

Current Issues in Global Furniture



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Furniture Research Group Conference**

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Current Issues in Global Furniture
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About the cover: Chest of drawers: ‘George’, 2008/2013, Great Britain (London, Designed
and made by Gareth Neal (1974–), Ash, Artist’s proof from edition of five. Now in V&A
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The conference had three keynote speakers and the editors are grateful to them for their contributions' these are,

Professor Johnny Grey
Professor Jega Ratnasingam
Gareth Neal

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Introduction

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'Current issues in global furniture' attempted to capture contemporary views of where furniture is currently positioned from a world perspective. The first keynote paper firmly placed kitchen design into the field of furniture products showing that it has a similar stylistic development, but with nuances particular to its form and function. Ecological issues were raised concerning durability and the use of recycled components that perhaps to many is not what is expected within the domestic kitchen. Johnny Grey is no ordinary kitchen designer having designed and built kitchens all over the world within a wide range of budgets. Grey shows innovation in his adoption of green principles and especially in reusing components and materials.

The research team from the department of wood and furniture in Thessaly, Greece, led by Ioannis Ntintakis illustrated the need to investigate detailed elements of construction as we strive to improve products. Ntintakis et al achieved this employing new techniques not using a large testing hall, but on the screen of a computer using Finite Element Analysis taken from an engineering design approach. This paper illustrated that the furniture designer can test their designs structurally using sophisticated computer programmes anywhere in the world via the web. There is no need to make physical prototypes and take them to testing halls to see how structurally efficient they are as analysis with reliable results can be achieved through computational testing.

The second keynote gave solid information from the ASEAN furniture sector (Singapore, Malaysia, Thailand, Indonesia, Vietnam and the Philippines), providing a stark reality to European manufacturers. Jega Ratnasingam presents an erudite paper, which is based upon rigorous research conducted over the past decade. The startling growth and capacity of furniture production in this region shows that it is fast becoming a world dominant entity. The paper is punctuated with notable figures, such as the 13.9 billion USD (representing furniture exports from the region) and the 1.7 million SMEs employing a 4.1 million workforce. This paper spelt out very clearly why European manufacturers are finding it challenging to compete with Asia.

The EU timber regulation work presented by Alun Watkins put into perspective the problems we face with raw materials. The importance of certification of forest management and chain of custody is paramount to maintaining a sustainable future supply of raw materials for the furniture industry. This is not by any means consistent across the globe. The work of the PEFC (Programme for the Endorsement of Forest Certification) to increase compliance is therefore vitally important. Watkins pointed out that to succeed in this all the parties must be made aware through education, from the loggers to the consumers of wood based products.

Andy Pitman introduced the concept of new woods which some might find confusing. From the existing 60,000 hardwoods and 500 softwoods why would we want any more types of wood? As with modification to crops for the food chain, timbers have also been modified to produce optimum products that can meet the challenges and requirements of the timber trade. Of specific interest to furniture producers were the modified timbers, such as ThermoWood® D and Kebony®, which have unique characteristics that will suit many designers' requirements, both for internal and exterior use. The methods of production are explained as well as providing properties, such as high durability with modified woods being capable of surviving perfectly for 60 years plus in the outside environment.

The third keynote paper gives on the ground views of making furniture from a design perspective. We see how designers are continuously striving to create something that satisfies their beliefs and yet can be somehow used to make a living. This creates compromise on behalf of designs that become prototypes and then are made into products. Gareth Neal however does not like compromise and in

many ways has exploited opportune creations, such as George, which have been highly successful short runs (bespoke series of chest of drawers). The adventure of trying to be carbon neutral was explored by Neal and this story is told with anecdotes and illustrates how persistence in craft can result in satisfying and consumable designs.

Moving across the globe to Japan the next paper enlightens us on the Shizuoka furniture making industry. Shizuoka has reduced considerably in size and parallels can be drawn with towns in the UK such as High Wycombe and the East End of London in its decline pattern. Sarah Teasley introduces the reader to the local industry with some detailed examples of the people and their woodworking techniques as well as designs. It concludes with a call for help to support these endangered heritage occupations by consumers and heritage supporters to ensure the sustainability of these entities before they cease to exist.

The following paper is set in Colonial West Indies in the eighteenth century and may at first seem out of place with the discourse of these proceedings. However, understanding the patterns of the past can inform current world furniture activities as we see that materials are used for purpose (no point in anything but solid wood being used in a tropical climate). John Cross informs us that the market for designs will change due to the current consumers of the time, their habits, rituals and etiquettes. As Cross further points out furniture has to be modified to suit the needs of the consumer.

The final paper brings us back to Europe, as a furniture-based conversation that does not include Italian design is incomprehensible. Catharine Rossi has looked in detail at the Italian design industry starting with the Milan furniture fair with its 300,000 visitors (2013). As with many European countries the health of the furniture industry in Italy is not as good as it has been in the recent past. The strengths of post war craft and design are studied showing that this was a significant period in Italian design to be followed by a high successful manufacturing period (1980s) which witnessed the Milan region as one of the world's furniture design and manufacturing successes. What is very interesting here is that the return to focus on Italy's craftsmanship, rather than design, is now apparent.

Looking at global furniture in 2013 has highlighted some particular issues and it is clear that other countries not explored in this discourse will have further contributions to make on a better understanding of the industry today. The discourse that has occurred here has raised new insights into where the sector is currently positioned. How it will move forward depends on international cooperation. It is clear that for furniture to progress it cannot operate as a disparate group of SMEs spread across the world, as it can learn so much from a collective world view. The intention is to continue this conversation with future conferences set in different parts of the world.

The Rise of Kitchen Furniture

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Abstract

This paper traces the revival of kitchen furniture in Britain and the USA, alongside homeowners' growing willingness to use furniture in planning their kitchens. It proposes a range of remedies for the failure of many contemporary kitchen interiors to engage their users emotionally. An exploration of the meaning of furniture here is based on a system for dividing furniture into four broad categories: **durable living furniture, simple construction pieces, designed furniture with meaning, and recycled or vintages pieces**. Furniture forms of the future are considered, along with a new research project, the age-inclusive kitchen. An outline of the kitchen's transition to the key room in the house is followed by a brief history from the sixteenth century onwards of kitchen furniture and accessories in the UK and USA. The creation of kitchen furniture as a recognized category, one that was little defined until recently, is related to twentieth century social trends. The Unfitted Kitchen is presented as an example of a kitchen where form follows personality, house architecture and family culture. I conclude with the rationale for establishing a kitchen design course at degree level at Buckinghamshire New University, which aims both to raise the status of kitchen designers and improve domestic kitchens.

Keywords: Hardwired needs, Unfitted Kitchen, emotional ownership, redefining furniture, Hoosier

The Age of the Kitchen

From early times until recently, kitchen furniture has been taken for granted and not accorded much status. Hearths (with their inevitability) and the primitive nature of appliances assured that the role of furniture remained unnoticed – and anyway kitchens were rooms for servants or women. In this paper my contention is that the kitchen has actually surpassed other rooms in the home in terms of size, time spent, social value, media focus and economic expenditure - all of which set the scene for the rise in status of what goes inside it. Rooms rise and fall; names and uses change: the parlour is a case in point.¹ Derived from the French word *parler* (to talk), this was a separate room often adjacent to a kitchen where guests were invited and table and chairs were arranged around a fireplace for conversation. Whilst the parlour remained a key room in colonial USA until the 1930s, it had dropped out of use in the UK by the end of the nineteenth century. Talking could now be done in the sitting room or kitchen, paving the way for the kitchen's twentieth century incarnation.

Background

Thirty years ago I made my first kitchen for a client who wanted an injection of atmosphere and sense of playfulness in a small extension in Tooting. We chose 'punk gothic' as a flexible concept and made the kitchen with (mostly) freestanding furniture, each item with a function incorporated and style taken from the gothic sensibility's long and extraordinary history. Behind this was a serious organisational idea, a simple way of planning kitchens that I formalised ten years later into a working template: the Unfitted Kitchen, or 'kitchen made with furniture'. Traditional in essence, this was supported by largely hidden but vigorous ergonomics and through concepts such as dedicated work surfaces, democratic planning, soft geometry and elbow-based measurements. Furniture has always, therefore, had a formal role at the heart of my kitchens.

¹ Katherine C. Grier, *Culture and Comfort: Parlor Making and Middle Class Identity 1850 – 1930* (Washington: The Smithsonian Press, 1988)

Meaning in Furniture

A truism but worth restating is that every piece of furniture has its own story, part set at inception, part accrued over time. Furthermore, furniture both has its own special identity and by its presence creates meaningful behaviour in its users. Anthropological studies gain insight into how people lived by studying furniture, as shown by the recent Pompeii exhibition at the British Museum, where items such as a child's cot, various side tables and chairs illustrated the workings of Roman daily life. All were mobile and some highly ornate. However the word 'furniture' has definition problems like other broad categories in language, so I propose that we look at reclassing furniture into four terms to help us see its role more clearly. This should allow us ultimately to produce better, more appropriate, furniture and deploy global resources in a more responsible way.

Redefinition of Furniture Types

A dictionary definition of furniture is 'the movable, generally functional, articles that equip a room or house required for use or ornament'.² I consider freestanding furniture to be **durable living furniture**. Artisan-made, solid and with potential for emotional engagement, this is the furniture that becomes a backdrop to memories and associations as it lasts long enough to be used by more than one generation.

In a second category, kitchen units, carcass-based furniture or built-ins can be classed as **simple construction pieces**. These have little emotional permeability and are often built to meet architectural or technical needs. In line with Dictionary.com's further description of furniture as 'fittings, apparatus, or necessary accessories for something', I see these items performing a more mundane role and offering users little scope for emotional connection, and therefore not fully able to be categorised as 'furniture'.

A third group is industrially-made furniture. I describe this as **designed furniture with meaning**. Like a short story with less time to make an impact but with surety of pace and narrative precision, these pieces come about through partnership between designers and large-scale producers. With good design they can acquire a strong story and become either cultural icons or properly functional pieces. While the word 'furniture' is derived from middle French *fournir* (to furnish), the source of other European words meaning 'furniture' derive from the Latin *mobile*. In this sense, there has always been a role for lightweight freestanding furniture made off-site and acquiring a role somewhere between accessory and equipment.

Finally, a fourth category is worth considering: older furniture, either antique or twentieth century and renovated by individuals or businesses, is growing in popularity. Furniture that is **found and recycled with care** is a necessary response to ecological pressures and future resource shortages. As many people cannot afford artisan furniture or do not wish to commission expensive kitchens, purchasing partial kitchens and cherry-picking furniture from a combination of the above categories makes sense.

These four classes of furniture enable both producers and users to identify the needs and services required to make homes and kitchens work better and understand the motives of their producers. In this paper in which I look at the role of furniture in the kitchen and discuss how we can promote individual expression in our homes, I intend to focus on the area I know best, **Durable Living Furniture**.

Meaning in the Kitchen

Whilst it is accepted that people's interest in interior design varies, a home in which the décor and objects seem devoid of participation by the owner can show emptiness of spirit 'a few steps away from depression', according to Daniel Miller, Professor of Material Culture at UCL.³ Instead of conflicting with concern for non-material aspects of life, Miller argues that caring for objects tends to be associated with good personal relationships, as in 'the aesthetics of care, as it is applied equally and

² At www.dictionary.com.

³ Daniel Miller, *The Comfort of Things* (London: Polity Press, 2008) pp29

indiscriminately to both objects and persons [...] one turns out to be the vehicle for the other'. Kitchens are places where the 'aesthetics of care' (in Miller's phrase) is highly visible, with hands touching surfaces, taking in temperature and texture, and senses engaged via, for example, the aroma of cooking. The surroundings and design make a great difference to the way we feel in the kitchen. Neuroscience studies by, among others, sociologist John Zeisel are well worth reading for useful clues.⁴ Historically, the progression to 'fitted' kitchens happened by stages. An early development was The Frankfurt Kitchen, developed for social housing in 1926 by Margarete Schutte-Lihotsky.⁵ This was inspired by 'Taylorism'⁶ and earlier American influencers like Catherine Beecher, who, interestingly, viewed household work as a profession. Fordism,⁷ or 'work study' based on efficient production lines, gave a science-based authority to these ideas, along with increased emphasis on hygiene – an anxiety exploited again for selling kitchens from the 1960s.⁸ Based on the standardisation of cabinetry and appliances, the Frankfurt Kitchen in essence represents my category of **simple construction pieces**. In this model, a new kitchen arrives in packages straight from the warehouse or factory and when installed provides the gratification of looking exactly like the brochure. Streamlined, fitted cabinetry in straight lines has a tendency to dominate kitchen spaces and flows into corners. Though well ordered, it represents the opposite of a furnished room with its independent objects and furniture. **Simple Construction Pieces** have admittedly bought benefits: speed of design, ease of manufacture and installation, and low prices. The prices to be paid are reduced involvement of consumers in the design process, lack of atmosphere, and, surprisingly, mediocre ergonomics, all leading to low levels of emotional ownership for customers. In contrast, I propose that the kitchen should offer the same scope for personal expression as other domestic rooms. I endorse the comments of Ilse Crawford, who calls for home-making to satisfy emotional needs for protection, survival, love, respect and self.⁹ Social research and the growing influence of neuroscience that identifies our hardwired needs (derived from our instincts) supports this aim. Incidentally, Richard Layard proves that people's happiest times of day are between 6- 10pm - when we are likely to be in our kitchens!¹⁰

Historic Furniture in the Kitchen

Early examples of furniture used in kitchens from medieval times were mostly conceived for other rooms. Court cupboards (from a French epithet meaning 'short'), 'Tridarns' (seventeenth and eighteenth century Welsh cupboards with three canopied layers in a combination of open and closed storage), food cupboards, corner cupboards, chests, settles and dressers represent the most substantial of these furniture types. Trestle, gate leg and refectory styles were the most common tables, with many variations such as table chairs and even table beds. No records exist of sink cabinets, since washing up was not considered an appropriate activity in a homely kitchen and was undertaken in a scullery or outhouse. Wall-mounted items abounded though in the form of spoon racks, stepped knife boxes, plate racks, delft racks, cup racks, wall shelves with drawers, wall boxes of drawers, pipe boxes and salt boxes. Compared with today's eye-level cupboards, these make a lively and easily-used collection of storage elements, as the function of each item is readily identifiable. Kitchen furniture in Ireland has been well documented by Claudia Kinmouth's comprehensive study, *Irish Country Furniture, 1760 - 1890*.¹¹ Here, food presses were prestigious large cupboards that stored everything from food to household objects of many kinds. They were placed alongside press cupboards, one-piece dressers and

⁴ John Zeisel, *I'm Still here: Creating a Better Life for a Loved One Living with Alzheimer's* (New York: Avery Trade Press, 2011), Chapter Six. How appropriate living spaces encourage independence and well-being.

⁵ The Frankfurt Kitchen – . <http://www.vam.ac.uk/content/journals/conservation-journal/issue-53>

⁶ Taylorism, a management theories based on synthesized workflows, one of which was the transformation of craft production into mass production.

⁷ Fordism in Europe was seen as a way of removing pre-capitalist society values by subordinating the economy, society and even human personality to the strict criteria of technical rationality. Nigel Gilbert, Roger Burrows and Anna Pollert (eds), *Fordism and Flexibility: Divisions and Change* (New York: St. Martin's Press, 1992), pp.13-17.

⁸ June Freeman, *The Making of the Modern Kitchen* (Oxford: Berg, 2004). The kitchen company Hygena was named after the Greek Goddess of health, cleanliness and sanitation. The company, founded in Liverpool in 1925, used slogans such as 'hygienic efficiency' in their advertising, with worktops made from Formica's new wipe-clean surface.

⁹ Ilse Crawford, *Home is Where the Heart Is* (London: Quadrille, 2005), key words on the back cover.

¹⁰ Richard Layard, *Happiness* (London: Penguin, 2005), pp. 15-16. Charts showing happiness in different activities and average happiness at different times of day.

¹¹ Claudia Kinmouth, *Irish Country Furniture* (New Haven: Yale University Press, 1993)

built-in partition dressers. Clevises - hanging dressers with slots and dressers combining the role of hutch – migrated to the US as hutches and meal chests (high sided wooden chests to store various kinds of grains). Disguised beds, including high-seated settle beds that were also used as a resting place for water or milk pails, and falling tables with one end attached to the wall are also shown by Kinmouth. Smallbone of Devizes¹² who made a great impact on kitchen design in the 1980s drew their inspiration from Irish country furniture. Furniture historian Russell Hawes Kettell¹³ catalogues seventeenth and eighteenth century American colonial furniture; interesting examples include trestle-foot hutch tables, candle stands, two piece hutches or dressers, chair tables, press cupboards, for food, settle beds and benches. Historically, furniture was closely connected to the maker and user, and locally made and supplied. These ties between production, distribution and transport weakened substantially in the nineteenth century. The rise of the retailer, and now the internet intervening in all relationships, and the sophistication of modern marketing and communications, play dominant roles in forming the type, size, use, decorative style and price of furniture. From interior magazines, websites and newspapers to TV shows, ideas formed by such a wide range of sources *should* allow for individually personalized homes, but unfortunately this possibility tends not to be realized. Popular styles become clichés, and fashion - though bringing freshness or at least rotation - makes kitchens seem obsolete by dating their installation, to the detriment of users' enjoyment in the medium- let alone long- term.

Twentieth Century Social Trends

The commercialisation of domestic kitchen manufacturing began in the USA in Indianapolis in the 1920s, ironically through the making of specialist kitchen furniture. Nancy Hillier outlines this in *The Hoosier Cabinet* (2009), a history of the eponymous company.¹⁴ She suggests that part of its success was through imaginative and witty advertising that caught the imagination of the American 'housewife': '[a] kitchen without a cabinet is like a farm without a plough' was an early (1910) example, followed by 'I too, have abolished slavery', 'I've banished evening weariness' (1919), and 'saving work is saving youthfulness'. Hoosier was the first real kitchen company to use heavy marketing for its freestanding kitchen furniture, but its demise was partly self-inflicted as by establishing the profitability of kitting out domestic kitchens it generated dangerous competition.¹⁵ With the onslaught of twentieth century social and commercial forces, the freestanding furniture Hoosier created demand for was replaced by lower cost built-ins and continuous-counter kitchens. These allowed architects and house builders to make easier use of architecturally dominant features and alcoves, simplified the process of design and installation and abolished the bother of customers planning their own spaces after purchase.

Terence Conran wrote the first notable consumer book on domestic kitchens in 1977. *The Kitchen Book* set out his already successful ideas (available to customers of Habitat) with the claim that 'we are returning to an almost medieval situation where the kitchen is, once again, the hub of the home'.¹⁶ I back with enthusiasm his suggestion that the kitchen 'ought to be renamed the living room, because that it what it is'!¹⁷ In *The Food Axis* (2001), Elizabeth Collins Cromley, Professor of Architectural history at Northeaston University, argues that food culture plays a substantial role in the development of the American home from the sixteenth century onwards.¹⁸ Collins Cromley shows the number of

¹² Smallbone of Devizes, set up by Charles Smallbone and Graham Clarke. Started out as pine furniture restorers and began making kitchens with facades of Irish dressers that had fallen apart in their caustic tanks which were attached to a standard carcass. Buyers emotional engagement was extraordinarily high as they felt they were buying a bit of history. Success was immediate and changed the British and American kitchen industries in 1980's.

