member of one of Murano's historic glassmaking families, dating from 1906–1914. Stylistically distinct from the Barovier Cup, its fluid botanical motifs and ornamental composition reflect the Art Nouveau aesthetic of the period. Yet it employs the same technique of vitreous enamel applied to glass, with water flowers and herons rendered in translucent enamel across a subtly iridescent surface. The work demonstrates how the technique could be adapted to different aesthetic languages, while its connection to a historic glassmaking family also reflects the continuity of specialist knowledge across generations⁴.



Figure 22. Bowls, Vittorio Toso Borella, Murano, 1906–1914, slightly iridescent glass decorated with water flowers and herons in translucent enamel.

Murano gave the Fellow her first real grounding in vitreous enamel's history on a substrate outside metal, glass, with its own centuries-long relationship to enamel quite distinct from the steel and copper traditions studied at most other sites. That grounding in material history became a

reference point she carried through the rest of her international research, shaping how she read and questioned every manufacturer and workshop that followed.

Incalmi, Marghera, Italy

The Fellow's route to Incalmi began through a personal connection: Milan-based designer Valentina Cameranesi Sgroi, whom the Fellow met during a visit to Melbourne in early 2025. Having followed Cameranesi Sgroi's copper-enamel work, the Fellow asked directly where and with whom she produced it, which led to Incalmi, knowledge of who does this work at all travelling through designer networks rather than being easy to find independently.



Figure 23. Pattern, colour and texture enamel tests, developed for designer collaborations including Valentina Cameranesi Sgroi, Incalmi.

⁴ Da Cortà Fumei and Squarcina, Museo del Vetro. Guida alla Visita, pp. 100–104.

Incalmi is a Venetian research, design and product development company founded in 2015 by Patrizia Mian, Gianluca Zanella and Alessandra Zennaro, based in Marghera on the mainland opposite Murano. Rather than manufacturing a single product line, the company operates as a multidisciplinary design and production partner, drawing on an extensive network of specialist artisans across Italy for international luxury brands, architects and designers.



Figure 24. The building housing Incalmi, Marghera.

Incalmi sits in the space Australia's enamel industry does not have. Where Australian practice splits sharply between small-scale artisanal jewellery work and large-scale industrial application, with almost nothing between, Incalmi works at exactly the scale the Fellow's own practice occupies: furniture, lighting, architectural surfaces and collectible objects. Their current technical limit for a single piece is approximately 450 x 450mm, and Patrizia Mian expressed interest in collaborating to test larger dimensions. Scale remains an area of active experimentation, not a fixed ceiling.

Incalmi's revival of vitreous enamel is recent, only around five years old at the time of the visit,

beginning when major clients began enquiring about the process. To build capability, Incalmi initially engaged a professor from the university where celebrated Italian enamellist Paolo De Poli studied, then were directed toward Rebecca Di Filippo (Rebecca D. Enamel), a Milan-based master artisan in vitreous enamel and Roman micromosaic jewellery. The two technicians who now run Incalmi's enamel workshop learnt the foundational technique directly from Rebecca, meaning the knowledge underpinning Incalmi's mid-to-industrial-scale practice was transferred down from small-scale jewellery enamelling, then adapted and experimented with as they scaled up.



Figure 25. The original kiln Incalmi used when first learning vitreous enamelling, Marghera.

Incalmi's connection to Murano runs deeper than the company's name: Patrizia Mian and Giulia Rioda both grew up on the island, within families tied to its glassmaking history. In recent years, Incalmi has extended its enamel research back onto glass itself, working with a master craftsman at a historic Murano furnace to produce the Campi collection⁵, decorated with

⁵ Incalmi, 'Enamel on Glass: a Modern Design Technique', Incalmi [website], 2022, <https://www.incalmi.com/en/culture/the-enamel-on-glass-today>, accessed 1 August 2026.

flatter, more graphic enamel painting than the fine detail seen in earlier work such as the Barovier Cup. Firing remains genuinely uncertain: the glass is decorated cold, then fired for around eight hours at roughly 800°C, with no guarantee of the result. That Incalmi is now among the very few reviving enamel on glass at all, on the island where the Fellow had just been told the technique had disappeared, felt like a direct answer to a question this research had only just started asking.



Figure 26. The Campi collection, Murano glass vases decorated with enamel, Incalmi.

Incalmi works primarily on copper, hammered and worked as thin sheets before enamelling begins. This metal forming and fabrication is outsourced to a network of specialist suppliers, with Incalmi itself focused on the enamel surface finish process. They have recently begun experimenting with substrates beyond copper, including iron and stainless steel, and these new substrates currently require a wet-formula application rather than Incalmi's usual powder method, a technique closer to the small-scale jewellery enamelling technique Rebecca originally taught them.



Figure 27. Copper base forms, prior to preparation for enamelling, Incalmi, Marghera.



Figure 28. Copper tabletop substrate in the pickle solution, removing firescale and oxides before degreasing and enamelling.

Substrate change, in other words, doesn't simply swap materials: it requires review and development of process, adjusting technique for scale.

During the visit, Incalmi had recently received feedback from Hermès on submitted samples for a commissioned vase, indicating that the level of inconsistency in the enamel finish was too pronounced for the brand's requirements. This feedback pointed to a broader tension encountered repeatedly across this Fellowship: how much variation a genuinely handmade surface can retain once it enters commercial-scale production, and how different application methods can be used to reduce that variability. This example represents one of the strongest pieces of commercial evidence identified during this Fellowship for the argument that vitreous enamel's unpredictability functions as a strength rather than a flaw, while also showing, in the same instance, the real commercial pressure to minimise it once volume and a client's lack of familiarity with the process are involved.



Figure 29. Giulia Riorda finishing the edges of the Hermès vases, Incalmi.



Figure 30. Hermès sample vases, Incalmi, Marghera.

This difference in outcome can be linked directly to a difference in application method, itself a legacy of scale. Incalmi's technique, inherited from small-scale jewellery practice via Rebecca Di Filippo, relies primarily on dry powder application (dry sifting), in which enamel powder is dusted onto the piece without a liquid carrier; coverage and thickness are comparatively difficult to control with precision, and this variability carries through into the fired result. Emaillerie Belge's industrial process, by contrast, is built around a wet spray technique: enamel frit is mixed with water, clay and additives into a liquid slip or slurry, then applied evenly using a conventional or specialised spray gun. This wet, sprayed application allows for significantly greater consistency of coverage and, in turn, a more controllable and repeatable fired result. The contrast between Incalmi's Hermès feedback and Vanden Borre's near-zero tolerance for variation is therefore not simply a difference in philosophy. It is also, at least in part, a direct consequence of which application method each company's scale of practice was built around.

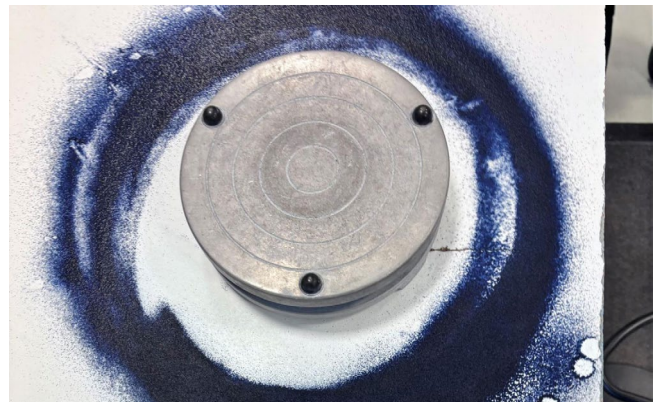


Figure 31. Leftover enamel powder after application, and the spinning table used to help achieve even coverage, Incalmi.



Figure 32. The enamelling workbench at Incalmi, with the simple mesh tools used to apply enamel powder.