¹³ Russell Hawes Kettell, *The pine Furniture of Early New England* (New York: Dover, 1956)

¹⁴ Nancy Hillier, *The Hoosier Cabinet* (Bloomington: Indiana University Press, 2009)

¹⁵ Hoosier may have traded on US state Indiana adopted it as its official demonym. If so, it was a clever marketing trick. The etymology of Hoosier is debated. It was derived from the Anglo-Saxon 'hoo', meaning high or hill. Ref: Indiana Historical Society.

¹⁶ Terence Conran, *The Kitchen Book* (London: Mitchell Beazley, 1977), Introduction.

¹⁷ Ibid., Introduction.

¹⁸ Elizabeth Collins Cromley, *The Food Axis, Cooking, eating and the Architecture of American Houses*, (Charlottesville, University of Virginia Press, 2010)

specialist rooms devoted to food substantially increasing and so allowing the socialisation of a core kitchen, with her final chapter inspiringly titled ‘All spaces are potential food spaces’. The contemporary kitchen, then, is liberated from pure culinary functions, with its capacity to rob surrounding rooms of their uses and subsequent shift to living-space status explicitly acknowledged. The opportunity for furniture to play a major role in driving its design is an open book. This explains why the Unfitted Kitchen has been enthusiastically received, particularly in Britain and USA, since its launch in 1986. It meets the need for the flexibility offered by furniture in such spaces and satisfies a preference for easy-to-live-in homes with furnishings that do not necessarily match, or are worn in (as in ‘shabby chic’).¹⁹ The idea of the kitchen made with furniture nevertheless took about twenty years to reach European kitchen manufacturers: at Eurocucina 2007 a key planning theme for manufacturers’ kitchen displays was units made to appear as blocks of furniture, high impact units, referred to as monolithic style.²⁰

Kitchen Furniture versus Built-in

Does freestanding furniture offer a superior approach to creating a kitchen? Or, is it an anachronism best left behind in the nineteenth century? How can it produce better planning than ‘continuous counters’, as Americans call fitted kitchens? An analogy I provide as one answer is to imagine the kitchen like a city - with mixed neighbourhoods, a network of streets, skyscrapers, public parks, utility and recreational buildings where a multitude of physical forms connect cultural, commercial, social and informal activities, particularly in older, more settled areas. On the other hand, a highly ordered, grid-planned city, with activities carefully zoned and similar-looking buildings, is not only boring but also discourages casual human interaction, at times vaguely threatening. Some degree of order is needed, but this has to be balanced with the more pleasurable sense of freedom and elements of randomness and the unexpected. These arguments have been well put by the sociologist Ray Oldenburgh with his idea of the Third Place, who explains the necessity for casual meetings²¹ and architects such as Jane Jacobs, who argue that we like old cities because they are more sociable, tell a story and have human scale.²²

Furniture collectively provides the building blocks of a kitchen. Items of furniture are key points of connection with the senses via the eyes and body. As the art and design, the backbone or the infrastructure all rolled into one, they allow designers to create an animated space. This is an important step towards emotional engagement, as we need ways to make spaces come alive and make inanimate objects speak to us, as outlined by Lance Hosey in *The Shape of Green*. He quotes Diane Ackermann from *A Natural History of the Senses*.²³ ‘The mind does not really live in the brain but travels the whole body on caravans of hormones and enzymes [...] making sense as we touch, taste, smell, hear, see.’ Hosey follows up by suggesting that ideally we should ‘picture a world populated only by essentials that nourish and enrich’.²⁴ In other words he wants things to be as alive as possible so we can feel for them, love them a little bit and so hold on to them for a long time. Ackermann’s book shows how our bodies have an extraordinary capacity for experiencing the physical world. In line with thoughts previously outlined I believe it’s much easier to make a kitchen come alive with freestanding elements than built-in counters, as you have freedom to play with shape, scale, colour and texture and to be closer an artist’s way of engaging the senses. In simple terms this *Unfitted* approach is a lot more fun, and has more room for creativity.²⁵

¹⁹ Shabby Chic is a term coined by *The World of Interiors* that became widely used in the US as well as the UK and is applied to distressed country furniture

²⁰ Martin Allen Smith, editor of *The Designer Magazine*, (editorial November issue, 2007).

²¹ Ray Oldenburgh, *The Great Good Place* (Massachusetts: Capo Press, 1999), Chapter two, ‘The character of Third Places’, provides clues to making the kitchen spaces sociable.

²² Jane Jacobs, *The Death and Life of Great American Cities* (New York: Vintage, 1961). The entire book is full of general wisdom that relates to designing spaces where people co-habit in close quarters.

²³ Diane Ackermann, *A Natural History of the Senses* (New York: Vintage Books, 1995)

²⁴ Lance Hosey, *The Shape of Green* (Washington: Island Press, 2012), p. 98.

²⁵ Johnny Grey, *Thet of Kitchen Design*, (London, Cassell & Co, 4th edition, 1999). Sections 3-5

The process of settling into a room is could be described as furnishing it. Along with accessories and other household objects, using furniture is a time-honoured way of allowing the occupiers to be in control, as they are likely to be the dominant items in terms of scale. Leaving space for clients to put in their own paraphernalia is important, but so too is a design that frees their minds so they can dip into an imaginary world, similar, perhaps, to way one enjoys a good novel. Imposing a repetitive kitchen-wide aesthetic, using the same materials, colours, door shapes, handles and work surfaces, prevents this. It can be said that a possible disadvantage in a kitchen made with furniture is an element of randomness and, due to looseness of planning, wasted or unused space creating difficulties with cleaning and excessive carrying of objects between one platform or work surface and another. However, I would say that space for the imagination is a bonus. It is up to the designer to get the ergonomics right, i.e. plan tightly around key culinary functions: kitchen furniture has to be considered collectively to work effectively.

The second major argument against using furniture is the cost. Units or **Simple Construction Pieces** are cheaper to make as they are often of simple flat panel construction. Continuous counters also have no sides. Flat panels can be supplied in knock-down form, though interestingly the kitchen industry rarely supplies these to customers. Artisan furniture *is* inherently more expensive. A solution is a hybrid approach that involves using artisan pieces judiciously and employing built-ins where required, for example around appliances or for sink cabinets – and to bring in **found** (second-hand) **pieces**. Typically, central islands and peninsulas make a logical choice for artisan-made furniture. Too often though fitted kitchen suppliers prevent customers using their own furniture and accessories, as these make for more demanding planning and reduce the quantity of units they can sell.

To sum up, is the use of furniture as a key planning tool an advance or a setback in modern kitchen design? Progress in the context of home living should be judged by comfort, pleasure and function and whether the furnishings combine to deliver happier, more long lasting environments. A dwelling where hardwired needs are well catered for must include light, sociability, sanctuary and belonging, along with facilities for cooking. Emotional needs must be taken as seriously functional ones and I believe the use of well-made, linked freestanding furniture does a better job of this than a rigid built-in kitchen environment where personal furnishings are crowded out.

Summary: Future of Kitchen Furniture

My wish is for people to furnish a kitchen rather than fit it out with inauthentic copies of fitted cabinetry, influenced more by advertising and other media than their own imaginations. This creativity would take us to a happier place where form follows personality, house architecture and family culture. As consumers listen more to their instincts they are beginning to cater, perhaps without being consciously aware of it, for their hardwired needs. The rise in enthusiasm for preparing and eating of slow food and the emergence of media-focused sitting rooms will bring increased demand for more specific design and individual furniture, as both these trends change the ‘behavioural chemistry’ of rooms types.²⁶

So how might kitchen furniture develop? Central islands, a twentieth century invention, have the most scope as these multi-taskers bring together a myriad of kitchen functions. In terms of form also, islands are the most exciting as they are viewed from all sides - unlike the majority of kitchen furniture that is built against walls. New types of furniture such as architectural screens, double-sided cupboards and console tables, all look promising for the same reasons.

Corners define the architecture of a room and are often poorly considered in kitchens. A way of making use of them could include architectural hybrids such as walk-in pantry spaces or secondary ‘mini’ or ‘messy’ kitchens. Fitted counters are likely to remain in common use, especially at the heart of the culinary zone, but what goes on above them, typically deployment of wall-mounted cupboards,

²⁶ A nation of multi-taskers causes the sitting room to change. Ofcom, *The Communications Market Report 2013*. It is interesting to speculate on which space media stacking will descend more, the kitchen or sitting room and which will be more social.

is repetitive, boring and not ergonomic. Here is a chance for customising, a way to make the kitchen more likeable. Historically, as I have mentioned, accessory-furniture adorned kitchen walls for centuries with practical, eye-catching pieces. These show up the unimaginative state of contemporary kitchens. Similar items are in abundant supply today from furniture shops, skips, recycling centres, antique shops, vintage stores, car boot sales, eBay or Freecycle. Wall mounted items are flexible, don't get in the way when you are trying to use a work surface and can be chosen not to poke you in the eye when the doors are ajar.

In addition to the above new categories, furniture as light sources or with moving parts or rise-and-fall mechanisms will most likely emerge. The last is already appearing in universal design categories. The Long Kitchen, a research project to be launched at Newcastle University in November 2013, aims to create an aspirational all-age kitchen that suits a wide range of physical abilities, as one way of futureproofing kitchens.²⁷

The majority of kitchen sales today are made by staff paid on a commission-only basis, often with little training. The design course being developed by Bucks New University will make an important contribution to the kitchen industry by integrating interior, architectural, lighting and furniture design skills. At present in order to create a bespoke kitchen, the need for quite a number of single-competency professionals is cumbersome and too expensive for most families or individuals. Broadly trained designers would overcome this problem.

While any future vision must include making furniture that is exciting and functional and which encourages sociability and pleasure, it must also meet the sustainability criteria set out in Jonathan Chapman's *Emotionally Durable Design* and Lance Hosey's *Shape of Green*, and the latter's clear thinking about aesthetics and ecology.²⁸ Inspiring the widest number of householders to adopt the art and craft of kitchen design will guarantee kitchen furniture a permanent place in the home.

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Furniture Design Optimization with FEA Analysis

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Abstract

Wood is one of the most common materials in furniture construction. Materials based on wood are commonly used for furniture constructions, such as boards and composites. The use of these materials in furniture design can be problematic. Main criteria for furniture design are aesthetics, ergonomics and meeting safety requirements. With safety we are referring to the strength of components in furniture individually and as a whole. Designers have to consider strength as much as ergonomics as well as aesthetics. One of the methods to check and improve furniture strength is using a Finite Element Analysis (FEA) application. This study determines strength analysis in order to check specific wooden products, such as a bookcase or a shelf unit made of different materials based on wood. The study employs the Ansys Computer Aided Engineering (CAE) program.

Keywords: *Computer Aided Design (C.A.D.), Finite Element Analysis (F.E.A), Furniture design; Design optimization, Furniture stability, Wood properties*

Introduction

The design and development of the product design process comes through from specific stages. Nowadays, the computer is employed in all these stages. Appropriate tools for the study process are Computer Aided Design (CAD) programs. In these programs the designer/ engineer specifies the dimensions, shape, aesthetic and the safety of the final product with accuracy. For our needs the specifications have to be accurately provided by the designed models.

In order to evaluate if an item of furniture is suitable for production a physical prototype in real dimensions (or made to scale) is built. However, with the production of physical prototypes some problems often occur:

- 1) Additional costs in prototype development
- 2) It is expensive to produce more than one prototype to develop the final product
- 3) For different materials we have to produce more than one prototype.

A more efficient way for a designer to evaluate a 3d model (furniture) is the use of CAE software. Several studies can be executed in CAE, such as real-world forces, vibrations, heat transfer, fluid flow, and other physical effects. FEA shows whether a product will break, wear out, or work the way it was designed performing stress and thermal analyses. Stress analysis can be applied to an entire structure or to a specific part. Analysis of the entire structure is preferable being the most reliable method as opposed to looking at small separate parts of the construction.

The bookcase is a widely used item of furniture. During the product development process of a bookcase it is necessary for specific design criteria to be fulfilled. One of the design criteria with the bookcase is stability being an important structural concern. In order to check the stability of the bookcase we have to study the total load from books in each shelf. The appropriate CAE process for this problem is stress analysis. The designed model of the bookcase is made from particleboard, one of the two materials that is commonly used (the other one is Medium Density Fiberboard), but it is the most common material for structures of this type.

Materials and Methods

Finite Element Analysis

Modern designs are comprised from complex shapes and frequently from different materials. FEA is the most popular numerical method to solve complicated problems like stress - strain and thermal distribution. In this method the study starts with the approach that the CAD model is divided into mesh elements.

Even though FEA is a very powerful simulation method a critical point is the input data preparation, such as the model structure, meshing, the boundary conditions, material selection and the selected type of analysis. These boundary conditions have to be associated with the total force and with the precise movement of the parts of the model. It is possible to use separate CAE software in order to insert the model from a CAD program, or to study the model in a CAD program directly using integrated CAE software. In our study the model will be tested in Ansys software. The steps of analysis are described below.

First step: Create the 3D CAD model. The designed model dimensions are 1200 mm length, 400 mm width and 1200 mm height (Figure 1).

Second step: Defining the material/s properties. For a typical stress analysis Modulus Of Elasticity (MOE) and Poisson's ratios needs to be calculated. In our study the only material is particleboard, the MOE is $E=2500 \text{ N/mm}^2$ and Poisson's ratio is $\nu=0,2$ (DIN – Taschenbuch 60, 1999).

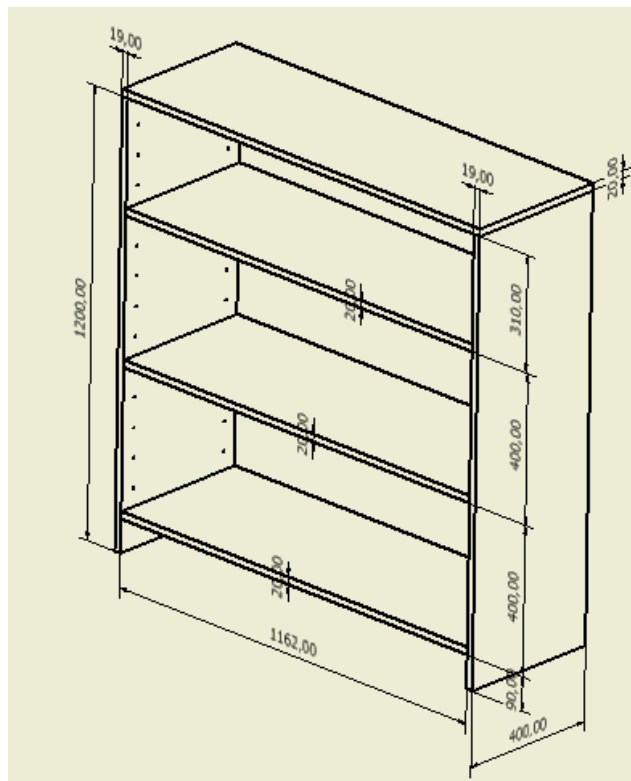


Figure 1: The bookcase 3d model

Third step: Defining a load case. The applied external load is $0,001 \text{ N/mm}^2$ which means that for each shelf the applied load is about 465N. The load is applied on the upper surface of each shelf uniformly.

Fourth step: Meshing. In order to improve productivity and simulation accuracy we are going to use shell elements, which are produced with the use of an automatic generation method of the CAE program (Figure 2).

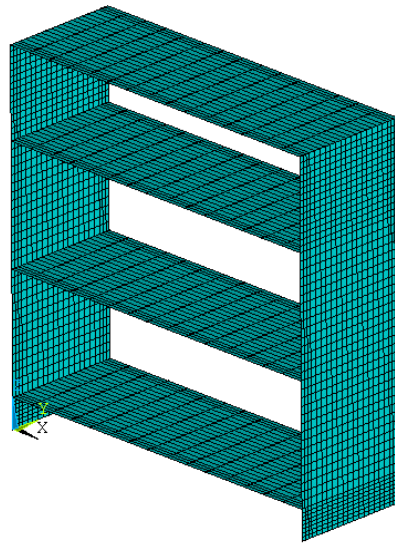


Figure 2: Meshing with shell elements

Fifth step: Defining the boundary conditions. In structural analysis, boundary conditions are applied to those regions of the model where the displacements and/or rotations are known. In this model the bottom- left and right portion of the frame is constrained completely and, thus, cannot move in any direction (Figure 3).

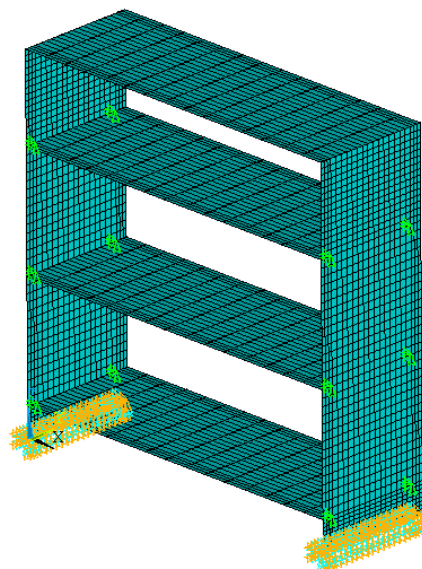


Figure 3: Boundary conditions definition

Concisely the main characteristics of the model are:

- Number of DOF's : 22440
- Number of Elements: 3486
- Type of elements: Shell elements (ANSYS Shell 63) with both bending and membrane capabilities, with six degrees of freedom at each node.
- Material properties: Linear isotropic (even if it is produced from small wood particles, it has isotropic behaviour on strength properties. It is not the same for hygroscopic properties where it behaves in anisotropic way.), MOE =2500 N/mm², Poisson's ratio $\nu=0,2$
- Boundary conditions: Nodes of the bottom of the side panels have fixed DOF's.
- The shelves are loaded with uniform pressure 0,001 MPa. The resulting total reaction force is 1417,2 N.

It is well known that joints determine the behaviour of structures like the bookcase. Thus three different model-variations are examined in this work. Their differences are noted in the way the joints between the side panels and shelves are modelled. In the first variation both the side panels and the shelves have common nodes on the appropriate lines. In the second variation they have coupled all Degrees Of Freedom (DOF's) in unique nodes. These nodes are located at the positions of the self-support elements (Figure 3). In the third variation only the translational DOF's of the same nodes remain coupled.

Results and Discussion

The first variation is the stiffest. The maximum deflection is 3,9 mm and is obtained in the middle of the shelves. The maximum stresses arise at the joints. The second variation seems to be more representative for the case that side panels and shelves are connected with mini fix bolts (Jerzy Smardzewski, and Tomasz Papuga. 2004). Maximum stress intensity is obtained near the coupled nodes (Figure 4 & Figure 5). The maximum deflection is 6,5 mm at the middle of the shelves (Figure 6).

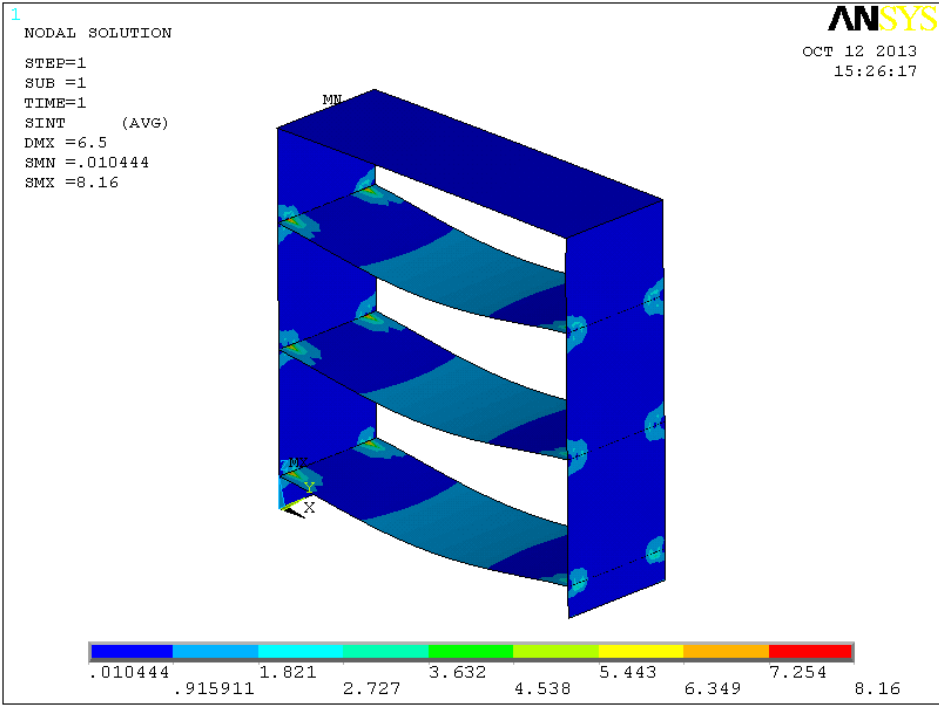


Figure 4: Stress Intensity

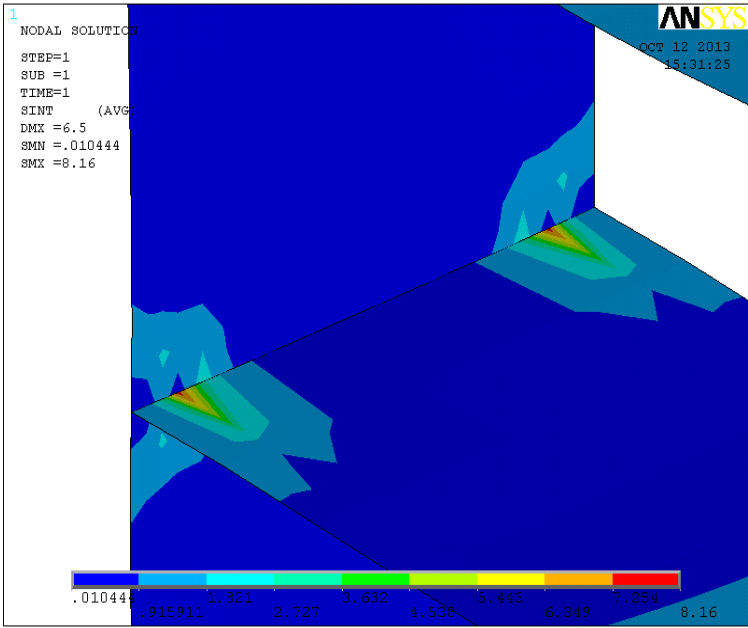


Figure 5: Stress intensity, detail view at joint nodes

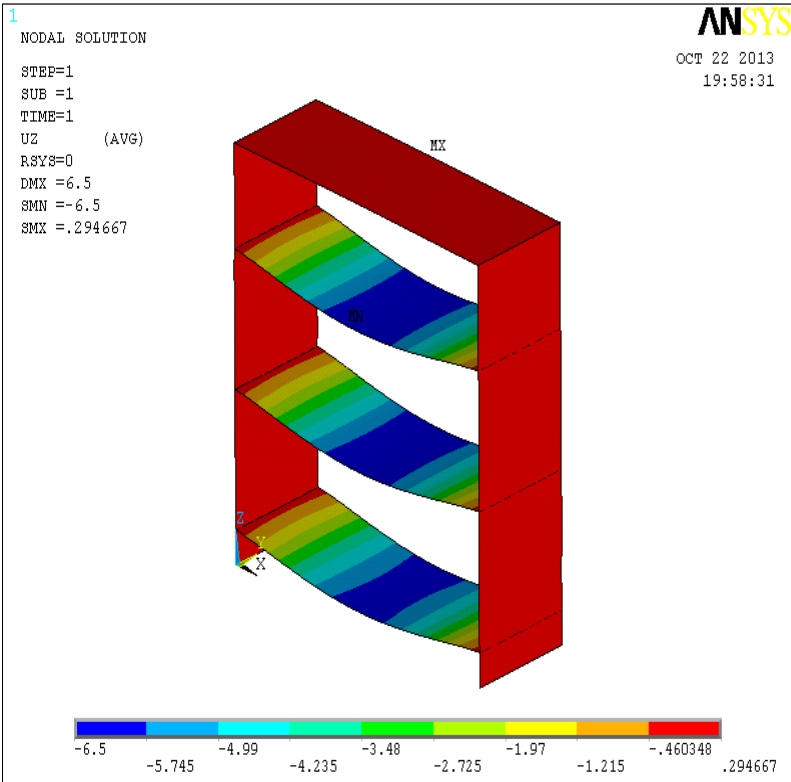


Figure 6: Deformation Z-direction (vertical) [mm]

The case where shelves are simple supported with wood cotters on the side panels is simulated with the third variation. Maximum stresses arise now at the middle of the shelves (Figure 7 & Figure 8). The deflection is about 15 mm and is more the double that of 2nd variation.

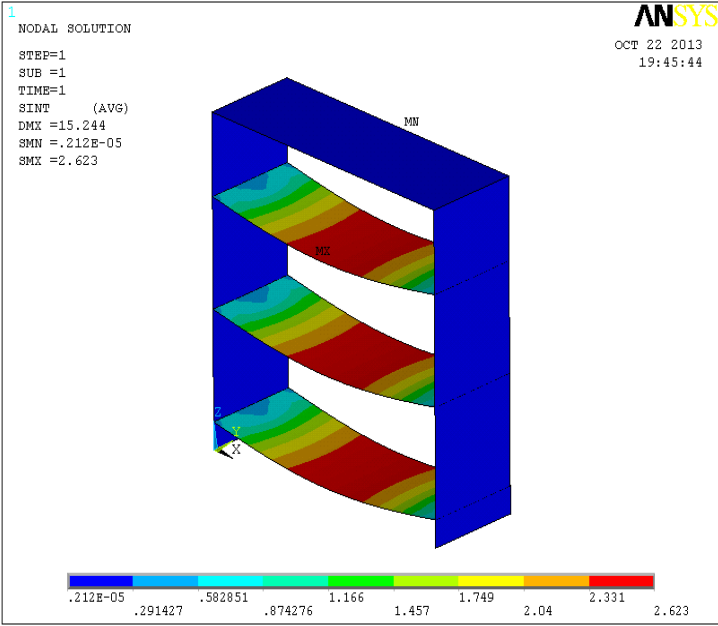


Figure 7: Stress Intensity

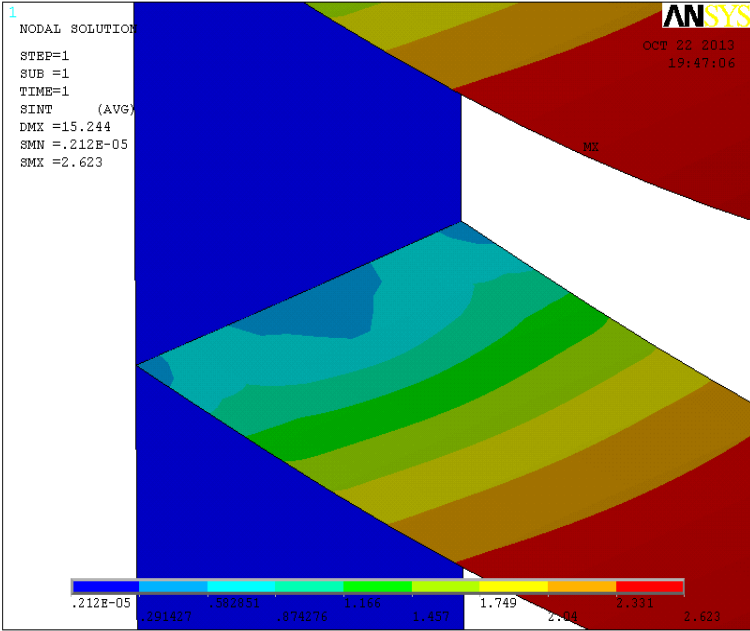


Figure 8: Stress Intensity, detail view at joint nodes

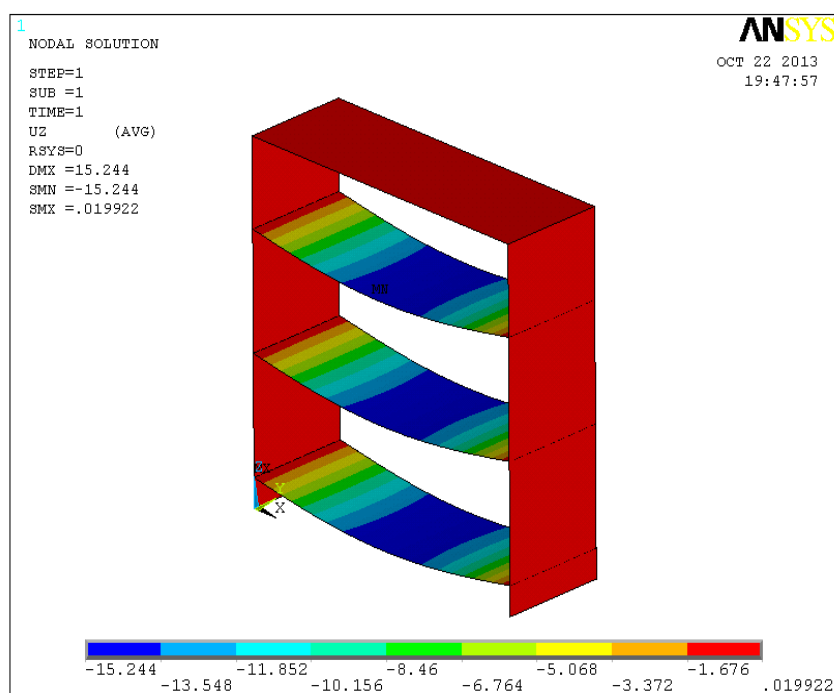


Figure 9: Deformation Z-direction (vertical) [mm]

It is obvious that modelling of the joints between side parts and shelves plays a dominant role and affect calculated stresses and deformations.

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ASEAN Furniture Industry – The Emerging Furniture Factory for the UK and European Market

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Abstract

The ASEAN furniture sector has experienced exceptional growth over the last decade, exporting almost US\$ 11.9 billion in 2012 to the global market place. Although the industry has been driven primarily low-cost input factors such as raw materials and labour, industrial productivity has also been steadily growing over the years. Despite the rapidly growing industry fuelled by rising exports, the industry is also under increasing pressure to boost productivity from the other low-cost furniture exporters in the greater Asian region, especially China. Nevertheless, the ASEAN furniture sector has shown resilience in overcoming the external threats by working through its supply and value-chains. The increasing environmental concerns and the growing demand for “green furniture” particularly from Europe and to a lesser-extent from the United Kingdom are also reshaping the sector in the region. Studies have revealed that the market in UK is showing preference towards low-cost items and items made from light-coloured wood, such as Rubberwood. In this context, the ASEAN furniture sector will continue to evolve to remain buoyant in the global furniture market.

Keywords: Value-Added, High Volume, Export Oriented, Creativity, Fashion

Introduction

Asia in recent years has experienced a major surge in the demand for its manufactured goods from the world’s largest markets in the United States, Japan, European Union and the United Kingdom. One sector which has benefited from this increase in demand is furniture that is manufactured in Asia. Breaking this trend down by nations, China and the Association of South East Asian Nations, “ASEAN”, (of which Indonesia, Malaysia, the Philippines are major members) were responsible for the most gains.

Latest statistics released by the Asian Development Bank (ADB) and the International Furniture Research Group (IFRG) showed that the total volume of furniture trade amongst the seven ASEAN Furniture Industries Council (AFIC) member countries was US\$18 billion during 2012, as compared to US\$12.4 billion in 2007. The furniture industry’s growth is driven, in part, by the bullish property and hospitality market. Strong emphasis on quality-lifestyle and increased consumer spending in the world’s largest markets have fuelled this demand. The emergence of new high-growth markets such as China, India and the Middle East (which has almost 500 million middle-income earners with an increasing purchasing-power) have opened up new opportunities for ASEAN furniture manufactures.



Figure 1: ASEAN Member Countries (Hwang, 2010)

In addition, ASEAN furniture makers are also benefiting from developments on the geopolitical-dimension. The ASEAN Free Trade Agreement, or better known as AFTA, has brought together a market of more than half a billion people, and has perhaps, created an important trade-bloc that cannot be overlooked. Trade barriers are coming down, and tariffs, including those levied on furniture, are at zero or near zero. AFTA has stimulated AFIC member countries to invest in one another. According to the International Furniture Research Group (IFRG), much of the increased furniture manufacturing capacity is foreign-owned particularly from Taiwan, China and South Korea, while intra-ASEAN investment is predominated by Singapore and Malaysia.

Highlights of the ASEAN Furniture Sector

With almost 1.7 million furniture manufacturing establishments, employing 4.1 million people, the ASEAN furniture sector must be one of the largest furniture manufacturing hubs in the world. Production capacity was estimated at US\$ 26.5 billion in 2012, with an export of US\$ 13.9 billion. However, domestic consumption of furniture is relatively small, at about 43% of total industrial production. The largest furniture market in the ASEAN region is Singapore, Malaysia, Thailand and Indonesia, which is experiencing a steady boom in new housing start-ups and hospitality/tourism sector. On the other hand, the large furniture manufacturers are Vietnam, Indonesia, Malaysia and the Philippines.

Singapore

The furniture industry in Singapore may not appear significant in the international context, and in the region it is surpassed by several countries like Indonesia, Vietnam and Malaysia. However, Singaporean firms play an important role as investors in those countries, which prove central to the development of the regional furniture industry. The factories overseas are responsible for production, while the HQs in Singapore take charge of marketing, design, and brand-management and product development. Local entrepreneurs are able to leverage the lower production costs and abundant raw materials in the ASEAN countries while developing their Singapore headquarters into a centre of competence in knowledge-driven activities (market information, product design and furniture production technology and financing).

The furniture industry in Singapore has also earned a strong reputation based on its ability to produce innovative, well designed and high-quality furniture, which are widely accepted worldwide. In 2012, the Singapore furniture industry recorded US\$ 6.49 billion in total regional sales turnover, of which, exports of Singapore-owned factories constituted US\$ 2.26 billion. Singapore's share of world furniture export market currently stands at 0.7%. The industry aspires to achieve a 2% share of the world furniture market by the year 2015 – given the relatively small population of this city-state.

Malaysia

The Malaysian furniture industry is highly export-oriented with over 85% of its production exported. Malaysia ranks as the tenth largest exporter of furniture in the world and second in Asia after the People's Republic of China, with exports to more than 160 countries. Malaysia's 2012 furniture exports reached US\$2.93 billion. There are almost 3,600 furniture and furniture-components manufacturers in Malaysia. About 400 of them are mainly larger companies which are involved in contract manufacturing or producing parts and components. Many furniture manufacturing companies have moved up the value chain from producing ready-to-assemble (RTA) furniture to manufacturing original-designed (ODM) furniture for the export market. With the furniture industry gearing towards high technology production capacity and with increasing emphasis placed on design and productivity, the Malaysian furniture industry will continue to invest in R&D as well as upgrading of their production technology and processes.

Indonesia

Indonesia has one of the largest furniture export industries in the world, exporting US\$2.89 billion in 2012. Indonesia exports 75% of furniture produced, mainly wooden furniture (65%) and rattan furniture (20%). Its global furniture market share was 2% in 2004, but by 2012 its market share has grown to 9%. Indonesia main export destinations are the US (28%), Japan (11%), and the Netherlands (7%); however, it is facing decline in demand in those countries. Consequently, it is expanding its efforts to develop markets in Europe, China, and the Middle East. According to Indonesian Furniture & Handicraft Association (ASMINDO), it is estimated that the Indonesian furniture sector comprises more than 4,500 companies and employed 4.2 million workers as of 2012.

Philippines

In the global furniture market, the Philippines is touted to be the “*Milan of Asia*”. The unparalleled design and craftsmanship of locally-manufactured furniture pieces have earned for Philippine furniture a prime spot in the world market. The Philippine furniture industry continues to be one of the country's highest export sales earners. Based on the latest statistical figures, the industry posted an export value of US\$ 1.8 billion in 2012. The furniture industry in the Philippines currently comprises about 15,000 manufacturers. The structure of the industry is dominated by small and medium-sized enterprises, with only 2% considered large companies.

Vietnam

In the past few years, Vietnam's furniture industry has experienced a very positive development. Exports have grown significantly, and Vietnam now finds itself as the second largest exporter of wooden products in Southeast Asia. In 1996, the export value of the furniture industry was only US\$ 61 million, and it reached US\$ 3.3 billion 2012, making it the largest exporter of furniture in the ASEAN region. In order to improve product quality and add-value to their products, wood processors and exporters are focusing on human resource development, management and equipment investment to turn out higher-quality products, instead of mere quantitative development as seen previously. With almost 800 factories, employing 250,000 people, the furniture sector in Vietnam is regarded an important socio-economic sector with a huge potential for further development, especially through foreign-direct investment (FDI) in to the sector.

Thailand

In 2012, Thailand exported furniture worth US\$ 700 million to its three main markets of Japan, US and the UK. The global economic uncertainty together with the political instability in the country has taken its toll on the performance of the furniture industry in the country. However, the Thailand furniture and home decorative items industry is resilient and continues to accounts for about 0.6% of Thailand's total export value. With about 5,000 furniture and decorative items manufacturing

establishments employing about 1 million people, the furniture industry in Thailand is relatively large, although predominated by small and medium enterprises (SMEs). Against the background, of a booming tourism and hospitality industry as well as the global economy which showing some signs of recovery, the furniture industry in Thailand is expected to increase its production and export significantly in years to come.