Giulia Rioda, who leads Incalmi's enamel workshop, did not come from a traditional enamel or jewellery background. She came from makeup, identifying colour knowledge as the transferable skill that carried across. More broadly, Patrizia Mian described a working method built around responding to the unexpected: even an apparently identical process and colour combination can produce different results, and the team treats this as a prompt for testing rather than failure. A collaboration on a complex three-dimensional form illustrates this directly: welding difficulties had to be solved through testing before enamelling could even begin, meaning the design brief itself generated new technical knowledge.



Figure 33. Complex three-dimensional enamelled forms, Incalmi, whose welding required extensive testing before enamelling could begin.



Figure 34. Colour tests and observations for the 3D forms.

Incalmi's work refurbishing interiors at Villa Medici in Rome, using enamelled copper tiles fixed permanently to the wall, raised a practical problem: what happens to the tiles if the wall is later altered. This unglamorous problem led directly to Maniera, a modular, non-invasive cladding system of enamelled copper tiles that can be removed, rearranged and reused rather than destroyed with the wall, a clear example of enamel research moving from a single bespoke commission into a repeatable, architectural-scale product⁶.



Figure 35. A Maniera tile being removed, showing the fastening mechanism that allows Incalmi's enamelled copper cladding system to be rearranged and reused rather than fixed permanently to a wall.

⁶ Incalmi, 'Valentina Cameranesi: Combining Ceramic and Enamel on Copper', Incalmi [website], 2022, <https://www.incalmi.com/en/culture/interview-with-valentina-cameranesi>, accessed 7 August 2026.



Figure 36. *Maniera*, Incalmi's modular, enamelled copper cladding system, developed to be removed, rearranged and reused rather than fixed permanently to a wall.

Visiting Incalmi was, in the Fellow's own account, a major highlight of the research trip: the scale of the business and the designers they collaborate with aligned closely with the scale of object the Fellow is interested in making. The hospitality extended well beyond a standard factory visit: the Fellow spent part of a second day in Incalmi's office, pulling books on enamelling from the company's shelves and discussing the process directly with research and development lead Gianluca Zanella. What stayed with the Fellow most was not a specific technique but Incalmi's attitude toward learning itself: a willingness to take on a technique they didn't yet know, seek out the people who held that knowledge, and gradually build their own method.

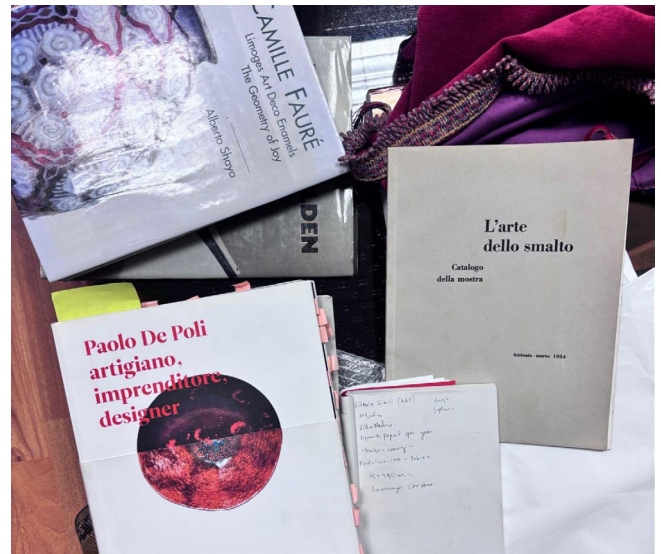


Figure 37. Books on enamelling in Incalmi's office, Marghera.

Incalmi demonstrated that the "missing middle" scale identified in Australia is not a fixed feature of enamel practice but a gap that can be actively built, given the right combination of technical knowledge, design collaboration and sustained client demand. It also showed that this intersection of industrial and artisan scale can generate real commercial value from the same material unpredictability that other manufacturers work hard to eliminate, evidence that the design opportunities sitting between these two scales are not merely theoretical, but already being tested and proven in practice.



Figure 38. *Mangiafuoco* side table, designed by Zanellato/Bortotto for Moroso, enamel top produced by Incalmi, a commercially available example of the missing middle this Fellowship set out to investigate.

Alessandra Malfatti, Padua, Italy

The Fellow's visit to Alessandra Malfatti's Padua studio was brief relative to other stops on this Fellowship, but produced some of the clearest first-hand evidence gathered anywhere in the research for the small, informally connected nature of the international vitreous enamel community. Malfatti trained at the goldsmith school of the Istituto Selvatico in Padua before opening her own studio in 2016, drawn to the material by the work of fellow Paduan artist Paolo De Poli.

When the Fellow mentioned during the visit that Incalmi's enamel technicians had been consulted earlier in the Fellowship, Malfatti's assistant immediately recognised the connection: both studios' technicians had learned foundational technique from the same source, Rebecca Di Filippo, and both used the same English-brand enamel on her recommendation. The Fellow had, without planning to, traced a single line of knowledge transfer running from one specialist jewellery enamellist through to two separate studios visited independently, weeks apart, in different cities.



Figure 39. Alessandra Malfatti applying pigmented enamel powder to copper forms.

Alongside restoration and decorative work, one of Malfatti's principal, long-standing income streams is a collaboration with Italian furniture brand Paola Lenti, for whom she produces enamelled copper tabletops in the brand's own exclusive colourways, for both outdoor and indoor furniture. This is a working, present-day example of exactly the model this Fellowship set out to investigate: an artisan-scale enamel practice sustaining itself commercially through an ongoing relationship with an internationally recognised design brand, producing furniture-scale objects rather than jewellery or one-off restoration work alone.

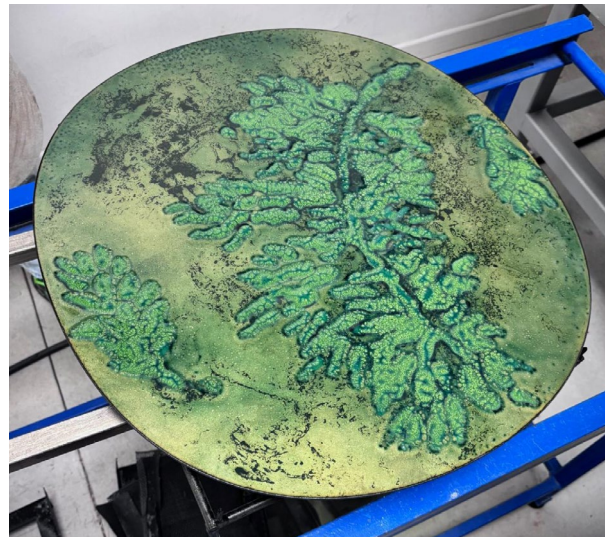


Figure 40. A freshly fired tabletop for Paola Lenti, the furniture brand Malfatti has worked with for many years.



Figure 41. Experimental finishes and colour tests on copper and copper mesh, demonstrating the range of effects being pushed beyond standard technique.

Malfatti's studio and Incalmi operate at a broadly comparable physical scale. Malfatti's kiln handles pieces up to roughly 50 x 50cm, close to Incalmi's stated 45 x 45cm limit, despite Incalmi operating as an eight-person multidisciplinary design company working with international luxury brands, and Malfatti's studio being a small, largely three-person operation.



Figure 42. An assistant placing a freshly powdered tabletop into the kiln.



Figure 43. Alessandra Malfatti removing the tabletop from the kiln minutes later to inspect the fired surface.

The first thing the Fellow saw on arriving at Malfatti's studio was a small private collection of Paolo De Poli and Gio Ponti enamel vessels, in for restoration. The Fellow was already closely familiar with this collaboration before the Fellowship began. De Poli's work with architect and designer Gio Ponti was one of the original reference points that drew her research toward vitreous enamel, and encountering the objects in person, rather than in photographs, offered a direct example of exactly the kind of relationship this report identifies as central to its findings: a designer working closely with a specialist enamelling artisan, at a scale of object closely aligned with the furniture and collectible design the Fellow's own practice is built around.