Economics of the ASEAN Region

In 2011, Indonesia’s nominal economic size (GDP) is around US\$ 847 billion, much larger than Thailand at US\$ 346 billion, Malaysia at US\$ 288 billion, and Singapore at US\$ 240 billion. Indonesia’s nominal GDP size is ranked 16th in the world, making her the only ASEAN member in the G20 group. On the other hand, in terms of economic level, ASEAN’s economic gravity direction is biased towards Singapore’s economy. According to the World Bank’s atlas method (Gross National Income/GNI per capita per year), the circumstance shows the opposite of the preceding figures. Using 2011 data, among those four countries, the highest income per capita belongs to the lowest economic sized country, which is Singapore. Singapore’s GNI per capita per year is US\$ 42,930 that is much higher than Malaysia at US\$ 8,770, Thailand at US\$ 4,440, while the lowest level among these countries is the highest economic sized country, which is Indonesia at US\$ 2,940. These two figures show that within its member states, ASEAN has a large economic sized country – Indonesia- that has a low economic level and also has a high economic level country – Singapore – yet is a low economic size. Hence ASEAN’s economic power seems to resemble a ‘donut’, lacking a country that has the characteristics of having both a large economic size and high economic level. This is in contrast to the EU’s experience with Germany, a high income country that also has a large economic size of GDP, population and geographic proportions. This ‘donut’-shape is a major challenge for ASEAN in obtaining a solid intra-regional trade and investment.

Table 1 provides a snap-shot of the important economic characteristics of the countries in the ASEAN region. It is apparent that Singapore appears to be at the high end of the league, while the others have a somewhat long-way to catch. This is often attributed to the high emphasis paid by Singapore towards human capital development and high value-added economic activities – a policy that could also be emulated by the other nations in the region.

TABLE 1: Economic Characteristics of the ASEAN Countries (Ratnasingam, 2012b)

Country	Population (million)	GDP per capita in US\$	Forested Area (million-hectares)	Furniture Exports (US\$ billion)	No. of Mills	Employment
Malaysia	28	8729	18.1	2.97	5738	116,300
Singapore	5	42,784	0.002	0.36	116	3500
Indonesia	237	2947	44.1	3.11	3428	585,000
Thailand	63	4803	27.1	0.74	7327	400,000
Vietnam	86	1224	13.1	3.48	2500	300,000
Philippines	92	2136	7.1	2.13	1200	210,000

Challenges faced by the ASEAN Furniture Sector

Despite the robust growth of the furniture and decorative items manufacturing industry in the ASEAN region, there are many emerging problems that are already affecting the future development of the industry in the region. Among the salient issues are:

Raw Materials Supply

Wood materials supply is only abundant in Indonesia, while every other country in the region including Malaysia is a net importer of wood raw materials. Inevitably, the demand for hardwoods from North America, Europe and softwoods from New Zealand and Scandinavia is on the increase in the region, up to the scale of 15 million m³ per annum in the form of sawn timber. In the case of Malaysia, there is an overdependence on rubberwood (*Hevea brasiliensis*), which has become the mainstay of the furniture industry in the country, despite an intensive efforts to boost the use of other raw materials and biomass. As rubberwood is widely regarded as a waste or by-product, furniture made from this material is often seen as a low-end product, categorically known as commodity. In fact, much of the furniture exported from Malaysia, Thailand, Indonesia and Vietnam is made from rubberwood – simply labelling the region as a producer of low-end furniture.

Workforce

Almost 59% of the total workforce in the furniture, handicraft and decorative item manufacturing industry in the region are categorized as contract workers of foreign nationalities. In fact, workers from Indonesia, Myanmar, Thailand, Vietnam, Nepal, Bangladesh and Philippines have been moving around in the region seeking better remuneration which starts at US 3.50 in Indonesia per day to about US 35.00 per day in Singapore. The mobile workforce contributes toward the unique characteristics of the workforce: (i) low skills retention, which makes it difficult to add value in the products, (ii) limits creativity and innovation, (iii) difficult to enforce safety, health and environmental regulations, and (iv) impairs productivity growth.

Overall Industrial Growth

The uncertainty surrounding the factor inputs (especially raw materials supply and workforce) have led to an industry appears to be reluctant to charter a path of steady industrial growth, despite the prevailing friendly industrial policy, conducive infrastructure and business climate, fiscal-incentives and market demand for the products. Inevitably, it is apparent that industrial growth in the furniture sector in the ASEAN region are driven predominantly by the foreign-owned companies – who tend to capitalize on the benefits and privileges offered to investors in the host country. According to the report by the International Furniture Research Group (IFRG), almost 72% of all furniture, handicraft and decorative items export from the region have originated from foreign-owned companies and not from the host-country owned companies. Such foreign-direct investments (FDI) have been shown to capitalize on local conducive business climate, striving on the array of incentives provided with minimal benefits extended to the host country.

Market Demand

The ASEAN furniture production is very much destined to the traditional markets of the world, such as the United States of America, Japan, European Union, United Kingdom, South Africa and Australia. Almost 60% of the total exports are destined to these countries, while the rest is exported to the Middle East, India and China and South Korea. In essence, it appears that the demand for furniture is still dependent on the OECD countries, while the emerging economies are slowly expanding market-share.

One of the biggest challenges of furniture exporters to the European Union and the United Kingdom is the issue of certification and environmental compliance. In fact, less than 15% of all furniture exports comply to these market requirements and as a result, is often destined to countries that are not very

environmental-sensitive. From another perspective, the amount of premium offered to the so called “green compliant” furniture is relatively small, and does not justify the additional efforts that have to be taken by the manufacturers to get certified. Inevitably, green compliant manufacturers in the ASEAN region are relatively small in number, although it is envisaged to increase in years to come due to market pressure.

Unique Characteristics of the ASEAN Furniture Sector

The ASEAN furniture sector is unique, because it embraces the two oldest civilizations in the world – Chinese and Indian. Together with a multi-ethnicity and multi-religious society – the very fabric of the ASEAN society is built on diversity and inherent beauty. The fact that the diversity in society brings about a variety of themes, tastes, fashion-elements, life-style and unique crafts is what ASEAN furniture portrays (TABLE 2). It is indeed a platform of unique furniture pieces reflective of human civilization and life-style.

TABLE 2: Unique Characteristics of ASEAN Furniture Production (Ratnasingam, 2012b)

Country	Cultural Identity	Production Capacity	Craft and Innovative Capacity	Export Highlights
Singapore	Mixed	Limited	Limited	Contemporary
Malaysia	Mixed	Large	Limited	Commodity, High Volume
Indonesia	Unique	Large	Large	Craft, Carving and Medium to High End
Thailand	Unique	Small	Large	Craft and Medium-End
Philippines	Mixed	Small	Large	Craft, Carving and High-End
Vietnam	Mixed	Medium to Large	Limited	High Volume, Labour Intensive

The fact that ASEAN furniture production is competing against each other, as clearly shown by the over-lapping furniture exhibitions held annually in Malaysia, Thailand, Singapore, Indonesia, Philippines and Vietnam suggest that there is indeed a high elasticity in supply within the region. Unless, ASEAN member states capitalize on their unique characteristics, it is inevitable that the furniture industry in the region will remain a low-wage economy, with limited potential to move along the value chain.

Conclusions

The ASEAN furniture industry is a large socio-economic sector in the region and will continue to remain so for many years to come. However, in order to move up the value-chain and transform the industry into high value-added, fashion oriented furniture, efforts must be taken by the ASEAN furniture manufacturers to explore and capitalize on their unique characteristics in order to ensure a sustainable and equitable industry. Against a global furniture market of almost US\$ 279 billion 2012, the ASEAN furniture industry is relatively small, but remains a highly export oriented region to the world marketplace that cannot be overlooked by any of the important furniture markets for many more years to come.

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EU Timber Regulation – Effects on Products and Furniture

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Abstract

The furniture industry, although the user of many materials, has an important role to play to ensure that the timber and wood based products it uses is procured from legal and sustainable sources. Recent legislation introduced by the EU now makes it a crime to import wood based material from illegal sources. The importer of the material into the EU or the ‘first placer’ on the market (known as the operator) and the user within the EU ‘a trader’, now have obligations under the EU Timber Regulation – Regulation (EU) No 995/2010. Those obligations include:

Operators – those who place timber products on the EU market for the first time – are required to exercise ‘due diligence’.

Traders – those who buy or sell timber and timber products already on the market – are required to keep information about their suppliers and customers to make timber products easily traceable.

It is therefore in the industry’s best interest to ensure that the wood based products they buy are from sources with established provenance and transparency regarding its legality, species identification and country of origin. Some elements of the industry have been practising this kind of procurement for some time, buying timber products only from independently certified sustainable sources. In general, this practise is limited to those parts of the industry that supply large corporate bodies or Government departments who demand certified products. Other sectors of the industry, including the manufacture of domestic furniture, appear to be way behind the contract sector for example, due to a lack of demand for sustainable products, from the end user or consumer.

Keywords: *chain of custody, deforestation, timber, wood based products, EU forest regulations, forest certification*

Introduction

The world’s forests perform a number of critical functions both globally and locally. They are fundamental to regulating the earth’s climate, preserving rich sources of biodiversity and providing prosperity for many local communities. Today many of the world’s natural forests have been lost with the majority of losses occurring over the last 100 years. Although there are a variety of reasons for the continued destruction of natural forests, including agriculture and infrastructure expansion, one of the biggest threats remains from unsustainable forest management practices and illegal logging.

Illegal logging has severe economic, environmental and social impacts: it is associated with deforestation and climate change, it can undermine the efforts and livelihoods of legitimate operators, and it can also contribute to conflicts over land and resources. It is therefore critical for the future of global forests that all timber procurement is undertaken in a sustainable manner.

In contrast, the market for responsibly sourced timber and timber products has been growing over the last 15 years, particularly the demand for third party certified sustainable timber and timber products. Businesses, Governments and local authorities are now specifying the supply of legal and responsibly sourced timber in their procurement policies. As the fourth largest net importer of timber in the world, the UK industry must now take responsibility to ensure that the timber and wood-based products it uses comes from legal and sustainable sources. It also needs to be fully conversant with how current and future legislation will affect the supply and sale of these products across the timber and wood based product sectors.

Back in 2008, the European Commission proposed a regulation to help reduce illegal timber products coming into the EU. In October 2010, the EU Council of Ministers formally adopted the Illegal Timber Regulation (ITR) – now commonly called the EUTR.

On 3 March 2013, Regulation (EU) No 995/2010 was implemented, regulating the obligations of operators who place timber and timber products on the market. The EUTR applies to all the EU countries. It is applicable to organizations that trade in a wide range of wood-based materials, including materials made from pulp and paper. Up until the introduction of the EUTR in 2010, there has been no specific legislation in the EU to prohibit the trade in illegal timber or to make organizations take significant steps to assure that the timber they trade, originates from legal sources.

Although many companies have responsible procurement policies and favour timber from certified sources, this has been to date, on a voluntary basis only. Timber importing companies who are members of the UK Timber Trade Federation (TTF), for example, already work to a pre-determined Responsible Procurement Policy that is third party audited. Buying material from these companies will mitigate the risk of buying illegal timber. However, many companies, including furniture manufacturers and retailers, may be importing timber directly from outside the EU, either in the form of rough sawn timber, furniture components or finished goods.

The introduction of the EUTR now makes it a necessity for organizations within the furniture sector to exercise due diligence with regard to the purchase of timber and timber products in their supply chains. Beyond achieving legal compliance within the UK market place, other benefits of adopting practices that lead to the sourcing of both legal and sustainable timber are:

- satisfying the increasingly stringent sourcing policies of their customers;
- mitigating the business risk of potential supply failure that can arise through sourcing illegal timber;
- differentiating their brand for responsible customers and consumers; and
- avoiding prosecution and bad publicity.

Those organizations that to date have voluntarily undertaken responsible timber sourcing have raised the bar for others. The introduction of the Regulation now makes it a crime to place illegal timber on EU markets and all organizations affected by the Regulation have to adopt practices to assure that they trade and supply legal timber, as a minimum.

The Regulation also affects companies outside the EU as their products may be imported into the EU further down the supply chain. The EUTR covers a broad range of timber products including solid wood products such as furniture, flooring, plywood, pulp and paper. Similar legislation is already in place in the USA via the Lacey Act and Australia and Japan appear ready to introduce legislation along the same lines as the EUTR.

Method of complying

To comply with the regulations, those companies that are ‘first placing’ the timber products on the EU market (both imported and domestic) need to take important measures to verify the legality of the timber or timber products they purchase either for distribution or use. These companies are known as Operators. More specifically, the Regulation requires these operators, to implement a Due Diligence System (DDS). This DDS will be the procedures inspected by the competent authority to determine whether sufficient steps have been taken to prove that the timber is from a legal source. The competent authority in the UK is the National Measurement Office.

Companies trading wood products within the EU (known as traders) are responsible for keeping records of their suppliers and customers to allow for traceability.

There are however, some exemptions from the regulation. These include timber covered by FLEGT licences (Forest Law Enforcement, Governance and Trade) or CITES (The Convention on International Trade in Endangered Species of Wild Fauna and Flora). These licenses and certificates fully meet the EUTR requirements and means:

- a) That operators who place products on the market covered by such documentation do not need to conduct due diligence on those products, apart from being able to demonstrate coverage by valid relevant documentation; and
- b) That any such product will be considered by Competent Authorities to have been legally harvested and will not carry any risk of breaching provisions of the Regulation, prohibiting placing illegal timber on the market.

This is because legality verification controls - and hence due diligence - will have been carried out in the exporting country in accordance with the Voluntary Partnership Agreements between those countries and the European Union and the resulting timber can be considered risk-free by operators. At the time of writing, no FLEGT timber is available for sale, although the first shipments are expected in the Spring of 2014.

Recycled material is also exempt from the regulations.

What is the Role of Forest Certification?

There are two globally recognised forest certification schemes, PEFC (Programme for the Endorsement of Forest Certification) and FSC (Forestry Stewardship Council). Between the schemes 10% of the world's forests and approximately 25% of industrial roundwood are certified as being legal and sustainable. Both schemes have robust chain of custody systems that allow timber based products to pass through the entire supply chain whilst being tracked. This is supported by independent third party audits. However, there is no automatic "green light" for certified products as the European Commission cannot formally endorse non-regulatory instruments. The EUTR however recognizes the added value of certification as a potential tool for risk assessment and mitigation and the regulation states that *"In order to recognize good practice in the forestry sector, certification or other third party verified schemes that include verification of compliance with applicable legislation may be used in the risk assessment procedure."*

The European Commission also advises that, when assessing the risk of a product, companies should take into account, amongst other things, whether a product is certified by forest certification systems such as PEFC. In practice, the Commission explains, companies *"may rate credibly certified products as having negligible risk of being illegal, i.e. suitable for placing on the market with no further risk mitigation measures, provided that the rest of the information gathered and the replies to the risk assessment questions do not contradict such a conclusion"*.

Credible certifications systems are categorised as meeting the requirements of Article 4 of the EUTR implementing regulations. Both PEFC and FSC were independently assessed to meet these requirements.

The EUTR Guidance document contains four conditions that companies may use to assess the credibility of a third-party certification system such as PEFC. These are:

- PEFC's system of requirements is publicly available and requires compliance with all relevant requirements of applicable legislation.
- PEFC requires certification bodies to undertake annual checks, including field visits, to verify compliance with certification requirements, including the applicable legislation.

- PEFC’s Chain of Custody certification, which is verified by certification bodies, traces timber and forest products through the entire supply chain. All timber must be harvested in accordance with applicable legislation, originating either from sustainably managed, PEFC-certified forests or from forest management activities that are considered as non-controversial and in compliance with applicable legislation.
- PEFC’s Due Diligence System, which is an integral part of Chain of Custody certification, provides controls to ensure that the risk of timber from controversial sources (including illegal harvesting) entering the supply chain is minimized

Additionally the regulations ask if the certification or other third party verified schemes are compliant with international or European standards (e.g. the relevant ISO-guides, ISEAL Codes). PEFC requires certification bodies, auditors, and the process of certification and accreditation to comply with the respective ISO Standards and Guides. For information, PEFC is officially affiliated with ISO, the International Accreditation Forum (IAF) and the European co-operation for Accreditation

To further assist organisations complying with the EUTR, PEFC revised its 2010 Chain of Custody standard and published a new standard in May 2013. The new standard has altered certain definitions to meet the EUTR criteria and also changed the Due Diligence element, so that this section is fully aligned with the requirements of the Regulation.

Since the PEFC DDS is in line with the EUTR requirements for due diligence it may now be used to demonstrate the product’s compliance with the Regulation. The procurement of certified material represents a “negligible risk” so there is no need to perform further risk assessments. The only condition is the absence of any “substantiated concerns” that the company may be aware of about the supply chain or product. If these claims are verified further risk assessments will be necessary.

In practice the DDS can be quite straightforward, but it depends on the way the Chain of Custody standard is used. If the company’s chain of custody certificate is limited to the purchase and sales of PEFC Certified products, the DDS involves little more than obtaining (or having access to) the information on the tree-species and origin related to your supplies. However, the DDS also allows companies purchasing non certified material to conduct risk assessments, via the DDS, on the material to meet both the EUTR requirements and to be able sell the material as “PEFC Controlled Sources” or to use in a certified percentage mix claim within the conditions of the Chain of Custody Standard.

Conclusions

The introduction of the EUTR from March 3rd 2013 changes the way that companies who purchase, use and sell timber based products, approach procurement from outside of the EU. All companies must find a way to ensure that they know their supply is legally sourced and have access to the correct information as proof. Fines and confiscation may result for any organisation that has not undertaken sufficient due diligence, although this may be minor compared to the reputational risk the company is exposing itself to.

Although forest certification schemes have no green light to ensure compliance they can give negligible risk and recent changes made to their standards now ensure full alignment with the regulations. The added incentive for purchasing material labelled by one of the globally recognised schemes is not just confidence of legality but also sustainability. This is crucial if the industry demands an on-going supply of the world’s most versatile, aesthetically attractive and naturally renewable manufacturing material.

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New Woods for use in Furniture

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Abstract

The benefits of using wood for furniture are reviewed as is the need for new timbers for furniture in light of the high level of demand for timber and the over exploitation of certain species which has meant these are no longer commercially available. Plantations of fast growing clones and hybrids together with modified wood products offer alternative raw materials for furniture manufacture. The properties of these species are reviewed and their potential for use in interior and exterior furniture discussed. Projects and companies that have used modified wood products to manufacture furniture to date are described.

Keywords: Red Grandis, Lyptus, Accoya, Kebony, Lignia, Modified-wood.

Introduction

Timber remains the material of choice for furniture because it has inherent beauty, is easy to work, is durable, is strong but light and is a good insulator meaning it is comfortable to touch irrespective of the surrounding air temperature. Also, as a renewable material, timber has excellent environmental credentials provided it is sourced from sustainably managed forests.

The number of timber species is large with over 60,000 hardwoods and 500 softwoods. Each species has its own unique set of properties. The figure, colour, texture and grain orientation of some species gives their wood natural beauty making these prized for furniture applications, with aesthetic features enhanced through the method of cut, lay-up and finish. Veneer cutting continues to provide an efficient way of recovering large volumes of decorative wood from logs, with veneers used to overlay wood-based panels for interior furniture.

Other wood properties such as strength, hardness, ease of working and stability may also be important (Webster *et al.*, 1984). For solid wood furniture, species that combine suitable aesthetics with specific other properties are valued and sought. Solid wood furniture is considered to be of higher quality when used for interiors. Exterior furniture presently requires solid sections of timbers to be used, although development of 'exterior adhesives' has allowed larger sections to be produced by laminating smaller pieces. This allows for better resource efficiency but also enables more stable sections to be manufactured through laying up grain in alternate directions so that any moisture movement in individual pieces restricts the movement of the adjacent timber. For outdoor furniture where wood is exposed to long-term wetting stability and durability against decay are important if furniture is to provide a long service life. It is for this reason that hardwoods such as oak, teak and karri have often been selected for the manufacture of exterior furniture.

The high level of use of some species in the past has resulted in some of these being overharvested and some are no longer commercially available. This has led to the search for alternative sustainable supplies of furniture timbers.

To meet this demand some 'high-value' species are now grown in plantation. This enables large volumes of timber to be sourced from a small well managed area of forest as is the case in the tropics with Acacia, teak and iroko and in temperate countries with European oak. In some instances these plantations were originally set up for the production of non-wood products such as natural rubber or mangoes, with these becoming sources of rubberwood and mangowood respectively once latex and mango yields have reduced to levels that warrant felling of trees and re-planting. In other cases,

'lesser-used' species considered to have suitable properties for furniture can still be sourced from natural forests (Opoku, 2007).

For some species grown in plantations, young trees are raised from seed, whereas others are cloned from tissue removed from specific parent trees. In both cases, material for seedlings is removed from parent trees that exhibit good growth traits and good wood quality. Growth traits valued include a good rate of growth, resistance to pests and straightness of the stem. Wood quality traits valued include strength, straightness of grain and heartwood colour. In some cases hybrid species have been produced by crossing trees from two different species in order to combine the best traits from the parent species.

Brand names have sometimes been given to timber harvested from trees sourced from specific plantations. For example Red Grandis[®] is the name applied to *Eucalyptus grandis* sourced from sustainably managed plantations in Uruguay (<http://redgrandis.com/about/>). Lyptus[®] is timber harvested from sustainably managed plantations of a hybrid of *Eucalyptus grandis* and *Eucalyptus utrophylla* grown in Brazil. Both timbers are available as FSC or PEFC certified and have excellent growth rates.

Other 'recently developed' timbers that offer potential for use in furniture are the modified woods. As the name suggests, these are timbers whose properties have been altered. In most cases the modification processes improve the properties of the 'parent' timbers. Properties improved may include colour, hardness, strength, stability and durability depending on the modification process and the timber species modified.

There are three main wood modification methods, chemical, thermal and impregnation. A review of wood modification methods, products and their end-uses has been provided in Anon, 2010 and Anon, 2013. All modified woods are produced under closely controlled conditions to ensure these have consistent properties. Manufacturers have quality control procedures in place which include batch sampling and testing with these processes independently audited.

In addition, extensive independent testing has been undertaken to establish the properties of each brand of modified wood. Standard tests allow for measurement of properties such as strength, moisture movement and hardness and data obtained can be compared directly against that for commercial wood species. This has enabled modified wood manufacturers to demonstrate that properties of their products are as good as or better than species used for furniture at present. Commissioning furniture designers to produce 'one off pieces' has been used to demonstrate that the modified wood can be worked and that a suitable quality of finish can be achieved.

Chemical modification is the process by which chemicals sometimes derived from agricultural wastes are permanently combined with the wood structure. The sites in the wood cell wall that bond with water and result in wood swelling and decay are effectively 'blocked'. These processes require impregnation of the wood structure with the modification chemicals and for that reason chemical modification has been carried out on permeable timber species such as radiata pine, southern yellow pine, beech and alder. Properties improved include durability, stability, coating performance and hardness. It may in some cases have little influence on wood colour, has little effect on UV stability, machining or gluing.

Thermal modification is a process by which timbers are heated at high temperatures under controlled conditions. This results in changes in the chemistry of wood making it more stable and durable. It also darkens the wood throughout its section making lighter coloured temperate species resemble tropical hardwoods. Although thermal modification processes are known to result in small reductions in wood strength they have little effect on surface hardness or UV stability. There are several thermal modification processes that have been applied to a wide range of timber species. Since each thermal modification process has a different influence on wood properties it is important that product specific information is sought.

Modification by means of resin impregnation involves filling voids in wood with chemicals that block the uptake of water and harden the wood. Since photo stable dyes may be added along with the resins, this type of modification has been used to enhance the beauty of impregnated woods as well as improve durability and hardness.

To date wood modification has normally been used to enhance the properties of wood species considered to be of ‘low value’ in terms of their properties. Their properties when unmodified make these species less desirable for furniture applications. Modification processes not only improve specific wood properties which can extend service life of furniture, but they offer environmental benefits.

Since timbers used for wood modification are harvested from well-managed plantation forests, it means modified woods are available FSC or PEFC certified. Also, there are no issues surrounding the disposal of furniture at end of life.

This paper examines the potential for using these new timbers for furniture.

Methods

The properties of Red Grandis[®], Lyptus[®] and modified woods were reviewed by examining technical data presented in independent test reports, through discussions with timber suppliers and specialist literature (e.g. Bootle, 1985). The properties of these new timbers that relate to their use as interior and exterior furniture are described. Where modified woods have been used for furniture in specific projects these have been identified.

Findings

The properties of Red Grandis[®], Lyptus[®] and the various modified wood products are presented in the following tables. Table 1 lists selected properties of new woods. These properties are considered important for woods used in interior furniture. Table 2 does the same for exterior furniture.

Projects/products using these new timbers are identified in Table 3.

Table 1: The properties of Red Grandis[®], Lyptus[®] and modified wood products against those considered important for use as interior furniture

Product	Type of modification	Species modified	Property							
			Stability	Strength	Hardness	Ease of machining /working	Splitting	Ease of Gluing	Colour	Ease of finishing
Red Grandis [®]			+	+	++	+	-	+	Red brown	+
Lyptus [®]			+	+	+	+	NA	NA	Red brown	+
ThermoWood [®] S	TM	Softwood	+	-	0	-	-	-	Brown	+
ThermoWood [®] D	TM	Softwood	+	--	0	-	--	-	Dark Brown	+
Plato [®] WOOD	TM	Softwood & Hardwood	+	++	0	0	+	+	Brown	+
Lunawood [®]	TM	Softwood	+	NA	NA	-	NA	--	Brown	+
Accoya [®]	CH	Softwood & Hardwood	+	+	++	0	0	-	No change	++
Kebony [®]	CH	Softwood & Hardwood	+	+	++	0	0	-	Dark Brown	++
Lignia	IM	Softwood	+	NA	NA	+	NA	+	Various	+
LigniaXD	IM	Softwood	+	NA	++	NA	NA	NA	Various	NA
KEYWOOD TM	IM	Softwood	+	0	+	0	0	0	Dark Brown	NA

Where TM = Thermal modification CH = Chemical modification & IM = Resin impregnation & -- = significant reduction in property, - = reduction, 0 = No change or difference, + = slight improvement, ++ = considerable improvement and +++ = significant improvement. NA = Not available in literature

Table 2: The properties of Red Grandis[®], Lyptus[®] and modified wood products against those considered important for use as exterior furniture

Product	Type of modification	Species modified	Property								
			Stability	Durability against fungi	Strength	Hardness	Ease of machining/working	Splitting	Ease of Gluing	Colour fastness/weatherin	Performance of coating
Red Grandis [®]			+	DC3	+	++	+	-	+	NA	NA
Lyptus [®]			+	DC3	+	+	+	NA	NA	0	0
ThermoWood [®] S	TM	Softwood	N S	DC3	NS	NS	NS	NS	NS	NS	NS
ThermoWood [®] D	TM	Softwood	+	DC2	--	0	-	--	-	0	+
Plato [®] WOOD	TM	Softwood & Hardwood	+	DC2	++	0	0	++	+	0	+
Lunawood [®]	TM	Softwood	+	DC2	NA	NA	-	NA	--	0	+
Accoya [®]	CH	Softwood & Hardwood		DC1	+	++	0	0	-	0	+++
Kebony [®]	CH	Softwood & Hardwood		DC1	+	++	0	0	-	0	++
Lignia	IM	Softwood	N S	NA	NS	NS	NS	NS	NS	NS	NS
LigniaXD	IM	Softwood		DC2	NA	++	NA	NA	NA	+	NA
KEYWOOD TM	IM	Softwood		DC1	0	+	0	0	0	+	++

Where TM = Thermal modification CH = Chemical modification & IM = Resin impregnation & - = reduction 0 = No change or difference, + = slight improvement, ++ = considerable improvement and +++ = significant improvement. NS = Not suitable

DC = Durability Class where DC1 = V Durable, DC2= Durable and DC3= Moderately durable. A DC 1 timber provides a 60-year service life above ground outdoors in the UK uncoated whereas a DC3 timber provides for 15-years life

Table 3: Furniture manufacturers/projects using modified wood products

Modified Wood Product	Project/Link	Description
ThermoWood® D	http://www.thermowood-furniture.eu/en/	Czech manufacturer of exterior garden furniture using heat-treated pine
Plato® WOOD	http://www.platowood.nl/projecten/Ov erige/alle/192/Plato%20art%20in%20Keukenhof.html#project-192-Plato art in Keukenhof	Exterior sculpture of dog made up of thermally modified Frake (<i>Terminalia superba</i>) a sustainably sourced tropical hardwood from W. Africa
Lunawood®	http://www.lunagarden.fi/	Finnish manufacturer of exterior garden furniture using heat treated pine
Accoya®	http://www.accoya.com/projects/	Examples of acetylated softwood and maple as solid and laminated sections coated with stains and paint used in several exterior applications
Kebony®	http://kebonny.com/en/?c=projects&cc=419	Examples of Kebony maple and Southern Yellow pine used for exterior furniture in a number of design projects/competitions
Lignia	http://www.lignia.com/press-news/the-start-of-a-new-journey-fw	Used by ASPACE to manufacture interior furniture Examples of furniture submitted for design competition

Discussion

High global demand for wood and limitations on its supply means that in the future alternative sources of timber will be required for furniture. There will also be a requirement to better utilise the resource, extend the lives of furniture products and re-use and recycle at end of life.

Red Grandis® and Lyptus® are brand-names for two Eucalypts available from large well-managed fast-growing plantations in S. America. Wood from these trees is of high quality as a result of the selection of stock from parent trees that express suitable growth and timber property traits and by careful management. This results in high yields of straight-grained ‘knot-free’ timber that has already proved suitable for decorative applications such as flooring and furniture.

Although Grandis® and Lyptus® have many properties that make these suitable for interior furniture; both species are prone to moisture movement and are only moderately durable against decay fungi (Durability Class 3 (DC3)). This means that for exterior furniture they will only be expected to provide a service life of 15-years according to BS 8417 (Anon, 2011).

Modified woods on the other hand are stable and durable which enables these to provide long service lives even when exposed to long term wetting. The stability of some modified woods is better than species such as teak a timber valued for its low movement. This means that furniture manufactured from modified woods is less prone to movement related defects such as checking/fissuring, joint opening and cupping. Greater stability also improves coating performance when applied to modified woods extending periods between maintenance.

Those modified woods that are classified as Very Durable (Durability Class 1 (DC1)) can provide service lives of up to 60-years in uncoated exterior furniture. Modified woods remain susceptible to weathering when exposed outdoors and their surface colour gradually fades to silver grey as for unmodified woods. This rate of colour change can be reduced through regular application of coatings containing UV filters.

To date modified timbers have mostly been used for the design and manufacture of bespoke pieces of furniture (see Table 3). This is in part related to the high material costs of most modified wood products which are comparable in price to high-value tropical hardwoods against which they compete.

The one exception is Thermowood[®], its lower cost and properties have made it suitable for commercial production of garden furniture.

The excellent sustainability credentials and long term performance that can be achieved using modified wood products may result in these becoming ‘more mainstream’ particularly for exterior furniture production in the future.

Conclusion

The sustainability credentials and properties make the commercial Eucalypt brands Red Grandis[®] and Lyptus[®] and a wide range of modified woods suitable for use for interior furniture. Those modified wood products that are durable and stable offer great potential for use as exterior furniture in the future.

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When local industry meets global forces, or what we might learn from furniture manufacturing in Shizuoka, Japan

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Abstract

Shizuoka, a city partway between Tokyo and Nagoya in Japan's eastern industrial belt, has been home to furniture manufacturers since the seventeenth century. At its heyday, hundreds of SMEs and micro-businesses produced mirror stands and storage chests for the national market, some employing then-advanced machinery for mass production, others creating bespoke products by hand.

Today, twenty years of economic stagnation, offshore competition, changing consumer tastes and distribution systems and an ageing workforce have left the industry a shell of its former self. At the same time, however, some firms are thriving thanks to strategies like targeting niche markets, and local and regional government are keen to identify further strategies to support Shizuoka through its industries.

This paper takes the Shizuoka furniture industry's decline and transformation as a case study for understanding the impact of market conditions, environmental regulations, industrial policy and global trade on furniture as a local industry in advanced industrial nations. It is grounded in two larger perspectives: the social, economic and cultural history of Shizuoka's furniture industry and Japanese furniture industry conditions nationally, now.

Based on interviews with manufacturers, local and regional government officials, industry organisations and consultant designers, site visits and research into industry publications, the paper identifies key actors in the Shizuoka 'ecosystem'. It suggests that stakeholders must cooperate in developing local and regional industrial policy aimed at supporting sustainable industry as part of sustainable communities – whether in Japan, Britain or elsewhere. And argues that ultimately, adaptability is key for manufacturers seeking to thrive in globalising networks, with local and corporate heritage a potentially rich source of ideas.

Keywords: *Local industry, social and economic sustainability, SMEs, manufacturing, industrial policy, furniture*

Introduction

In 2012, I spent several months in Japan researching local furniture industries: how they fared during Japan's postwar economic growth period, the challenges and opportunities they face now and how policy-makers at national, regional and local levels might support them. When not in the archive, I spent days talking with makers, entrepreneurs, designers, engineers, industry association representatives and local and prefectural government officials about their work.

As I travelled between regions, one word regularly came up in discussions: 'Nitori'. Nitori, I soon learned, is that dreaded entity in the furniture world: a large company selling inexpensive offshore-manufactured furniture from suburban 'big box' locations, with which low-end domestic producers simply can't compete.¹

¹ Somewhat like IKEA, Nitori owns and directs all aspects of business from production to sales, allowing for high-volume production, reduced costs and lower prices for consumers. Its in-house designs reflect contemporary Japanese consumers' taste for sleeker, more 'modern' furniture, sometimes in the style of popular local manufacturers, but are made largely in South-East Asia, closer to materials suppliers and with low labour costs, then imported and sold by Nitori, so that profits remain in-house rather than going partly to distributors and retailers. Nitori (nd) Bijinesu moderu: Seizo butsuryu kourigyo, http://www.nitori.co.jp/about_us/business_model/, last access 7 November 2013.

Furniture manufacturers' reaction to Nitori was one of only several very visible signs of the hollowing-out of Japan's furniture manufacturing regions. In Shizuoka, once a major producer of mirror stands and storage chests, an estimated 82% of manufacturers have closed since 1980.² Woodworking has been part of Shizuoka's substantial industrial base since the seventeenth century. In the twentieth century, the city was a major wood furniture manufacturing centre. Today, twenty years of economic stagnation, offshore competition, changing consumer tastes, an ageing workforce and shifts in national and regional industrial policy to emphasise other industries have left the wood furniture manufacturing industry a shell of its former self. But some firms are thriving despite Nitori and its ilk. And both local and regional government officials are determined to do what they can to support sustainable light industry in the city.

This paper takes Shizuoka furniture's transformations as a case study for understanding the impact of external factors such as demographic and other market conditions, environmental regulations, industrial policy and global trade networks on local industry in advanced industrial nations. It looks particularly at moments of transition: how furniture firms have responded to changing conditions, and lessons we might take from these responses. Analysis is grounded in three larger perspectives: the social, economic and cultural history of Shizuoka's furniture industry; Japanese furniture industry conditions nationally; and the idea of 'applied history', or what historical contextualisation and comparison can contribute to decision-making today. Predominantly qualitative, historical methods include interviews, site visits, archival research into industry publications and internal documentation alongside analysis of industry statistics.

Shizuoka furniture's story raises clear parallels, comparisons and links with regions and issues in the UK and elsewhere, and the rich body of published research in the economics, geography, history and sociology of industrial policy, regional development, sustainability, planning studies, industrial organisation and management studies could be introduced to analyse it further. The economic and business history of Japanese manufacturing regions is another important secondary literature.³ The story could also be reframed in the context of wood utilisation and forestry policy, historically and today. Finally, the story could be told comparatively, in relation to existing research on Japanese furniture regions' strategies to combat industrial design.⁴ However, this paper focuses on the Shizuoka case study. Through a focused narrative of Shizuoka furniture's historical fortunes and current-day practices, it presents manufacturers' strategies for countering a challenging environment and outlook, and aims to stimulate thinking about how manufacturers, policy-makers and local residents alike might revitalise historical manufacturing regions.

The paper begins with Shizuoka furniture's history and position in Japanese furniture manufacturing, then describes the industry today, including three case studies in how manufacturers are adapting to

² This figure includes only companies of over four employees, which dropped from 624 companies in 1980 to 114 companies in 2012. Keizai Sangyo Sho (1981) *Kogei tokei chosa, Showa 55-nen kakuho, Shichoson-hen*. Keizai Sangyo Sho, Tokyo, cited in Kumeno, H. ed. (2010) *Sanchi no henbo to jinteki nettowaku: Asahikawa kagu sanchi no chosen*. Ochanomizu Shobo, Tokyo, Table 1-1, 17, and Keizai Sangyo Sho Daijin Kanbo Chosa Tokei Gurupu (2014) 'Heisei 24-nen Kogyo Tokei-Hyo 'Kogyo Chiku-Hen'', published 25 April 2014, available at <http://www.meti.go.jp/statistics/tyo/kougyo/result-2.html>, last access 26 June 2014. Japanese Ministry of Economy, Trade and Industry (METI) industrial census statistics do not include micro-businesses of 1-3 employees so do not represent the complete furniture industry ecosystem, but remain a useful indication of industry health.

³ There is a large body of Japanese language scholarship on Japanese regional manufacturing, or *jiba sangyo*. In English, see Tanimoto M. ed. (2006) *The Role of Tradition in Japan's Industrialisation*. Oxford University Press, Oxford; Howell, D. (1995) *Capitalism from Within: Economy, Society, and the State in a Japanese Fishery*. University of California Press, Berkeley; Wigen, K. (1995) *The Making of a Japanese Periphery, 1750-1920*. University of California Press, Berkeley; Rausch, A. (2010) *Cultural Commodities in Japanese Rural Revitalization: Tsugaru Nuri Lacquerware and Tsugaru Shamisen*. Brill, Leiden; and Izushi, H. (2001) Limits of local networks: Use of local and external knowledge in technological adaptation in the Seto ceramics industry. In *Global Competition and Local Networks* R. McNaughton and M. Green eds. Ashgate, Aldershot, 197-215.