Figure 44. Signature and maker's stamp on the base of a Paolo De Poli and Gio Ponti vessel.



Figure 45. Paolo De Poli and Gio Ponti enamel bowls, in for restoration.

Discussing the restoration also revealed how enamelling materials themselves have changed over time: De Poli's originals used lead-based enamel, which Malfatti's studio does not use today, on toxicity grounds. The difference is visible in the objects themselves: lead-based enamel produces a noticeably more lustrous, glossy finish than its lead-free equivalent, a quality difficult to fully replicate under current safety standards.

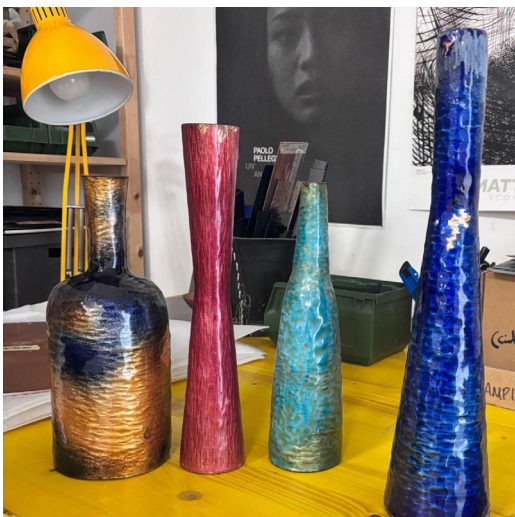


Figure 46. Paolo De Poli and Gio Ponti enamel vessels, in for restoration.

Malfatti's studio was also the clearest place in this Fellowship to observe metal forming as a distinct craft in its own right, carried out in-house rather than outsourced. Many of the tools used there are old, sourced from other retired metalworkers and enamellists rather than bought new, some over fifty years old, pointing to a gap in the supply chain not previously considered during this Fellowship: not only enamelling materials and expertise, but the specialist hand tools required to shape metal by hand at all, many of which are no longer manufactured.

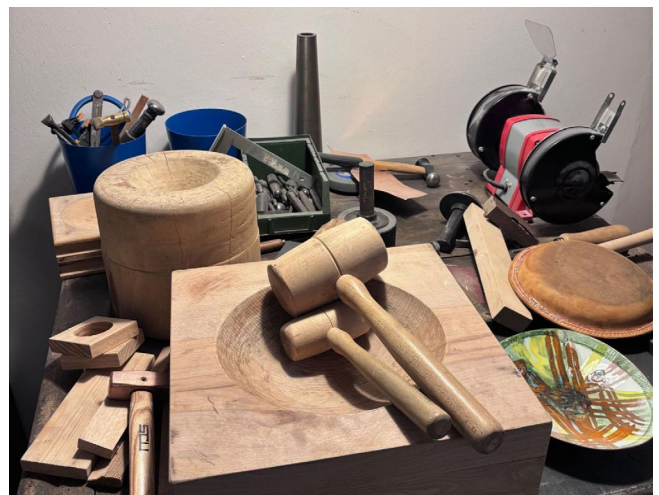


Figure 47. Traditional timber dishing/forming hammers used to shape copper sheet into shallow bowl and dish forms prior to enamelling.



Figure 48. Metal-forming tools in timber and steel, over fifty years old.

Malfatti's studio proved that this mid-scale model isn't speculative. It already exists and is already commercially viable, an artisan-scale practice sustained by a long-standing relationship with an international furniture brand. It offered the clearest, most direct evidence yet that vitreous enamel can hold its own within contemporary design and furniture, at exactly the scale the Fellow is working to bring into her own practice.



Ranieri, Terzigno (Naples)

From Veneto, the Fellowship's Italian research moved south to Campania, where lava stone had surfaced repeatedly during earlier research as an unexpected substrate for glass-based surface treatments, prompting a day trip from Naples to Ranieri, a family-owned company on the slopes of Mount Vesuvius. Lava stone is volcanic rock formed from cooled lava; unlike most natural stone, it can withstand the extremely high firing temperatures vitreous enamel requires, allowing glaze to be permanently fused to its surface rather than sitting on top of it as a superficial coating. The Fellow spent the visit with design technician Sara Martín Mazorra, who introduced the wider team and walked through both the company's headquarters and its main processing factory.



Figure 49. Raw lava stone tile samples in a range of shapes, formats and surface finishes.

Ranieri was of particular interest for a further reason. Alongside its architectural and interior work, the company has built a reputation for collaborating directly with furniture and product designers, increasingly developing design-led projects in-house rather than only producing to a fixed external brief. This matched a specific interest running through this Fellowship: not only the technical process of applying vitreous enamel to a new substrate, but how a specialist manufacturer works directly with designers to develop genuinely new applications, an open conversation the Fellow was keen to have with the Ranieri team, in the same way this research had sought out that relationship at other manufacturers.



Figure 50. *Core*, a Ranieri collection designed by Francesco Meda and David Lopez Quincoces, described by the studio as "a return to the essential - a celebration of matter in its purest form."

Substrate: a material that dictates its own process

What first appeared to be different colours were, in many cases, the result of changing the surface treatment or glaze formulation applied to the same underlying stone, rather than a change in pigment alone, reinforcing, from a completely different substrate, the same conclusion the Fellow had already begun forming from the metal-based sites.



Figure 51. A selection of Ranieri's enamel surface finishes and colourways.

The factory visit made this concrete: raw lava stone arrives in large blocks, milled and cut into slabs before glaze is sprayed on and the pieces fired in ceramic-style kilns, a hybrid vitreous and ceramic glazing process, distinct from the more conventional enamelling seen at every other site on this Fellowship.



Figure 52. A raw block of lava stone in the format delivered from the quarry to Ranieri's treatment factory.



Figure 53. A raw lava stone block being wet-sawn into slab format.

The most significant difference from metal enamelling is what happens before firing: where steel or copper can be cut, folded and shaped before enamel is applied, lava stone begins as a solid block or slab that is carved or milled, with the material itself dictating the geometry available to the designer.



Figure 54. Lava stone blocks subtracted and shaped in preparation for an upcoming exhibition.

Ranieri's approach to firing offers a genuinely new position in the control-versus-unpredictability question this Fellowship keeps returning to. Rather than eliminating variability, embracing it as historical precedent, or valuing it after the fact, Ranieri deliberately designs for it: multiple firing cycles and reactive enamel layers are used specifically to produce crackling, iridescence and unpredictable colour movement as intended outcomes, not defects. This extends to how the material itself is treated: thinner, translucent layers keep the lava stone's natural variation visible beneath the glass surface, rather than masking it.



Figure 55. Ranieri's vitreous enamel colour sampling space.



Figure 56. Tabletops being sprayed with wet enamel.

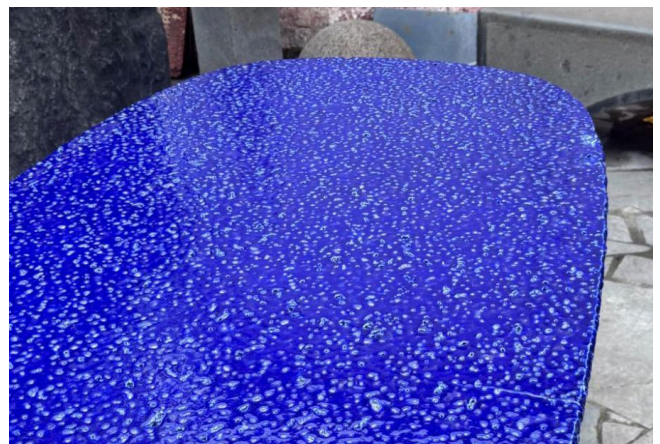


Figure 57. A freshly fired tabletop showing its bright enamel finish straight out of the kiln.