⁴ See for example Hiroyuki Noguchi's work on the Okawa region, including: Noguchi, H. (2001) Fukyo-shita no kagu sangyo to Okawa kagu no genjo, *Chusho shokogyo kenkyu* 68, 58-68; Noguchi, H. (2001) Okawa no kagu sanchi to chiiki keizai, *Jumin to jiji* 460, 54-57; Noguchi, H. (2006) Fukyo-shita no kagu sangyo, *Saga daigaku keizai ronshu* 38:6, 83-94.

today's challenging climate. Ultimately, it points to adaptability and the ability to update unique attributes as key factors for manufacturers wishing not only to survive but to thrive in changed environments: whether in Japan, the UK or other advanced industrial nations.

2. Shizuoka's furniture industries

The city of Shizuoka is located halfway (170 km) between Tokyo and Nagoya, at the centre of Japan's industrial belt on the east coast of the country's largest island, Honshu.⁵ In 1606, retired *shogun* Tokugawa Ieyasu established a secondary court in present-day Shizuoka, then called Sunpu.⁶ In addition to the direct patronage of the Tokugawa family, Japan's rulers in the seventeenth-nineteenth centuries, Shizuoka was blessed geographically. The city's location gave manufacturers unusually convenient access to two major markets, and its siting on the alluvial plain below Mount Fuji meant good agriculture and – for furniture manufacturing and other woodworking – rich timber supplies. By the nineteenth century it was a wealthy castle and market town, a regional administrative centre and home to manufactures including lacquerware, decorative woodcarving and chest (*tansu*) production.⁷

The mid-nineteenth century saw Japan's ruling system challenged by internal dissent and foreign powers, resulting in regime change known as the Meiji Restoration in 1868. As the new regime actively re-engaged in global trade and diplomacy to establish Japan as an international power and gain foreign currency, light industry exports became major business and the Shizuoka industries gained an important new market. Exports to Europe and the US proved particularly lucrative for Shizuoka's lacquerware industry, formed of specialist turners and joiners as well as lacquerers and decorators.⁸ By the 1900s, however, Shizuoka's export lacquer bowls and boxes had gained the unfortunate reputation of being cheap and of poor quality.⁹ To improve products and the region's image, in 1905 the city's government opened a product display hall to broker sales and showcase local products. The hall also offered design consulting, technical training and design resources.

In the 1880s, some Shizuoka lacquerware workshops saw a domestic market opportunity and translated their carving and finishing techniques to develop a new, hybrid product that combined western and Japanese furniture forms: mirror stands. Japanese women in the early modern period used a rectangular mirror on a wooden box base for arranging hair and makeup, similar to a dressing table but used seated on the floor.¹⁰

⁵ Shizuoka is the name of both Shizuoka Prefecture and its capital city, Shizuoka City. In 2003, Shizuoka City and neighbouring Shimizu City, a historical port town, were unified for administrative purposes. Unless otherwise specified, in this paper 'Shizuoka' refers to the historical city of Shizuoka, without Shimizu, rather than the prefecture. 'Shizuoka furniture' refers to manufacturers in Aoi and Suruga Wards, home to the historical furniture neighbourhood and expansion areas post-1960.

⁶ For the early modern history of Shizuoka City see Shizuoka-shi ed. (1979) *Shizuoka-shi shi: Kinsei*. Shizuoka-shi, Shizuoka.

⁷ Shizuoka-shi, Shizuoka-shi Kyoiku Iinkai eds. (2006) *Seirei Shitei Toshi igyo kinen jigyo: 'Okaerinasai Sunpu no yosegi saiku' ten* exh. cat. Shizuoka Art Gallery, Shizuoka.

⁸ For the history of Shizuoka's lacquerware industry see Ito, T. ed. (1960) *Shizuoka moku-urushi sangyo-shi*. Shizuoka Moku-Urushi Kyodo Shokusan Kunrenjo, Shizuoka.

⁹ Shizuoka-shi Bussan Chinretsukan (1912-14) *Shizuoka-shi Bussan Chinretsukan Nenpo* 8-9.

¹⁰ Shizuoka-shi Keizai-kyoku Shoko-bu Chiiki Sangyo-ka (2008) *Shizuoka-shi no jiba sangyo jishi*. Shizuoka-shi Keizai-kyoku Shoko-bu Chiiki Sangyo-ka, Shizuoka.



Figure 1: Woman using a wooden mirror stand to apply makeup. Tamagawa Shucho, Mirror of Elegance [Furyu kesho kagami], woodblock print on paper, Tokyo Japan, c. 1790-1803 © Trustees of the British Museum.

The Shizuoka mirror stand manufacturers retained the mirror but placed it on a western-style chest of drawers, finished in lacquer and decorative carving.

Subsequently, Shizuoka's furniture industry has consisted of two related but discrete sectors: chest makers, whose family workshops had begun in the early modern period, and the lacquer-origin workshops, who specialised in mirror stands before diversifying in the postwar decades into other products including sewing boxes and sideboards.¹¹ Chests too are finished in lacquer, often a transparent lacquer over Japanese yellow birch (*kihada*) veneer for a distinctive yellow glow.

¹¹ This division persisted into the 1960s, with the two industries treated separately in reports on the regional industry. See for example Kagawa K. (1963) Shizuoka-ken no mokko seisan. *Kagu mansuri* 40, 20-21.



Figure 2: Sideboards in production, showing wood before and during lacquering process. Fukui Mokkojo, 2012, photograph by Sarah Teasley.

Both mirror stand and chest sectors followed a complex if not unusual putting-out structure until the 1970s.¹² Organisation hinged on powerful commissioning agents (*tonya*) who contracted production in addition to brokering sales to wholesale distributors in Tokyo and Osaka. Production proceeded in a fine division of labour.¹³ Agents communicated production volumes and designs based on retailers' requests to carpenters who built the basic frame and coordinated production. This meant ordering wood, veneers and plywood from specialist shops, as well as contracting out specialist work to planers, routers and machine and hand-carvers then sending the pieces to finishing and decoration shops.¹⁴ Some stages were mechanised but much work was done by hand, and most workshops dried wood naturally rather than using artificial curing through the 1960s. Both the mirror stand and chest industries depended on artisans' skills with wood, so plastics and metals were not commonly used, though a separate machine tools industry developed locally to support furniture-makers. Workshops were concentrated in one neighbourhood so that work could be easily carted from workshop to workshop as it progressed, with the carting itself a specialist sub-occupation. The neighbourhood housed numerous trade associations, each corresponding to a particular product or stage in the process such as sewing boxes, mirror stands and painters and decorators, as well as the Shizuoka prefectural industrial research and testing centre for wooden furniture.¹⁵ And chest and mirror-stand makers co-

¹² On the characteristics of mid-twentieth century Shizuoka city furniture manufacturing see Ueno, K. (1951) Shizuoka ni okeru saikin no moyo ni tsuite no hokoku. *Kagu to mokko* 10, 24-25. For Shizuoka prefecture see Ando, Y. (1951) Shizuoka-ken no mokushitsuchiku kogyo gaikan. *Kagu to mokko* 18, 6-8. Other sources include Yabumoto M. (1975) *Sengo Shizuoka Kagu Sangyoshi: Shizuoka Kyodai Kagu Shokogyo Kyoudo Kumiai no kiroku*. Shizuoka Kagu Sangyo-shi Kankokai, Shizuoka, the principal furniture manufacturers' association's own history covering c. 1945-75.

¹³ Yabumoto, M. (1975) *Sengo Shizuoka Kagu Sangyoshi: Shizuoka Kyodai Kagu Shokogyo Kyoudo Kumiai no kiroku*. Shizuoka Kagu Sangyo-shi Kankokai, Shizuoka, Fig. 3-3-4, p. 182; annotated by Tsuchiya Koichi, 11 December 2012.

¹⁴ Fujita O. and Tsuchiya K (2012) Interview 11 December, Shizuoka Prefectural Industrial Research Institute Wood & Crafts Department, Shizuoka; Yabumoto, M. (1975) *Sengo Shizuoka Kagu Sangyoshi: Shizuoka Kyodai Kagu Shokogyo Kyoudo Kumiai no kiroku*. Shizuoka Kagu Sangyo-shi Kankokai, Shizuoka.

¹⁵ Yabumoto, M. (1975) Chapter Two 'Gyokai dantai no togo', *Sengo Shizuoka Kagu Sangyoshi: Shizuoka Kyodai Kagu Shokogyo Kyoudo Kumiai no kiroku*. Shizuoka Kagu Sangyo-shi Kankokai, Shizuoka, pp. 88-123; Shizuoka-ken Shizuoka Kogyo Gijutsu Senta (2009) *100-nen no ayumi*. Shizuoka-ken Shizuoka Kogyo Gijutsu Senta, Shizuoka. On the origins of industry associations in Japan see Omori, K. (2006) How Local Trade Associations and Manufacturers' Associations

existed within a rich variety of workshop-based light industries, including wood and lacquered tableware, wooden sandals and wooden toys.¹⁶

Shizuoka is one of a number of wood furniture manufacturing regions, spreading from Asahikawa in Hokkaido, in far northern Japan, to Okawa (also spelled Ohkawa), located on the southern island of Kyushu.¹⁷ Regions differed in specialisations as well as in organisation. Long-standing furniture manufacturing regions like Okawa operated within the putting-out system and specialised in *hakomono* ('box things'), traditional furnishings like chests and mirror stands that would have stood in early modern Japanese homes as well.¹⁸ In contrast, regions like Asahikawa which developed furniture manufacturing industries in the twentieth century often produced western-style furniture *i.e.* tables, chairs and beds, known collectively as *ashimono* ('leg things').¹⁹ In some areas, industry was led by one large manufacturer.²⁰ Some manufacturers dealt directly with department stores and furniture specialty retailers, but most contracted with Japan's complex distribution system.²¹

Shizuoka's furniture, particularly its mirror stands, was seen as less prestigious than that of some other regions. This was partly to do with perception of quality: like the export lacquerware sector from which they developed, Shizuoka mirror stand-makers were known for cheaply-made products.²² However, the extreme subdivision of labour made Shizuoka workshops particularly dependent on the commissioning agents, as workshops operated entirely within the complex system organised by agents, and agents controlled the only clear connection to retailers. In the postwar years, this was one major reason for trade organisation formation, but throughout Shizuoka's history created a reputation for lack of assertiveness relative to makers in other regions. This brought original equipment manufacturer (OEM) contracts as reputation suggested Shizuoka makers would not mind if their work's provenance remained unknown (and could also be contracted for less), but also hampered the development of a 'Shizuoka brand'.²³ Geographical proximity to two of Japan's largest markets was also a factor in Shizuoka's curious mix of commercial popularity and lesser reputation: proximity made Shizuoka's workshops popular with agents, but some critics feared it also made workshops 'lazy', as convenience allowed them to 'get away' with poor quality.²⁴

3. Shizuoka furniture in the twentieth century

Major twentieth-century events had a direct impact on Shizuoka's wood industries, furniture and otherwise. As the mirror stand industry example shows, urbanisation and a growing middle class in the 1920-30s had increased demand, swelling workshop numbers and diversifying products.²⁵ But in

Worked in Pre-war Japan. In *The Role of Tradition in Japan's Industrialisation* M. Tanimoto ed. Oxford University Press, Oxford, 157-180.

¹⁶ Ando, Y. (1951) Shizuoka-ken no mokushitsuchiku kogyo gaikan. *Kagu to mokko* 18, 6-8.; Shizuoka-shi Chiiki Sangyo-ka (2010) *Shizuoka-shi no jiba sangyo*. Shizuoka-shi Chiiki Sangyo-ka, Shizuoka.

¹⁷ Geographical concentration was usual for modern as well as early modern Japanese industries, and remains evident in cities like Kyoto today. One vivid description of town and neighbourhood-specific industrial production (*jiba sangyo*) in the late nineteenth century is Dresser, C. (1882) *Japan: its architecture, art and art manufacturers*. London, Longmans, Green.

¹⁸ Okawa Kagu Kogyokai (1981) *Kagu sanchi Okawa no hensen*. Okawa Kagu Kogyokai, Okawa.

¹⁹ Kimura, M. (2004) *Asahikawa kagu sanchi no rekishi*. Asahikawa Fukko Kosha, Asahikawa; Kumeno, H ed. (2010) *Sanchi no henbo to jinteki nettowaku: Asahikawa kagu sanchi no chosen*. Ochanomizu Shobo, Tokyo.

²⁰ From the late nineteenth century onwards, new workshop neighbourhoods in port cities like Yokohama and Kobe created chairs, beds and tables – known as *ashimono* or 'leg things' – for foreigners and elite Japanese. The number of 'leg thing' regions grew further as entrepreneurs established factories to cater for growing demand for western-style furniture in the 1920s. An overview of business and design strategy of one major maker, Tendo Mokko, is Teasley S. (2013) Sarah Teasley – Tendo Mokko Case Study. InnoMatNet 2013, <http://www.innomatnet.eu/case-studies>, last access 7 November 2013.

²¹ A good description of postwar Japan's furniture distribution and retail networks is Arai, R. (2011) Sengo Nihon ni okeru shuyo mukusei kagu meka no kagu ryutsu no hensen: homu yusu kagu, kontorakuto yusu kagu, yunyu kagu no ryutsu keiro no hensen. *Kyoei Daigaku kenkyu ronshu* 9, 83-107.

²² Ueno, K. (1952) Shizuoka kagu no kukyo dakai ni: seizo, toso ittai de kairyo e. *Kagu to mokko* 29, 11; Ueno, K. (1951) Shizuoka ni okeru saikin no moyo ni tsuite no hokoku. *Kagu to mokko* 10, 24-25.

²³ Sano, Y. (2012) Interview 12 December, Shizuoka Prefectural Industrial Research Institute Wood & Crafts Department, Shizuoka.

²⁴ Shizuoka-ken Shizuoka Kogyo Shikenjo (1954-59) *Shikoken Nyusu*.

²⁵ On consumption and domesticity in early twentieth century Japan see Sand J. (2003) *House and home in modern Japan: architecture, domestic space, and bourgeois culture, 1880-1930*. Harvard University Press, Cambridge.

1951, Shizuoka prefecture's wood industries were at 80% of their prewar total, due to wartime consumption restrictions and the chaos, destruction and poverty of the Pacific War (1941-45) and Allied Occupation (1945-52) years.²⁶

Famously, the Korean War (1950-53) kickstarted postwar Japan's economic recovery. Incomes rose nationally from the mid-1950s, allowing consumers, corporate and public organisations to rebuild and refurnish public spaces, businesses and eventually dwellings as well. Building and renovation provided Shizuoka's manufacturers with ready customers. An annual trade fair, launched by workshop owners in 1951, helped publicise Shizuoka products to national distributors, and also signalled a small but significant shift in power from commissioning agents to trade associations.²⁷

In 1951, Shizuoka prefecture's wood, lacquerware and bamboo industries were worth an estimated 11 billion yen.²⁸ Furniture and fixtures, located primarily in Shizuoka city, comprised 36% of the industry, with wooden sandals (*geta*) the largest share at 40% and smaller percentages of musical instruments, decorative lacquerware, desktop items, buckets and wooden packaging.

As in European nations, government strategy for economic recovery also included exports, particularly to the lucrative American market. In addition to products for the domestic market, Shizuoka's wood manufactures became key exporters of sewing machine tables, wooden sandals, salad bowls and toys for the American market, with sewing machine tables particularly allowing crossover from mirror-stand workshops



Figure 3: Mirror stand prototypes made by the Shizuoka City Industrial Art Research Institute, shown in the First Annual Light Industry Exhibition, Shizuoka, 1951, in Shizuoka-shi Shoko-bu Sangyo Kogei Senta ed. (1981) *Shizuoka-shi Shoko-bu Sangyo Kogei Senta Soritsu 30 shunen kinenshi*. Shizuoka-shi Shoko-bu Sangyo Kogei Senta, Shizuoka.

²⁶ Ando, Y. (1951) Shizuoka-ken no mokushitsuchiku kogyo gaikan. *Kagu to mokko* 18, 6-8. On Japan in the late 1940s see Dower, J. W. (1999) *Embracing Defeat: Japan in the Wake of World War II*. London, Penguin Books. Nationally, war supported some manufacturers, as fortunate firms contracted with the wartime Ministry of Munitions; during the Occupation as well, commissions to build furniture for Allied Occupation housing gave workshops access to materials, fuel and income. Sources suggest, however, that Shizuoka workshops were little affected by the Occupation commissions, perhaps due to their small scale and focus on Japanese-style products and techniques rather than western-style ones. See for example Henshu-bu (1951) Ichigatsuchu no tokucho kagu nyusatsu kekka. *Kagu to mokko* 11, 31.

²⁷ Shizuoka Furniture Manufacturers Association (nd) promotional materials archive, accessed 11 December 2012; Yabumoto, M. (1975) *Sengo Shizuoka Kagu Sangyoshi: Shizuoka Kyodai Kagu Shokogyo Kyoudo Kumiai no kiroku*. Shizuoka Kagu Sangyo-shi Kankokai, Shizuoka.

²⁸ Ando, Y. (1951) Shizuoka-ken no mokushitsuchiku kogyo gaikan. *Kagu to mokko* 18, 6-8. The figure for furniture includes 'furniture and fixtures', 'mirror stands' and 'sewing machine tables', all given separately in the 1951 article (and indicative of industry divisions between mirror stands and chests, and between domestic and export products, at the time).

With housewares a small but significant facet of postwar industrial strategy, national, prefectural and city industrial promotion targeted light (crafts) as well as heavy industry (steel, chemicals, shipbuilding). Public industrial research institutes provided immediate support, offering materials and technical advising, product testing and bookable workshops with advanced machinery.²⁹ For furniture-makers, Shizuoka's city and prefectural institutes also offered design consultancy, competitions and classes for specific techniques and products. Period records and manufacturer and institute staff recollections suggest that the two institutes and workshops enjoyed warm relations, and that design and technical consultancy particularly helped Shizuoka's makers improve product quality and design for consumer trends.³⁰

The 1960s saw booming sales for Shizuoka furniture, as consumers nationwide used increased income to furnish their homes and provide dowries, conventionally furniture including a chest for *kimono*, mirror stands and a new Shizuoka product: sewing boxes.³¹ The chest-makers retained their clientele and product lines, and the rising popularity of westernised interiors brought mirror stand-makers to develop further products: sideboards, dressing tables and western-style storage units. However, the boom years proved short-lived. In 1964, the Ministry of International Trade and Industry (MITI) became concerned that neighbourhood-based industries like Shizuoka furniture were inherently inefficient and launched a national strategy to raise manufacturing SME productivity through rationalisation.³² Micro-workshops were encouraged to merge, consolidating previously scattered processes under one roof, simplifying the production chain and reducing overhead and labour costs. Firms were urged to move to suburban industrial parks, where they could share expensive and otherwise unobtainable machinery and other facilities, and were more convenient for Japan's growing motorway system, replacing train transport with trucks. The move was also intended to mitigate the fire danger of densely-packed wooden workshops, and from the 1970s onwards to improve urban air quality.³³

²⁹ The official history of Shizuoka prefecture's industrial research centre is Shizuoka-ken Shizuoka Kogyo Gijutsu Senta (2009) *100-nen no ayumi*. Shizuoka-ken Shizuoka Kogyo Gijutsu Senta, Shizuoka. A useful summary of public design promotion activities in postwar Shizuoka is Kuroda H. (2003) Shizuoka-ken ni okeru dezain fukko jigyo no kensen. *Shizuoka Bunka Geijutsu Daigaku kenkyu kiyō* 3, 77-84.

³⁰ Kobayashi, M. (2012) Interview 18 October, Shizuoka Furniture Manufacturers Association, Shizuoka; Fujita, O., Tsuchiya, K (2012) Interview 11 December, Shizuoka Prefectural Industrial Research Institute Wood & Crafts Department, Shizuoka.

³¹ On Shizuoka furniture industry in the early 1960s see Kagawa, K. (1963) Shizuoka-ken no mokko seisan. *Kagu mansuri* 40, 20-21 and Shizuoka kagu gyokai no genjo (1965) *Kagu sangyo* 6:7, 120-124.

³² Tsusho Sangyo Sho Kogyo-kyoku Zakka dai-ichi ka (1965) *Mokusei kagu seizo sangyo jittai chosai hokokusho (Chusho kigyo kindaiika sokushin ho)*. Tsusho Sangyo Sho, Tokyo.

³³ As one cabinetmaker reminisced, small fires illuminated the neighbourhood at night well into the 1970s. Fukui, H. (2012) Interview 12 December, Fukui Mokkojo, Shizuoka.



Figure 4: Furniture-making competition, Shizuoka City Industrial Art Research Institute, August 1953, in Shizuoka-shi Shoko-bu Sangyo Kogei Senta ed. (1981) *Shizuoka-shi Shoko-bu Sangyo Kogei Senta Soritsu 30 shunen kinenshi*. Shizuoka-shi Shoko-bu Sangyo Kogei Senta, Shizuoka.

State intervention had mixed results. Some Shizuoka firms saw consolidation improve volume and profit. But with still-constant sales, many proved uninterested in adapting to the new, more ‘rational’ organisation, even though the new suburban locations put stress on the putting-out system, as some firms relocated and others did not. Community dissipated as homes were separated from workshops and makers left at day’s end, rather than gathering in neighbourhood pubs.³⁴ Increased distance made it more difficult to move products between workshops, putting strain on the putting-out system. The move had an adverse effect on knowledge transfer between the prefectural research institute and manufacturers, too. The institute’s information, testing and consultancy functions remained popular, but with the institute now driving rather than walking distance from workshops, casual interaction waned.

Policy was not entirely to blame for Shizuoka furniture’s decline after 1970, as manufacturers had also misjudged market demand. By the early 1970s, established households stopped purchasing once they had acquired furnishings, and the growing popularity of western-style interiors, particularly amongst newly-adult baby boom consumers, left Shizuoka’s Japanese-style furniture antiquated and increasingly undesired.³⁵ Western-style furniture makers too, suffered, as furniture suites given to newly married couples fell from fashion. Manufacturers adapted with new product lines and styles, but external factors played a role as well. Imports, first of cheaper Asian furniture then – thanks to the strong yen of the mid-1980s – luxury European and American furniture, offered consumers increased choice and novelty and Shizuoka’s manufacturers further competition.³⁶ By 1981, the regional government and manufacturer associations were launching plans to revitalise the industry.³⁷

³⁴ Sakuragawa, S., Sano, Y., Tanaka, N. (2012) Interview 18 October, Shizuoka Prefectural Industrial Research Institute Wood & Crafts Department, Shizuoka.

³⁵ Shizuoka-ken Kagu Kogyo Kumiai et al ed. (1982) *Shizuoka-ken mokusei kagu sanchi fukko keikakusho*. Shizuoka-ken Kagu Kogyo Kumiai, Shizuoka; Sakuragawa, S. (1997) Shizuoka kagu no 21 seiki ni mukete no charenji. *Mokuzai kogyo* 52:3, 127-128.

³⁶ Kumeno, H ed. (2010) *Sanchi no henbo to jinteki nettowaku: Asahikawa kagu sanchi no chosen*. Ochanomizu Shobo, Tokyo, Table 1-4, 20.

³⁷ Shizuoka-ken Shoko-bu Jiba Sangyo-ka ed. (1981) *Shizuoka-ken mokusei kagu sanchi fukko bijon: Tsuyoi kyoso-ryoku o motsu sogo kagu sanchi wo mezashite*. Shizuoka-ken Shoko-bu Jiba Sangyo-ka, Shizuoka; Shizuoka-ken Kagu Kogyo Kumiai et al ed. (1982) *Shizuoka-ken mokusei kagu sanchi fukko keikakusho*. Shizuoka-ken Kagu Kogyo Kumiai, Shizuoka.

In the 1990s, economic stagnation and uncertainty created a decade of diminished consumption and price-consciousness just as distributors, retailers and consumers discovered cheaper Chinese furniture, marking a double-blow. In a further challenge, growing consumer preference for western-style condominiums (*manshon*), often with built-in storage units and no place for sideboards or chests, reduced practical demand for Shizuoka's products. And changing social customs and fashion meant that younger women both wore *kimono* less and were less interested in owning them, curtailing the market for dowry chests.

With Shizuoka's existing products increasingly incompatible with the domestic market, trade associations and prefectural and city research institutes fought back. Efforts included product R&D based on market research and co-design, a new Shizuoka Design Centre providing targeted consultancy and experimental diversification into new areas such as street furniture, built-in shelving for prefabricated housing, earthquake-proof construction and design for ageing – one of contemporary Japan's few growth markets.³⁸

However, external factors and the industry's inability to match new price and design expectations proved too strong for such innovative, design-research-driven efforts. As an industry, Shizuoka furniture profits shrank 70% between 1980 and 2005.³⁹ Decline hit employment hard as well. In 1980, Shizuoka boasted 624 furniture manufacturers with more than four employees, employing 5986 people.⁴⁰ In 1990, there were 509 companies with 5,544 employees. The 'lost decade' of the 1990s accelerated hollowing-out: in 2000 the industry had nearly halved to 277 firms with 2,325 employees, and by 2005, Shizuoka was home to 182 firms with 1563 employees, a drop of 64.2% in the number of firms and 71.8% in the number of workers between 1990 and 2005.

4. More than survival: Shizuoka furniture today

Subsequent figures are no cheerier. In 2012, Shizuoka's furniture manufacturing industry employed 1449 people, and consisted of 114 manufacturers.⁴¹ These figures represent a 59% decline since 2000, and an 82% drop since 1980.⁴²

Japan's ageing population accounts for part of the decline: some retiring owners fold the company rather than ask their children to continue the business. The challenging industrial outlook is partly responsible for this, but many owners shepherded their children into higher education and white-collar jobs, which they see as social advancement and more economically stable.⁴³ But demographics also contribute to company persistence amidst declining profits: many small workshop owners have

³⁸ Kuroda, H. (2002) Shizuoka-ken dezain senta no katsudo tenkai. *Shizuoka Bunka Geijutsu Daigaku kenkyu kiyo* 2, 123-128; Shizuoka Dezain Fukkokai [1996] *Point* 22; Shizuoka-ken Shizuoka Kogyo Gijutsu Senta [1999] *Heisei 10-nendo Shusei kasseika shien jigyo repoto*. Shizuoka-ken Shizuoka Kogyo Gijutsu Senta, Shizuoka; Shizuoka-ken Shizuoka Kogyo Gijutsu Senta [2001] *Heisei 12-nendo Shusei kasseika shien jigyo repoto*. Shizuoka-ken Shizuoka Kogyo Gijutsu Senta, Shizuoka; Sakuragawa, S., Sano, Y., Tanaka, N. (2012) Interview 18 October, Shizuoka Prefectural Industrial Research Institute Wood & Crafts Department, Shizuoka.

³⁹ Keizai Sangyo Sho [Ministry of Economy, Trade and Industry] *Kogyo tokei chosa (shichoson-hen)* for 1980, 1990, 2000 and 2005, cited in Kumeno chart 1-2, 18.

⁴⁰ Keizai Sangyo Sho [Ministry of Economy, Trade and Industry] *Kogyo tokei chosa (shichoson-hen)* for 1980 and 2005, cited in Kumeno, H ed. (2010) *Sanchi no henbo to jinteki nettowaku: Asahikawa kagu sanchi no chosen*. Ochanomizu Shobo, Tokyo, Table 1-1, 17.

⁴¹ Keizai Sangyo Sho Daijin Kanbo Chosa Tokei (2014) 'Heisei 24-nen Kogyo Tokei-Hyo 'Kogyo Chiku-Hen, published 25 April 2014, available at <http://www.meti.go.jp/statistics/tyo/kougyo/result-2.html>, last access 26 June 2014. Figures are for 'wood furniture manufacturing (except for lacquerware)' in the 'Shisei Oigawa chiku', the Ministry of Economy, Trade and Industry's designation for Shizuoka City and its immediate suburbs and villages.

⁴² Data for 2012 number of firms and employment is from Keizai Sangyo Sho Daijin Kanbo Chosa Tokei Gurupu (2014) *Heisei 24-nen Kogyo Tokei-Hyo Kogyo Chiku-Hen*, published 25 April 2014, available at <http://www.meti.go.jp/statistics/tyo/kougyo/result-2.html>, last access 26 June 2014; data for 1980 and 2005 is from Keizai Sangyo Sho (1981, 2006) *Kogyo tokei chosa (shichoson-hen)* cited in Kumeno, H ed. (2010) *Sanchi no henbo to jinteki nettowaku: Asahikawa kagu sanchi no chosen*. Ochanomizu Shobo, Tokyo, Table 1-1, 17.

⁴³ Sano, Y. (2012) Interview 12 December, Shizuoka Prefectural Industrial Research Institute Wood & Crafts Department, Shizuoka.

property investments, so can work for minimal income, waiting for retirement rather than reinvesting in company and community.⁴⁴

For continuing firms, market expectation of cheap, contemporary style products, the dreaded ‘fast furniture’ of Nitori and its ilk, provides a substantial challenge. Some firms have chosen to compete through cost reduction themselves, and moved to standardisation, mechanisation and offshore factories of their own.⁴⁵ However, high labour costs and overhead in comparison to other Asian nations and small production volumes make it impossible for micro-workshops to compete on price with imported furniture. Style remains an issue as well: younger consumers particularly prefer brightly-coloured MDF, Ikea-style pine, plain finishes and lightweight honeycomb core imports to Shizuoka’s natural veneers, lacquer, carved decoration and solid wood construction. Anecdotal evidence suggests that importers have also proven adept at producing imitation Shizuoka pieces for the local market: makers complain of launching new pieces only to see knock-offs in import shops weeks later.⁴⁶

Decline in the larger manufacturing ecosystem is an issue as well. In the mid-twentieth century, toolmakers and wood machinery manufacturers concentrated in Shizuoka city and the prefecture’s other heavy industry cities such as Shimizu, enabling regular communication, extreme customisation and quick maintenance. Lower income and expectations that the family firm will fold have meant less capital investment in new machinery, but with the tool and machinery industry hollowed-out as well – replaced with Chinese and other Asian imports at the low end and German imports at the high end – maintenance has become more difficult.⁴⁷ The breakdown of local supply chains contributes to the problem as well, as production moves to China and South-East Asia for lower labour and materials costs and – in a chicken and egg scenario – as links in their own supply chain relocate offshore as well.

Policy shifts at the local, regional and national levels have not always helped Shizuoka furniture. In postwar Japan, industrial research institutes played an important role in sharing national economic recovery with small-scale industrial communities like Shizuoka furniture.⁴⁸ Today, both Shizuoka City and Shizuoka Prefecture retain divisions charged with promoting local light industries, now reclassified as ‘crafts’, but funding emphasises current regional priorities and growth areas such as pharmaceuticals and food science, with reduced backing for furniture-industry support despite enthusiastic staff and a legacy of activities since the 1980s.⁴⁹

In Shizuoka, the civic and prefectural teams continue to try to promote and revitalise the furniture industry, despite decreased budgets, frozen staffing and deprioritisation. The Regional Industry Division of Shizuoka City’s Department of the Economy, Commerce and Industry offers technical workshops, financial and tax advising, linkups with local universities, an attractive and well-stocked shop in Shizuoka’s main train station, a quality assurance programme (the label ‘Shizuoka Brand’) and a large facility with crafts workshop spaces, classes and displays, aimed at tourists, schoolchildren and local amateurs.⁵⁰

⁴⁴ Sano, Y. (2012) Interview 12 December, Shizuoka Prefectural Industrial Research Institute Wood & Crafts Department, Shizuoka.

⁴⁵ Sano, Y. (nd) Shizuoka no kagu sangyo to dezain. Unpublished PowerPoint presentation; Sano, Y. (2012) Interview 12 December, Shizuoka Prefectural Industrial Research Institute Wood & Crafts Department, Shizuoka.

⁴⁶ Ishikawa, T. (2012) Interview 12 December, Kinrin Chokoku Kogei, Shizuoka.

⁴⁷ Amemiya, N. (2012) Interview 29 November, Japan Woodworking Machinery Association, Tokyo.

⁴⁸ Kogyo Gijutsuin Sangyo kogei Shikenjo ed. (1960) *Sangyo Kogei Shikenjo 30-nen Shi*. Kogyo Gijutsuin Sangyo Kogei Shikenjo, Tokyo. Analyses of regional research institutes, not specific to wood furniture manufacturing technology transfer, include: Ruth, K. (2006) Innovation policy for SME in Japan: The case of technology transfer centres. In *Small Firms and Innovation Policy in Japan* ed C. Storz. Routledge, London, 56–81; Shapira, P. (1992) Modernizing small manufacturers in Japan: the role of local public technology centers *Journal of Technology Transfer* (Winter), 40–57; Fukugawa, N. (2008) Evaluating the strategy of local public technology centers in regional innovation systems: evidence from Japan. *Science and Public Policy*, 35(3), 159–170.

⁴⁹ Shizuoka-shi Keizai-kyoku Shoko-bu Chiiki Sangyo-ka (2012) *Shizuoka-shi monozukuri sangyo fukko kihon keikaku*. Shizuoka-shi, Shizuoka.

⁵⁰ Shizuoka-shi Keizai-kyoku Shoko-bu Chiiki Sangyo-ka (nd) *Shizuoka-shi Burando ‘Shizuoka Aoi Puremiumu Ninshohin*

At the Shizuoka (city) branch of the Industrial Research Institute of Shizuoka Prefecture, prefectural reprioritization of strategic industries has left the light industry/crafts division with an uncertain future, despite extensive programming including design workshops and researchers' work in ergonomics, ageing, wood utilisation and well-being (a project to use newly-available postwar Japanese cypress (*sugi*) to improve air quality and stress levels in local schools).⁵¹ In 2010, the prefecture assumed responsibility for the Shizuoka University of Art and Culture, a university founded in 2000 as a joint project of Shizuoka private industry, the prefecture and the city of Hamamatsu to educate designers and provide academia-industry research collaboration. Some policy-makers and designers show optimism that the university will energize Shizuoka furniture through student collaborations and skills training.⁵²

At the national level, the Ministry of Economy, Trade and Industry (METI), METI's Small and Medium Enterprise Agency and the Japan External Trade Relations Organisation (JETRO) aim to help local light industries adapt to contemporary domestic and export markets through product development programmes linking manufacturers with fashionable design firms, mentoring and export promotion schemes like Japan Brand at the Milan Salone.⁵³ Financial incentives, tax and management advice and subsidies for upskilling and apprenticeships from METI and the Ministry of Health, Labour and Welfare (MHLW) provide longer-term structural support.⁵⁴

Research suggests that workshop reaction to the various support mechanisms varies widely. One national scheme that has seen significant take-up by Shizuoka furniture manufacturers is support for apprenticeships, which includes a salary subsidy and, for mid-career entrants, a one-year technical skills training course at a local technical college, organised by the prefecture and supported by the MHLW.⁵⁵ Some – often more successful – firms have taken up MHLW training support and enthusiastically participated in design-led local and JETRO projects, including an exhibition, NIPPON SENSE, at Maison et Objet in Paris, and several rounds of designer-manufacturer collaboration.⁵⁶ Other Shizuoka firms show less interest in product development for changing markets; older owners' apathy and the relatively small size of workshops may also contribute to lack of engagement with support programmes.

Heisei 21-nendo, Heisei 22-nendo, Heisei 23-nendo. Shizuoka-shi, Shizuoka; Zushi, H. (2012) Interview 13 December, Shizuoka City Department of Economy, Commerce and Industry Regional Crafts Division, Shizuoka; Shizuoka-shi (2012) *Shizuoka-shi monozukuri sangyo fukko kihon keikaku.* Shizuoka-shi, Shizuoka; Shizuoka-shi (2013) *Shizuoka-shi monozukuri sangyo fukko kihon keikaku jikyo hokoku.* Shizuoka-shi, Shizuoka.

⁵¹ Sakuragawa, S., Sano, Y., Tanaka, N. (2012) Interview 18 October, Shizuoka Prefectural Industrial Research Institute Wood & Crafts Department, Shizuoka; Sano, Y. (nd) Shizuoka no kagu sangyo to dezain. Unpublished PowerPoint presentation; Sakuragawa, S. (2004) Koreisha no kiritsu dosaku ni hairyo shita mokusei dainingu setto no kaihatsu. *APAST* 14:7, 91-93; Shizuoka-ken Shizuoka Kogyo Gijutsu Centa Chiiki Sangyo Gijutsu-bu Kogei Gijutsu Sutaffu et al. [2000] *Kagu kara kagu e shinkochu, Heisei 11 nendo shuseki kasseika shien jigyo.* Shizuoka-ken Shizuoka Kogyo Gijutsu Centa Chiiki Sangyo Gijutsu-bu, Shizuoka.

⁵² Tsuchiya, K. (2012) Interview 12 December, Shizuoka Prefectural Industrial Research Institute Wood & Crafts Department, Shizuoka.

⁵³ Kabushiki Gaisha Nihon Sogo Kenkyujo (2008-2010) JAPAN Burando ikusei shien jigyo hyouka nado jigyo hokokusho. http://www.chusho.meti.go.jp/shogyo/chiiki/japan_brand/, last access 24 June 2014. From 2011 onwards, these activities have been consolidated as the 'Cool Japan' campaign. See Ministry of Economy, Trade and Industry (2013) Cool Japan Initiative (Cool Japan Fund). PowerPoint presentation, http://www.meti.go.jp/english/policy/mono_info_service/creative_industries/creative_industries.html, last access 25 February 2014.

⁵⁴ Chusho Kigyo-Cho Kohoshitsu (2013) *Heisei 25 nendo-han chusho kigyo shisaku riyo gaidobukku 2nd* ed. Chusho Kigyo-Cho, Tokyo, accessible at http://www.chusho.meti.go.jp/pamflet/g_book/h25/, last access 24 June 2014.