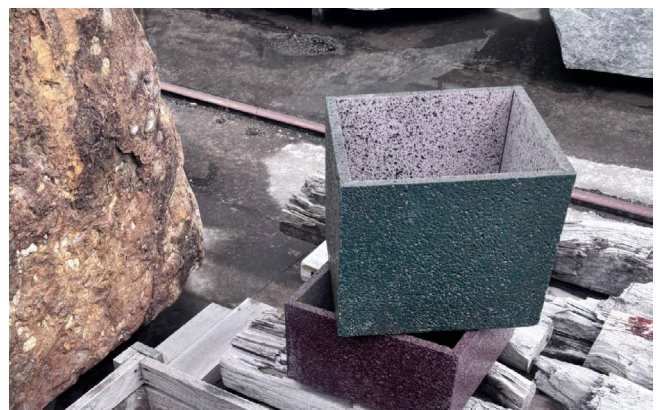


Figure 58. Samples from an experimental process forming 3D shapes from lava stone slabs, enamelled on the exterior while the raw stone is left exposed inside.

Ranieri operates as a small team working closely across material development, technical process and design, rather than maintaining a strict division between design studio and production facility. That structure sits alongside more than a century of family expertise working with Vesuvian lava stone, combined with the capacity to deliver large architectural-scale commissions, a business that has not resolved the craft-versus-industry tension by picking a side, but has built its commercial model directly on top of it.



Figure 59. Enamelled panels installed as an artwork in Ranieri's office, demonstrating the artisanal textures and finishes achievable with the process.

Ranieri showed that substrate actively shapes both process and design outcome, and that a single hybrid vitreous and ceramic system can operate credibly at both architectural and furniture scale, producing controlled variation as a deliberate design feature, not a defect to correct.

Milan Design Week 2026

Milan Design Week was not part of the original Fellowship itinerary. The trip was extended after two manufacturers visited during the Fellowship, Incalmi and Ranieri, confirmed they would launch new collections at the fair. Attending provided an opportunity to follow these projects from their

development in the workshop through to their public presentation, approximately four weeks later.

A further significance was the external validation of the Fellowship's research. The companies and artisans were identified through independent research, introductions and referrals, rather than an established international list of leading vitreous enamel practitioners. Discovering that Incalmi and Ranieri were both preparing work for one of the world's leading design events provided independent confirmation of their relevance and of the Fellowship's direction.



Figure 60. Specola Plates by Incalmi, created in collaboration with Giorgia Zanellato and Daniele Bortotto, presented within Artemest's L'Appartamento exhibition during Milan Design Week 2026.

Most visitors to Milan Design Week encounter finished objects: resolved, presented and ready to be photographed. The Fellow had already seen these works in development, including testing, failed samples and material challenges. Seeing

the same pieces reach their final form weeks later, before an international audience, provided a fuller understanding of their development than either stage could offer alone.

Incalmi at Milan

Two projects demonstrated this most clearly. At Manifesto Project, Studiopepe's *The Intimacy* incorporated enamelled copper components the Fellow had seen at Incalmi's workshop a month earlier, transforming the material from a decorative element into part of the room's atmosphere. At Artemest's *L'Appartamento*, Zanellato/Bortotto's *Specola Plates* presented 72 handcrafted enamelled copper plates as an abstract constellation across the wall. The series references celestial charts and star formations, while its name recalls *La Specola* in Padua and the mid-century Italian enamel tradition associated with artists such as Paolo de Poli. The intense colour and surface character result from the copper being fired at high temperatures.



Figure 61. *The Specola Plates* by Incalmi, created in collaboration with designers Giorgia Zanellato and Daniele Bortotto, debuted at Milan Design Week 2026.



Figure 62. Studiopepe's *The Intimacy* at Manifesto Project, featuring enamelled copper vessels produced by Incalmi.

Ranieri's Void

Ranieri presented Mario Milana's *Void* coffee-table system at Casa Milana, the designer's home and studio in Milan's Brera district. Comprising two modular forms, the collection uses glazed lava stone, with its translucent surface revealing the stone's geological character. Its domestic presentation reinforced the system's function as adaptable furniture rather than a purely sculptural object. While the process uses ceramic glaze on stone rather than enamel on metal, it shares key characteristics with the Fellowship's substrate research: glass fused through firing, colour developed across multiple firings, and a surface integrated with the underlying material.

These projects changed how the Fellow framed the research. Before Milan, the central concern was how to preserve a specialised process at risk of disappearing. Seeing these processes realised in finished, exhibited and commercially successful work shifted the focus from preservation to application: how vitreous enamel can continue to evolve through contemporary design.

Milan provided tangible evidence that vitreous enamel and related glass-based surface processes already occupy a contemporary design context. The work encountered there demonstrated that their relevance depends not on preserving established methods, but on continuing to test, adapt and apply them in new contexts.

Glassmetal Industries, Geelong

Glassmetal Industries was the starting point for this research, though its significance was not apparent at the time. Peter Magalotti referred the Fellow to the company as a supplier of enamelling-grade steel sheet for initial testing. The introduction established a relationship with Adam Morgan and Glassmetal that continued throughout the Fellowship and grew into a commercial collaboration.



Figure 63. Glassmetal Industries, Geelong.

Initial conversations revealed a distinct form of Australian enamel practice. Glassmetal operates at industrial scale, producing enamelled components for signage, public infrastructure, streets, prisons and telegraph poles, and has extensive experience delivering public art projects that require artists to remain directly involved in fabrication. The potential for collaboration was clear, but the Fellow lacked the technical knowledge to define what it could involve.

Visits to workshops in France, Belgium and Italy gave the Fellow a practical understanding of colour development, firing behaviour, surface treatments and application methods. This knowledge provided a basis for comparing approaches to industrial enamelling and identifying where Glassmetal could support further experimentation.

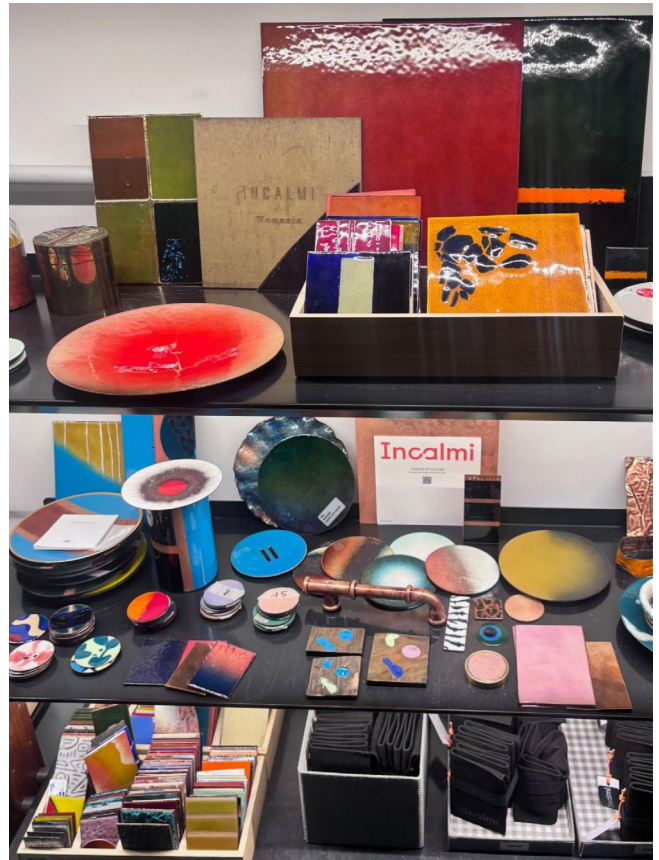


Figure 64. Sample library at Incalmi, showing textures, colour combinations and reference material.

The contrast with Emaillerie Belge was instructive. Both operate industrial steel-enamelling facilities of comparable scale, yet their approaches diverge: Emaillerie Belge prioritises consistency and repeatability, while Glassmetal showed greater openness to testing new approaches. The comparison demonstrated that industrial production need not standardise its creative process - existing infrastructure can equally support experimentation.

Powerhouse Made This approach was tested through an invitation to develop a commercial product for Powerhouse Made, the Powerhouse Museum's retail program. The project marked a shift from documenting and analysing enamel processes to applying the knowledge gained through the Fellowship.

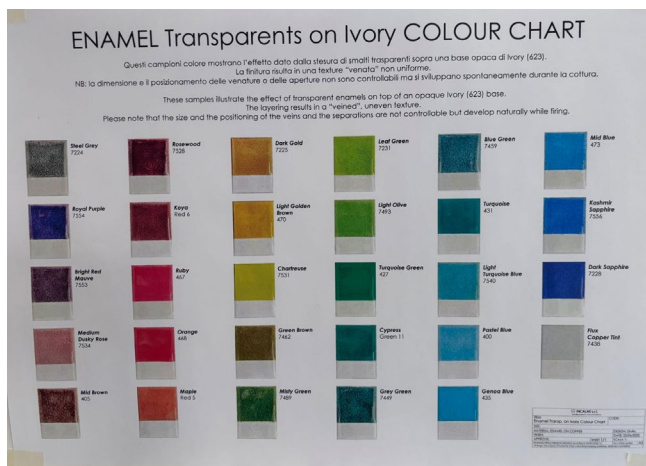


Figure 65. Custom colour charts developed by Incalmi, Marghera.



Figure 66. The enamelling text recommended by Alessandra Malfatti as the “bible” of vitreous enamelling technique.

Glassmetal's established work typically uses block colour and prioritises durability for signage and architectural applications. Powerhouse Made required a different surface treatment, drawing on the layered, textured and tonally varied finishes the Fellow had documented overseas. Working directly with Adam and the Glassmetal team, the Fellow translated these references into practical specifications, including colour test charts based on a method first encountered at Incalmi - allowing the team to work from defined colours, finishes and application methods rather than subjective description.

The project combined Glassmetal's existing equipment and industrial expertise with the Fellow's direct involvement in surface development. Producing the piece at commercial quantity, rather than as a one-off, tested how industrial production and hand-developed surface treatments could operate together in practice.



Figure 67. Test vase with a white undercoat and ombré effect, alongside the measuring and mixing of enamel pigment.

Glassmetal's history situates the collaboration in a broader context. The company traces its origins to 1890, when Francis Newberry established an enamelling works in Geelong West; it later became Glassmetal and was acquired by Geoff and Annie Morgan in the early 1980s, and remains family-run. This longevity of specialist enamel knowledge within Australian manufacturing parallels the family- and small-team-based knowledge networks encountered throughout the Fellowship in Europe.⁷

The relationship with Glassmetal also demonstrates the cumulative value of the Fellowship. A referral that initially provided access to raw material developed, through the knowledge gained across international workshops, into a commercial collaboration. The Powerhouse Made project demonstrated that Glassmetal's industrial capacity can accommodate design-led experimentation and that these approaches can operate together within an established manufacturing business.



Figure 68. Custom and stock colour samples used to review colour choices for the vessel.

Glassmetal became both the starting point and a practical outcome of the Fellowship. The collaboration demonstrated that industrial enamel production and experimental, design-led surface development are not competing models but can be integrated through direct collaboration, shared technical knowledge and commercial production.



Figure 69. Smaller kiln suited to firing the Powerhouse Made vase.

⁷ Glassmetal Industries, 'Glassmetal Industries: Home Page', Glassmetal Industries [website], <https://www.glassmetal.com.au/>, accessed 10 August 2026.



Figure 70. Telstra pole signage - one of the enamelled products Glassmetal has produced in quantities exceeding four million.



Figure 71. Coloured pigments for the vitreous enamel mix.



Figure 72. Ceramic balls and jars used to grind flux and pigment into liquid enamel.



Figure 73. Glass shards for the vitreous enamel mix.



Figure 74. The Powerhouse Made vase, its base built from a blue enamel undercoat.



Figure 75. Enamora vase, Set up small air brush gun (purchased specifically for the project) to test gradients and layering of wet Vitreous Enamel.



Figure 76. Enamora vase, Testing large spray gun and how we could combine the two application techniques to achieve desired finish.

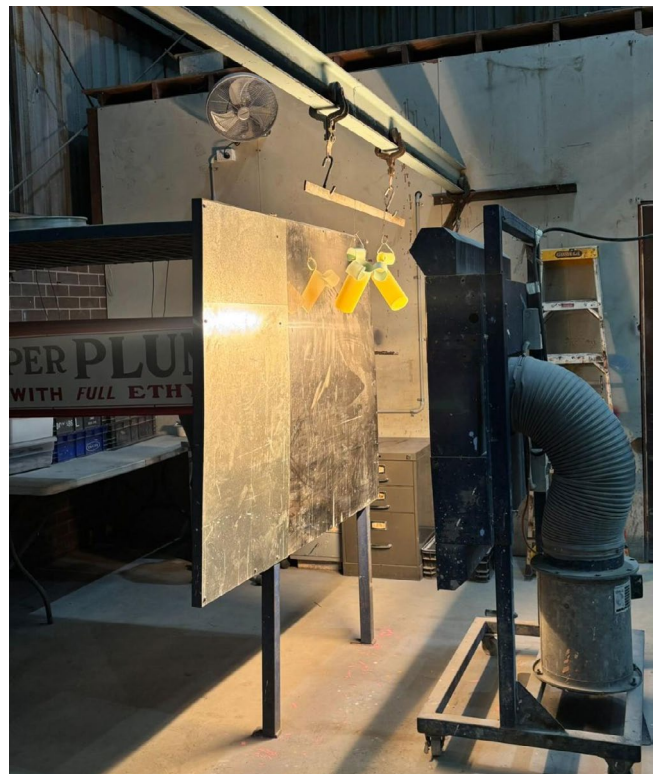


Figure 77. Enamora vase, under heat lamp to dry prior to firing.



Figure 78. Enamora vase, Post drying, ready for Kiln.



Figure 79. Enamora vase, Entering Kiln for 750 degree celsius firing for 15 minutes.



Figure 80. Enamora vase, showing a successful firing and application test - the black undercoat breaking through at the edges to create a "pixelated" effect that celebrates the natural variation of vitreous enamel.



Figure 81. Enamora vases, post firing. Reviewing against colour chips in the factory's lab.



Figure 82. Enamora vase, successful test pieces, photographed on the drive back to Melbourne after a third full day at the Glassmetal Industries factory.

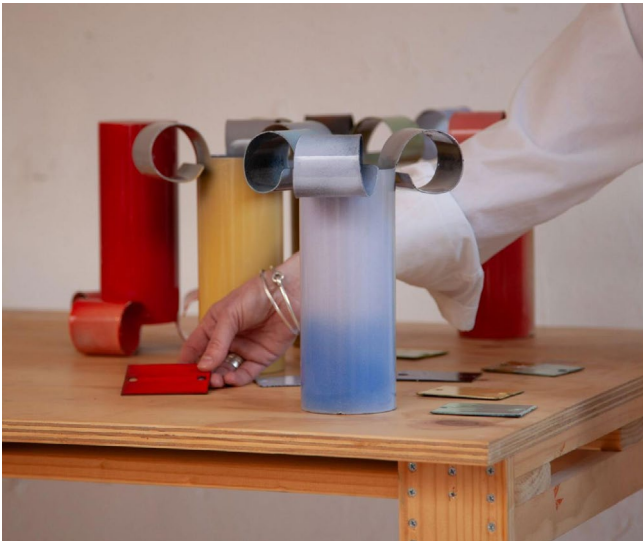


Figure 83. Enamora vase, Tests in the studio looking at and comparing with the colours I made small sample chips of.



Figure 84. Enamora vase, Tests in the studio looking at and comparing with the colours I made small sample chips of.

06

Personal, professional, and sectoral Impact

Personal Impact

This Fellowship changed more than the Fellow's technical understanding of vitreous enamel. It strengthened how she builds and sustains professional relationships internationally, deepened her understanding of the material itself, and ultimately changed how she understands her own authority as a designer within a field she set out simply to learn from.

Initiating contact with international specialists and manufacturers, and moving between workshops and factories across several countries, strengthened her ability to engage directly, and as a peer, with people who held decades more technical experience than her. She came to understand these relationships as genuinely two-way: she drew on specialist knowledge while bringing her own design perspective into the room. The Fellowship also strengthened her willingness to pursue opportunities without a guaranteed outcome; returning to a practitioner or company more than once consistently produced deeper professional relationships than a single visit could.

The clearest shift in how she understood enamel itself happened early, at Peter Magalotti's workshop, before any international travel had begun. Shown a set of colour test samples Magalotti considered imperfect, she found herself drawn to the opposite qualities: variation,

irregularity, the visible evidence of process. This became the lens she carried into every subsequent visit, quietly reframing her research direction. What began as a concern with preserving a specialist, declining technique became a stronger interest in how it might evolve in new hands, contexts and applications - closer to a viable commercial and design direction than a purely historical one. By the time she reached Milan Design Week and recognised, in finished and exhibited form, work she had watched taking shape on factory floors weeks earlier, made by practitioners she had sought out independently, that shift felt confirmed rather than theorised: evidence that the direction she had committed her practice to had genuine relevance and commercial application well beyond her own studio.

The Fellowship also demonstrated a model for building her practice's network and technical knowledge going forward. Much of what she learned came not from formal instruction but from time spent with individual practitioners in conversation and observation — a relationship-led approach to research and development she now recognises as directly transferable to how she sources collaborators, tests new techniques and builds supplier relationships within her own business. Seeing the Paolo De Poli and Gio Ponti collection at Alessandra Malfatti's studio - work central to her design references before the

Fellowship began - reinforced the design language her practice is built around, and gave her a direct, professional understanding of the material's history and capability that prior research from a distance had not provided.

The Fellowship also changed how she designs. Where she previously developed an object and considered its finish afterwards, she now knows that substrate, scale, kiln dimensions, application method, firing and surface development shape what form is even possible - and designs with the process in mind from the outset, rather than applying a finish to a form already decided.

The deeper shift, though, was in how she understands her own research and her own authority within it. She began the Fellowship concerned with preserving a specialist, disappearing technique. She finished it with something stronger: the confidence not only to work alongside manufacturers with decades more experience than her, but to question established ways of working, propose alternatives of her own, and expand her practice and business around that judgement. She returned to Australia with that confidence intact - the clearest measure of her growth as a designer through this Fellowship, from someone who arrived to learn an unfamiliar industrial process and material to someone equipped to push both beyond their established boundaries, adding lasting value to Australian design and manufacturing history.

Professional Impact

Professionally, the Fellowship has translated into new technical capability, an expanding network of manufacturer relationships and, most concretely, a live commercial project. Each builds directly on the Fellowship's research and is discussed in turn below, beginning with the clearest example: a vase developed for the Powerhouse Museum's design shop in Sydney, produced in commercial partnership with Glassmetal Industries and made possible by the research, relationships and knowledge gathered over the course of the Fellowship.

Part of the brief required the design to reference the Powerhouse's own collection. Researching the museum's enamel holdings, the Fellow found herself drawn to both ends of the scale this Fellowship has investigated: early twentieth-century enamelware - jugs and hot water cans - produced at industrial scale, and smaller decorative pieces, including badges, jewellery and belt buckles, representing the artisan, jewellery-scale end of the craft. Both ends of that spectrum fed directly into the final design, named Enamora: a single laser-cut sheet of stainless steel, rolled, welded and finished by hand, then enamelled and fired at Glassmetal. Its exaggerated, sculptural curl references the industrial enamelware, while its three colourways are drawn directly from waratah, wattle and pittosporum seed pod motifs found on enamelled belt buckles in the collection, dating from around 1910.

Engaging Glassmetal Industries had, until this point, been difficult for a different reason. As a commercial operation, they require a high enough unit count to make a commission viable - precisely the barrier this Fellowship identified as part of what keeps Australia's industrial and artisan enamel scales apart. The Powerhouse Made brief resolved that barrier: the volume required made the project commercially worthwhile for Glassmetal, giving the Fellow, in a live commercial context, exactly what this Fellowship set out to achieve - a genuine middle scale between industrial enamelling and small-scale artisan practice. The bespoke surface finishing is being carried out by the Fellow herself, working inside Glassmetal's facility: the first time she has fabricated the finished surface of a commercially produced object, rather than designing it and handing production entirely to a manufacturer.

Enamora Vase will be sold through the Powerhouse Museum's retail shop called Powerhouse Made with an accompanying product information booklet describing the enamelling process and the specific collection pieces it references - extending the object itself into a public explanation of the material and its history, reaching an audience well beyond the design and craft community this Fellowship has otherwise engaged.

This project also clarified a working model the Fellow can carry into future commissions: an industrial manufacturer handling base production at commercial scale, while she personally applies the finishing surface - maintaining creative authorship over the object's most expressive quality while relying on the manufacturer for production capacity her own studio lacks.

The Fellow also now carries specific, transferable technical tools she lacked before the Fellowship. Colour test charts, a documentation method learned at Incalmi, allowed her to brief Glassmetal on the exact application technique and colours she wanted for the Powerhouse Made piece, rather than describing an effect from memory. A working understanding of the practical difference between dry powder and wet spray application - and how that choice shapes consistency and control - gives her a far more precise vocabulary for briefing manufacturers, and a clearer technical grasp of the industrial enamelling process, sufficient to design for it and select base materials suited to how the process behaves.

The relationships built during the Fellowship have also positioned the Fellow within an active international network of manufacturers and artisans. Incalmi and the Fellow now maintain an open dialogue, with a standing invitation to collaborate once project funding is secured - a relationship she believes was possible only through meeting the team in person, given how closely Incalmi works with the designers it produces for. A design proposal has also been put to Ranieri, who remain open to a future project once timing and funding align; she was the first person from Australia to visit the company, and her curiosity about, and respect for, its lava-stone shaping process appears to have left a genuine impression. Neither relationship has yet produced a second commissioned outcome, but both remain live, open channels for future collaboration rather than closed contacts from a single visit.

The Fellow's research has continued beyond the formal Fellowship period. She has since purchased a small table kiln for her studio and continues to build her technical grounding through Ninette Dutton's *The Beautiful Art of Enameling*⁸ and video demonstrations - deliberately extending the self-directed, practical learning that shaped the Fellowship itself.

This growing network and ongoing development have also begun to shape how the Fellow shares knowledge. Early conversations are underway with RMIT to deliver a guest talk to interior and furniture design students on her findings, the material's history, and its potential contemporary applications. A separate conversation is underway with Craft Victoria, who are already familiar with the Fellowship and interested in discussing workshops, talks and a possible exhibition, subject to scheduling.

Sectoral Impact

At a sectoral level, the Fellowship is already contributing to the visibility of vitreous enamel within contemporary Australian design. Enamora, the vase developed for Powerhouse Made, puts a commercially produced, enamelled object in front of a general public audience through one of the country's major cultural institutions, accompanied by an information booklet that explains the process and the specific Powerhouse collection pieces it draws on. This is not a demonstration piece: it is a retail product, sold at volume, that carries this Fellowship's central argument directly to the public without requiring a visit to a workshop or a reading of this report.

This matters because the gaps this Fellowship identified in the Australian sector are not abstract: firing and application knowledge held by a shrinking number of practitioners with no clear way to pass it on; little to no enamelling taught in design or jewellery courses; no established way for designers and manufacturers to find and commission each other; and the missing middle between industrial

8 N. Dutton, *The Beautiful Art of Enameling*, Thomas Y. Crowell, New York, 1966.

and artisan-scale production. Enamora addresses the last of these directly, and the RMIT and Craft Victoria conversations, alongside the ongoing relationship with Glassmetal, speak to the others.

These emerging Australian partnerships mirror the working models observed at Incalmi, Malfatti and Ranieri, where close relationships between designers, artisans and manufacturers kept the craft commercially active rather than confined to the past. The lesson from those sites was not that Australia lacks the raw ingredients for this - it has working manufacturers and a small but genuine design interest - but that nothing currently connects them in a repeatable way.

The international research has also shaped how the Fellow thinks about knowledge-sharing itself. Much of what she learned overseas came through informal mentorship and hands-on time with practitioners rather than formal instruction — a model she is already applying at home, continuing her own enamelling practice through self-directed study and preparing to share her findings with the next generation of designers through RMIT.

The Fellowship's original ambitions also included a public exhibition, workshops and a published set of findings for the wider design sector. An exhibition is now provisionally planned for next year at a local gallery, The Oigall Projects - early evidence of that broader intention taking shape alongside the institutional conversations already underway. The Fellowship has not yet produced formal policy or industry body engagement, and this report does not claim otherwise; but the connections already built through this research mark the beginning of exactly the kind of sector-wide network it set out to create.

Taken together, the impact of this Fellowship runs from the personal through to the sectoral without a clean break between them. The confidence and authority she gained personally now shapes how she runs her practice professionally, and that same practice is already carrying vitreous enamel back into wider Australian design, manufacturing and public view - through a live commercial project, an expanding manufacturer network, and a

growing set of institutional relationships at home. What began as one designer's curiosity about a disappearing material has become a working demonstration of exactly what she set out to prove: that vitreous enamel can be reintroduced into Australian design, manufacturing and education, not as a historic craft to be preserved, but as a living material still capable of evolving.

07

Recommendations and Considerations

The Fellowship demonstrated that reintroducing vitreous enamel into contemporary Australian design does not require new infrastructure built from scratch. It requires a more deliberate connection between Australia's remaining industrial capacity and the artisan-scale practice this research has spent months developing. The considerations below build on relationships and momentum already in motion, not a fresh start.

Deepening the Middle-Scale Model

The Powerhouse Made project proved that a genuine middle scale between industrial enamelling and small-scale artisan practice can operate commercially in Australia today. The Fellow will continue developing this model, pursuing further commissions built the same way: an industrial manufacturer producing at commercial volume, with the Fellow personally applying the artisanal, hand-finished surface treatment. Work with Glassmetal Industries remains central to this. The trust and technical familiarity built during the Fellowship give both parties room to take on more ambitious surface development as the relationship matures.

Her own hands-on enamelling practice, currently developing through a personal studio kiln and continued technical study, will grow alongside this. Building this skill independently ensures the artisan side of the model does not depend on a single manufacturer's willingness to accommodate it.

International Collaboration and Exchange

The relationships built with Incalmi and Ranieri remain open. Both have expressed continued interest in a future project once funding and timing align, and the Fellow intends to pursue that with each, building on trust that took genuine in-person engagement to establish. Every site visited during the Fellowship made the same point in different ways: relationships of this kind are sustained through ongoing contact, not a single successful visit. This recommendation stands on its own - maintaining active dialogue with international collaborators beyond the formal Fellowship period, not only during it.

A Structured Pathway for Skills Transfer

The most significant long-term gap this research identified is not technical but generational. Specialist enamelling knowledge in Australia exists almost entirely as tacit expertise held by a small number of individuals and businesses, with no formal pathway for it to be passed on. Addressing this properly is a larger undertaking than any single Fellowship can complete, but a genuine starting point already exists. Early conversations with RMIT toward a guest talk for interior and furniture design students are a first, modest step toward reintroducing vitreous enamelling to design.

education; this report recommends developing that into a recurring engagement rather than a single visit.

The obstacles to anything more substantial - a short course, a workshop series, eventual inclusion in formal curriculum - are the same ones this research encountered throughout: few practitioners with the time or institutional support to teach, and no documented body of knowledge to teach from. This positions a fuller skills-transfer program as a genuine medium-term goal rather than an immediate one. It is not, however, starting from nothing: the relationships already established with Glassmetal Industries, RMIT and Craft Victoria provide a credible foundation to build from.

Strengthening Local Networks and Public Visibility

Sustaining vitreous enamel's relevance in Australia depends on more than a single commercial project. It depends on the design community, and the general public, encountering the process directly. Two initiatives already underway will build that visibility: an exhibition provisionally planned for next year at The Oigall Projects, presenting a body of work that tests the material's design capability publicly, and ongoing dialogue with Craft Victoria toward workshops, talks and further exhibition opportunities. Documentation from the Powerhouse Made project, already being recorded for the product's own promotion, can also serve as a public record of the process itself, not only the finished object - extending the same principle that shaped this Fellowship's research: following work from factory floor through to public exhibition.

08

Conclusion

This Fellowship set out to investigate how vitreous enamel might be reintroduced into contemporary Australian design, through its history, material properties, manufacturing processes and international practice. What the research found was more straightforward than expected: reintroduction doesn't need new infrastructure or a revived lost technique. Australia already has a working industrial base, in businesses such as Glassmetal Industries. What it doesn't have is a deliberate connection between that capacity and design-led experimentation and opportunities.

Visits to workshops and factories across France, Belgium and Italy showed something similar. Overseas, vitreous enamel isn't treated as a fixed historic craft, or as a narrowly specialised industrial coating - it's a material that keeps getting reinterpreted through collaboration between designers, artisans and manufacturers. Emaillerie Belge prioritises consistency; Glassmetal was far more open to testing; and the design relationships observed at Incalmi, Malfatti and Ranieri showed that industrial production and design-led surface treatment don't have to be opposing approaches. Enamora, the vase developed for Powerhouse Made, tested this directly. An industrially produced object given a finer, more expressive surface finish, at commercial volume - proof that a genuine middle scale between industrial enamelling and small-scale artisan practice can operate in Australia today.

The Fellowship also changed how the Fellow designs, and how she understands her own authority within the field. What began as a concern with preserving a specialist, declining technique became something else: an interest in how the material might evolve in new hands and new contexts. She now thinks about substrate, firing behaviour and application method from the outset, not as an afterthought, and works alongside manufacturers with decades more experience than her - increasingly willing to question established method rather than just absorb it.

It also gave her a way of working with a factory that she didn't have before. She'd had no working relationship with a local manufacturer until after this Fellowship's international travel - the sequence mattered. She learned what was possible overseas first, then came home and tested that against what a local factory could actually do: trying different finishes, watching some of them fail, adjusting, trying again. That back-and-forth, done slowly and mostly on the factory floor rather than on paper, is what taught her how to talk to industry in a way that gets somewhere, and how to fit her own design thinking around what a working factory can realistically handle.

Ongoing relationships with Glassmetal, Incalmi and Ranieri are one part of what the Fellowship leaves behind. So are the conversations already underway with RMIT and Craft Victoria, and the exhibition planned at The Oigall Projects. Between

them, they're pushing the research into design education and giving designers and manufacturers a reason to keep working together. They're also putting the work in front of the public, not just other practitioners. None of this is aspirational - the connections this research set out to build, between Australia's industrial capacity and its design community, are already active.

This Fellowship has demonstrated that vitreous enamel is not a historic craft to be preserved, but a material process still capable of evolving, integrating and earning its keep commercially. Keeping that true in Australia comes down to a few things: passing on the knowledge a handful of ageing practitioners still hold, keeping design education connected to working manufacturers, and building on the middle ground between industrial and artisan-scale enamelling that Enamora has already tested. The Fellow's practice, and the collaborations formed through this research, carry that forward - from a single completed object into a working model for Australian design, manufacturing and skills development.

09

References

- Adamjee, Q. and S. Carboni, 'Enameled and Gilded Glass from Islamic Lands', The Metropolitan Museum of Art [website], 1 October 2002, [metmuseum.org](https://www.metmuseum.org), accessed 20 July 2026
- Da Cortà Fumei, M. and C. Squarcina, Museo del Vetro. Murano, Venezia. Guida alla Visita, Fondazione Musei Civici di Venezia, Venice, 2023
- Dorigato, A., The Murano Glass Museum, Marsilio, Venice, 2006
- Dutton, N., The Beautiful Art of Enameling, Thomas Y. Crowell, New York, 1966
- Glassmetal Industries, 'Glassmetal Industries: Home Page', Glassmetal Industries [website], [glassmetal.com.au](https://www.glassmetal.com.au), accessed 10 August 2026
- Incalmi, 'Enamel on Glass: a Modern Design Technique', Incalmi [website], 2022, [incalmi.com](https://www.incalmi.com), accessed 1 August 2026
- Incalmi, 'Valentina Cameranesi: Combining Ceramic and Enamel on Copper', Incalmi [website], 2022, [incalmi.com](https://www.incalmi.com), accessed 7 August 2026
- Institute of Materials, Minerals and Mining, 'A Concise History of Enamel', IOM3 [website], 22 September 2022, [iom3.org](https://www.iom3.org), accessed 14 September 2026

10

Appendix

Appendix A: Practitioner and Manufacturer Biographies

Biographical information is drawn from professional exchanges during the Fellowship and, for historical figures, publicly available sources.

Peter Magalotti

Peter Magalotti runs Melbourne Enamelling in Campbellfield, Victoria, together with his wife Mary. He's been working with enamel for over forty years, one of the few people left in Australia with that depth of hands-on experience. These days most of his work is restoration, alongside newer commissions like house signage, collectible train signage and enamelled appliances. He was the Fellow's first contact in the Australian enamel industry, and it was an offhand moment in his workshop - a box of colour test samples he'd set aside - that shaped the direction this whole Fellowship took. He has no successor lined up, so a lot of what he knows exists only in his own hands.

Adam Morgan

Adam Morgan is Sales Manager for Industrial and Architectural Signage at Glassmetal Industries, his family's enamelling business in Geelong. He started there in 1994 in a production role, not long after finishing a Bachelor of Commerce, and took over the Signage Department in 1998 - quoting, artwork, fabrication, delivery, the whole process. His connection with the Fellow started with a referral from Peter Magalotti, who pointed her to

Glassmetal for enamelling-grade steel sheet, and grew from there into designing and producing Enamora, the vase made for the Powerhouse Museum's Powerhouse Made program.

Vincent Vanden Borre

Vincent Vanden Borre owns Emaillerie Belge, the last enamelling company left in the Benelux, based in Brussels. He took the business on in 2016 - twenty-five years old, no background in the process, the company close to shutting down - and has run it since. Under him, Emaillerie Belge moved to its current site in Brussels' Forest district in 2018 and marked its 100th year in 2023, working along the way with designers including Marc Newson and Muller Van Severen. He's known for controlling the enamelling process tightly rather than leaving anything to chance, aiming for consistency across a production run.

Patrizia Mian

Patrizia Mian is CEO of Incalmi, a design and production company in Marghera she co-founded in 2015 with Gianluca Zanella and Alessandra Zennaro. She grew up on Murano, in a family with ties to the island's glassmaking history, and has led Incalmi's move into vitreous enamel over the last five years, including its more recent work applying enamel to glass. She hosted the Fellow across several visits to Incalmi during this Fellowship.

Gianluca Zanella

Gianluca Zanella co-founded Incalmi and heads its research and development. He spent time with the Fellow during her visits, talking through the company's approach to enamel technique, substrate experimentation, and how it works with international clients on new designs.

Alessandra Zennaro

Alessandra Zennaro co-founded Incalmi alongside Patrizia Mian and Gianluca Zanella in 2015.

Giulia Rioda

Giulia Rioda runs Incalmi's enamel workshop - her formal title translates as fire enamel decorator, glass on metal. She also grew up on Murano, and came to enamelling from a background as a make-up artist, which she credits for the eye she brings to colour. She showed the Fellow the practical side of the process directly, including dry powder application and finishing work on a set of commissioned pieces for Hermès.

Alessandra Malfatti

Alessandra Malfatti runs an enamelling studio in Padua, working across graphic design, painting, fire enamel and jewellery. She first got interested in high-fire enamel after seeing an exhibition of Paolo De Poli's work, then trained under Graziano Visintin and Maria Rosa Franzin before specialising further with Ennio Cestonaro, and opened her own studio in 2016. Alongside restoration work - including on a private collection of De Poli and Gio Ponti pieces - she has a long-running commercial relationship with Italian furniture brand Paola Lenti, producing enamelled copper tabletops for them. She welcomed the Fellow into her studio and spoke openly about her training, including time spent learning from Rebecca Di Filippo.

Sara Martín Mazorra

Sara Martín Mazorra is a design technician at Ranieri, the family-run lava stone company on the slopes of Vesuvius, now run by its third generation under CEO Giovanni Ranieri. She hosted the Fellow's visit to Ranieri's headquarters and factory,

introducing the team and explaining the company's hybrid vitreous and ceramic glazing process.

Rebecca Di Filippo (Rebecca D. Enamel)

Rebecca Di Filippo, who trades as Rebecca D. Enamel, is a master artisan based near Milan working in vitreous enamel and Roman micromosaic jewellery. She started training at sixteen, learning miniature painting, Japanese cloisonné and the Limoges techniques of émail peint and grisaille, and has since taught over 400 students across more than 20 countries, including through Milan's Galdus goldsmithing academy and IED. She trained the technicians who now run the enamel workshops at both Incalmi and Alessandra Malfatti's studio - a connection the Fellow only discovered by chance, weeks apart, on separate visits.

Valentina Cameranesi Sgroi

Valentina Cameranesi Sgroi is a Milan-based creative director and set designer, born in Rome and trained in product design at ISIA, who started out in publishing and illustration before moving into her current practice. Her enamelled copper work was the reason the Fellow ended up at Incalmi in the first place: the two met during a trip to Melbourne in early 2025, and Cameranesi Sgroi's willingness to share her contacts led directly to the introduction.

Paolo De Poli

Paolo De Poli (1905–1996) was an Italian enamellist working out of Padua. He trained in drawing and metalwork at the Pietro Selvatico art school there, and started out as a portrait and landscape painter before coming across vitreous enamel while travelling in the 1930s - he began experimenting with it on metal from 1933. From the 1940s he worked closely with architect and designer Gio Ponti, producing enamel panels for the Bo Palace at the University of Padua and for the ocean liners SS Conte Grande and SS Conte Biancamano. A private collection of his work, in for restoration at Alessandra Malfatti's studio when the Fellow visited, was one of the clearest links this Fellowship found between historical enamelling

and the work still being made today - and De Poli's practice was one of the things that first drew the Fellow toward vitreous enamel.

Gio Ponti

Gio Ponti (1891–1979) was an Italian architect and designer who founded the magazine *Domus* and spent six decades working across architecture, furniture, ceramics and glass. His long collaboration with Paolo De Poli produced some of the best-known uses of vitreous enamel in twentieth-century Italian design, and their work together had already shaped the Fellow's own design thinking well before this Fellowship began.



International
Specialised
Skills
Institute



est. 1991