⁵⁵ Sano, Y. (2012) Interview 12 December 2012, Shizuoka Prefectural Industrial Research Institute. On the MHLW apprenticeship scheme see Chusho Kigyo-Cho Kohoshitsu (2013) *Heisei 25 nendo-han chusho kigyo shisaku riyo gaidobukku 2nd* ed., Chusho Kigyo-Cho, Tokyo, accessible at http://www.chusho.meti.go.jp/pamflet/g_book/h25/, last access 24 June 2014.

⁵⁶ Sano, Y. (nd) Shizuoka no kagu sangyo to dezain. Unpublished PowerPoint presentation; Sano, Y. (2012) Interview 12 December, Shizuoka Prefectural Industrial Research Institute Wood & Crafts Department, Shizuoka.

5. How to get ahead in furniture: three case studies

Some Shizuoka furniture firms have found effective strategies for thriving in a challenging climate. As the following case studies suggest, a key element in these strategies is adaptability combined with self-awareness: the ability to identify characteristics in production, materials use, customer communication and styling that have historically differentiated the firm from local and larger competitors, and to think flexibly about how those unique characteristics might be reframed and amplified within the new retail environment.

5.1 Niche markets: Interna Nanjoh

Interna Nanjoh continues to make typical Shizuoka products like jewelry boxes but uses product line diversification, own brand production and an emphasis on skill and tradition to weather the market. The company was founded in 1985 as the consolidation of specialised woodworking, carving and finishing workshops into one firm, thus rationalising production under one roof.⁵⁷ Perhaps unsurprisingly, then, it is located in the suburban furniture neighbourhood where firms moved as part of the post-1960s rationalisation drive; consolidation in the 1980s also indicates the lasting impact of the rationalisation policy, combined with Shizuoka furniture's declining fortunes from the 1970s onwards.



Figure 5: Production at Interna Nanjoh Co Ltd, 2012, photograph by Sarah Teasley.

Interna Nanjoh's 28 employees range from senior artisans in their 70s to apprentices in their early 20s. Predominantly mid- and high-range clients include high-end national department stores, mail order 'shopping clubs' and national distributors for department stores and furniture retailers. Products, viewable online, in catalogue and in display space in Shizuoka, are sold through distributors to national department stores and furniture retailers, indicating the continued power of the distribution system.⁵⁸ Interna Nanjoh also provides doors and other wood parts for national prefabricated housing retailers as well as wooden display fixtures for luxury brands like Hermès and OEM for other furniture brands and luxury hotel chains: furnishings, store fixtures and limited-edition promotional packaging like boxes for Suntory whisky.⁵⁹

⁵⁷ Interna Nanjoh Co., Ltd. (nd) Kaisha annai.

⁵⁸ On distributors' power, see Arai, R. (2011) Sengo Nihon ni okeru shuyo mokusei kagu meka no kagu ryutsu no hensen: homu yusu kagu, kontorakuto yusu kagu, yunyu kagu no ryutsu keiro no hensen. *Kyoei Daigaku kenkyu ronshu* 9, 83-107.

⁵⁹ Nanjo, K. (2012) Interview 11 December, Interna Nanjoh, Shizuoka.

In addition to commissions and OEM, Interna Nanjoh manages several in-house brands which together illustrate the firm's corporate strategy. 'Gentle Life by Faro' consists of western-style furniture like cabinets and tables, relatively low-end but still Japanese made. A line of jewelry cases, developed in the 1980s as a user co-design project in collaboration with the prefectural research institute, remain for sale now, their design largely untouched.⁶⁰



Figure 6: Co-designed jewelry cases, Interna Nanjoh Co Ltd, 2012, photograph by Sarah Teasley.

A recent particular success is the brand 'Parisian Variety Shop' (Pari no zakka-ya): everything from small wooden objects (picture frames, hand mirrors, jewelry cases and remote control trays) through to furniture (beds, television cabinets, chests and chairs), unified by what Interna Nanjoh describes as 'European country' style in products and the graphic design of marketing material alike.

⁶⁰ Sano, Y. (nd) Shizuoka no kagu sangyo to dezain. Unpublished PowerPoint presentation; Sano, Y. (2012) Interview 12 December, Shizuoka Prefectural Industrial Research Institute Wood & Crafts Department, Shizuoka.



Figure 7: Pari no zakka-ya products, Interna Nanjoh Co Ltd., 2012, photograph by Sarah Teasley.

According to company literature, the brand identity is ‘Parisian streetscapes as seen in movies – fantasy, memory, nostalgia, lovely’, inspired by ‘the luxury lace once loved by Parisian ladies’.⁶¹ Styling is feminine, with embroidery and lace motifs, and corresponds to the marketing strategy that despite a relatively high price point, female domestic consumers will want the objects and acquire them eventually, after saving up or for a special occasion. Here, the firm’s success indicates a specific feature of the Japanese domestic market: its ageing population. Despite the economic stagnation of the last two decades, consuming spending power remains high, and ageing consumers with tastes fixed decades earlier make up a significant part of the market.⁶² And while existing distribution and retail systems in Japan may offer diminished profits due to their multi-layered structure, Interna Nanjoh’s target consumers are likely willing to pay more for Japanese-made products from familiar outlets.

‘Paris Variety Shop’ products retain many features of twentieth-century Shizuoka furniture, some of which Interna Nanjoh emphasises for marketing purposes. Products are constructed from mid-quality MDF as well as oak, maple, ash and chestnut, but marketing material assures retailers and individual customers that all drawers and legs are hardwood, not MDF or cheap pine. Manufacturing is a combination of hand tools and mechanized production, with NC routers used to trace forms and management uninterested in whether products are predominantly hand or mechanically-made.⁶³ That said, the embodied knowledge and skill of Interna Nanjoh’s employees is a selling point, with an implied suggestion that all woodworking may use mechanization, but the decorative handcarving techniques, tradition of Shizuoka woodworking and skill of Interna Nanjoh’s carvers distinguish its products. Thus Parisian Variety Shop brochures state, ‘The lace treatment that’s essentially the life blood of the Parisian Variety Shop’ series is a rare gem made possible by the hands of consummate artisans’.⁶⁴ The trade catalogue and website emphasise, ‘All wood machining and antique finishes etc.

⁶¹ Interna Nanjoh Co., Ltd (2010) *Pari no zakkaya* Vol. 15.

⁶² On ageing and Japan see Pilling, D. (2014) How Japan stood up to old age. *The Financial Times*, January 17.

⁶³ Nanjo, K. (2012) Interview 11 December, Interna Nanjoh, Shizuoka.

⁶⁴ Interna Nanjoh Co., Ltd (2010) *Pari no zakkaya* Vol. 15.

products are handmade by artisans; this is not mass produced furniture'.⁶⁵ The firm also offers bespoke decoration such as hand-carving and embroidery application.

While its product styling, materials and use of machinery as well as hand tools mean that Interna Nanjoh's furniture is not identifiably 'traditional' or 'heritage', we might argue nonetheless that Interna Nanjoh's organisation embodies many historical Shizuoka furniture characteristics – and that these characteristics simply take the form of practices rather than style. The firm takes advantage of local skills and expertise, and plays an important role – as do many Shizuoka firms – in transmitting skills from ageing artisans to a next generation of makers. It is pragmatic, using resources at hand: machines as well as hand skills, local government support mechanisms, the existing distribution system and the remaining domestic market. At the same time, the firm has been aggressive in developing its own brand – a characteristic of many successful Shizuoka shops today – and product line diversification allows it to access multiple markets.

5.2 Community-building: Kinrin Chokoku Kogei

Kinrin Chokoku Kogei ('Kinrin') was founded in 1969 by a decorative woodcarver, and is now operated by his son and grandson with five employees.⁶⁶ Like Interna Nanjoh, then, the firm represents Shizuoka furniture's shift from extreme specialisation to comprehensive production under one roof, and it too is located outside the historical furniture neighbourhood, on the eastern fringe of Shizuoka city. Unlike Interna Nanjoh, however, Kinrin has sharply shifted the style of its products and sought a new clientele. As decorative woodcarving fell from fashion in the 1990s and middle-class consumers in their 40s and upwards developed as taste for what Japanese marketers refer to as 'lohas' ('lifestyles of health and sustainability') lifestyle goods, the firm reinvented itself as a furniture-maker specialising in natural materials, long-life products and close customer relations. Today, contemporary product styles and new retailing techniques mask a family business deeply invested in the economic and social well-being of Shizuoka's furniture ecosystem and continuing the specific carving skills that have been their – and Shizuoka's – unique selling point.

Kinrin specialises in western-style hardwood tables, chairs and other home furnishings, using both Japanese and imported woods. Some pieces feature a small decorative carving but many are smoothly-finished, blocky pieces, and this use of solid wood rather than veneers on MDF or cheaper wood functions as a key sales point for the company, with transparent, colourless finishes emphasising the wood grain.



Figure 8: Showroom at Kinrin Chokoku Kogei, 2012, photograph by Sarah Teasley.

⁶⁵ Interna Nanjoh Co. Ltd. (nd) Kaisha joho, <http://www.pari-no-zakkaya.com/kaisya.html>, last access 10 November 2013.

⁶⁶ Kinrin Chokoku Kogei (nd) Mainichi kaguya.

As the earthy style may suggest, Kinrin targets middle-class customers in their 30s and upwards with a taste for the artisanal, the ‘natural’, the ‘real’, an interest in bespoke furniture created through a dialogue with the makers and a preference for investing in high quality products that use for life over the cheap, disposable furniture they may have owned in their 20s. The past decade has also seen increased market interest in rediscovering a ‘Japanese’ aesthetic: simplicity and nature are often presented (sometimes overly simplistically) as an antidote and contrast to westernised contemporary urban life.⁶⁷ Or as founder’s grandson Ishikawa Tomonori phrases it in the company’s promotional material,

‘There’s nothing wrong with a lifestyle that’s all about speed, kitted out with furniture bought entirely online or through mail order. But there’s another lifestyle that’s about going to a small furniture shop and slowly picking out what you want, as you inhale the wood scent and enjoy the feel of the wood grain.

‘I’d like you to stand still for a moment and consider something. Are you rushing too much? Aren’t you tired? What is it that you really want? Sit down for a moment in a wooden chair, and feel the material’s warmth. Or on a sofa that gently gathers you into its folds. Our furniture company is always waiting, ready for you with furniture like this’.⁶⁸

Kinrin’s product and graphic designs, shop interiors and sales methods convey this philosophy-cum-sales strategy clearly. Customers can view samples online and order by telephone, but are encouraged to visit the showroom attached to Kinrin’s small factory in Shizuoka’s mountainous outskirts, where Ishikawa will sketch them a bespoke piece and offer a quote onsite.



Figure 9: Ishikawa Tomoharu at his desk, Kinrin Chokoku Kogei, 2012, photograph by Sarah Teasley.

Personal interaction offers a strong contrast to box stores and online purchasing, and allows Ishikawa’s self-presentation as a member of the next generation who has actively, decisively chosen to continue the local tradition of making real things from natural materials, through storied artisanal methods.

⁶⁷ See for example the success of women’s style magazine *Waraku*, or the popularity of the 2012 exhibition ‘Tema Hima: The Art of Living in Tohoku’ at Tokyo design museum 21_21 Design Sight, Tema Hima: The Art of Living in Tohoku. 21_21 Design Sight, Tokyo Japan. <http://www.2121designsight.jp/program/temahima/>, last access 7 May 2014.

⁶⁸ Kinrin Chokoku Kogei (nd) Mainichi kaguya.

Promotional material often takes a personal voice, creating a story that connects Ishikawa and Kinrin to the consumer. One catalogue consists largely of a first-person reflection by Ishikawa on his philosophy of making, and closes with a ‘handwritten’ note. In the essay, Ishikawa voices the image of the quiet artisan: ‘Wood and furniture are both so honest that it makes your heart ache. That’s why you have to engage them day in day out, honestly and straightforwardly’.⁶⁹ The tone and ideas alike recall both folk craft (*mingei*) writings and Buddhist teachings on the importance of having a pure heart and childlike outlook, at a time when both folk craft and Buddhist philosophy are enjoying a popular resurgence in Japan.⁷⁰

Kinrin’s approach stands out amidst the more conservative styling and continued engagement with twentieth-century distribution networks and sales mechanisms of some other Shizuoka firms. Regardless, by taking existing resources – embodied skill, a family legacy and tradition of furniture-making, existing machinery, Shizuoka’s convenient location and the city’s remaining ecosystem – and matching them with contemporary market conditions and technologies — the Internet, current consumer taste and apprentice interest – Kinrin has much in common with the Shizuoka lacquerware makers who developed the mirror stand industry, and demonstrate the power and importance of recognising translational characteristics that may – even more than style or method – provide specific power for local industry against competitors.

5.3 Pragmatic tradition: Fukui Mokkojo

Fukui Mokkojo (Fukui Woodworking) is a high-end Japanese-style chest (*tansu*) maker founded in 1950.⁷¹ In 1963, the workshop began making western-style sideboards as well. Today, the founder’s son, grandson and a handful of employees produce a variety of Japanese and western-style chests and cabinets, primarily for sale in high-end department stores nationwide.⁷²

Today, Japanese-style chests and western-style furniture made with Japanese carpentry techniques and tools are a niche luxury market rather than ordinary, everyday furniture. For Fukui Mokkojo as for many small European luxury producers as well, however, reduction to a niche market product has benefits as well as challenges. In sum, the continuing if reduced demand for traditionally handmade, high-quality pieces by now-historic workshops and the firm’s relatively low overhead allow it to continue working with decidedly non-rationalised methods, and at low volume.

Fukui Mokkojo uses Japanese timber, which they dry naturally themselves in the lot adjacent to the small, corrugated-iron workshop in the old furniture neighbourhood in central Shizuoka.

As in earlier Shizuoka furniture production, all pieces are finished in natural lacquer, a process brought in-house in 1998. Carpenters work seated on *tatami* flooring, holding the pieces in place with their legs as they carve freehand using now-antique tools and techniques.

⁶⁹Kinrin Chokoku Kogei (nd) Mainichi kaguya.

⁷⁰ On *Mingei*, see Brandt, K. (2007) *Kingdom of Beauty: Mingei and the Politics of Folk Art in Imperial Japan*. Duke University Press, Durham.

⁷¹ Fukui Mokkojo website (nd) <http://www.fukuken-kagu.com>, last access 10 November 2013.

⁷² Fukui, H. (2012) Interview 12 December, Fukui Mokkojo, Shizuoka.



Figure 10: Fukui Hideyuki in the workshop area at Fukui Mokkojo, 2012, photograph by Sarah Teasley.

Like Interna Nanjoh, the retention of hand methods and old machinery is less about fetishisation of the hand or marketing strategy, and more about available skills and a business model that allows slow production: old techniques and handwork are used alongside machines, and new materials such as American wood bond substitute for traditional *nikawa* animal hide glue when makers deem them to be more effective.



Figure 11 Tools, machines and American wood bond at Fukui Mokkojo, 2012, photograph by Sarah Teasley

Similarly, in addition to the national distribution system Fukui Mokkojo maintains its own website, Facebook page and blog, written by the founder's granddaughter. In addition to presenting the firm's product range, social media locates the firm within a narrative of craft-based, family-run local production, a marked contrast both to Nitro-style big box retail and to the persistent image of Japanese-style chests as elite, expensive goods distant from ordinary consumers, created through the chests' high price and presence at high-end department stores.

5.4 How to get ahead in furniture: pragmatism as heritage

All three firms take pride in their industrial heritage, local skills and Shizuoka furniture's reputation now as a domestic historical furniture region, in contrast to imports. Heritage provides the firms with marketing material and differentiation amongst competitors, but its presence lies deeper and often outside visual style: in attributes such as Kinrin's desire to contribute to the community and Fukui's tiny size and 'we get by' attitude. But the three firms have also developed niche markets too small for

attention from big box shops and imports such as Nitori, and by operating at smaller scale, offering bespoke products and forming lasting customer relationships have found market viability in an extremely challenging environment. In all three cases, these shifts in strategy can also be seen as pragmatic reinventions of existing practices within the firms and in the Shizuoka furniture manufacturing community more generally. And reviewing the Shizuoka furniture industry's history over the past 150 years reveals pragmatic adaptability – to new consumer tastes, markets and lifestyles – as key to Shizuoka furniture's success (and the lack of adaptability a major element in its post-1970s failure). Adaptability, it seems, can be a heritage attribute as well as an important business skill.

6. Conclusion

The Shizuoka furniture industry's long-term viability is important for owners, employees and their immediate community, but does it really matter for Shizuoka as a whole? The prefecture and city remain Japanese industrial hubs with strengths in areas including biotechnology, motorcycles and pianos, and contribute 3% of Japanese GDP.⁷³ However, furniture is a small proportion of this figure, accounting for 3.7% of Shizuoka's manufacturing firms in 2012.⁷⁴ As some workshops choose closure over revitalisation, perhaps Shizuoka furniture is yet another example of a once-strong local industry that will continue as a few energetic, visionary firms rather than entire neighbourhoods.

But the disappearance of local industry means hollowing out of the community as well. The Shizuoka furniture industry's current GDP contribution and number of firms represent neither the size of the community in terms of family, residual skills nor the hole left by the decline of the full ecosystem around Shizuoka furniture: veneer-makers, machine tool makers and the impact of their disappearance on furniture manufacturing elsewhere in Japan.

Shizuoka furniture does matter, and Shizuoka furniture- and policy-makers alike could learn much from communicating experiences and ideas with counterparts in regions such as Brianza, Monza and the Veneto in northern Italy. Areas for particular discussion might include: smart local government support for furniture; skills and training, from primary school to mid-career apprenticeships; academia-industry linkages; using social networks to revitalise industry associations; closer links with forestry and wood utilisation decision-makers; and how furniture-makers might take advantage of changing forestry technologies and policies. Unlike some European furniture regions, for furniture industries like Shizuoka's the domestic market remains the main source of demand and is likely to stay this way, despite government promotion of exports. Regardless, local furniture industries are not only rocked by global waves, but in their myriad strategies for flourishing within them have potential global applications.

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⁷³ Japan External Trade Organisation (JETRO) (2013) Investing in Japan Regional Information: Shizuoka, <http://www.jetro.go.jp/en/invest/region/shizuoka/>, last access 8 November 2013.

⁷⁴ Keizai Sangyo Sho Daijin Kanbo Chosa Tokei (2014) Heisei 24-nen Kogyo Tokei-Hyo 'Kogyo Chiku-Hen, published 25 April 2014, available at <http://www.meti.go.jp/statistics/tyo/kougyo/result-2.html>, last access 26 June 2014.

Brandt, K. (2007) *Kingdom of Beauty: Mingei and the Politics of Folk Art in Imperial Japan*. Duke University Press, Durham.

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Designing spaces, altering forms and living in eighteenth century Jamaica

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Abstract

In the early eighteenth century Jamaica was one of, if not, the richest place on earth. The cash crop sugar meant enormous sums of money came to this island. The white colonial enjoyed a lavish lifestyle.

This paper will explore the issues facing the white colonial Jamaican household in the eighteenth century, how did they furnish their homes and how did they respond and react to the social norms of 'back home' when living in the tropical climates of the Caribbean. Did the furniture and furnishing of the colonial interior evolve and differ from its European counterparts as the eighteenth century progressed or did the colonial rigidly stick to the customs, form and decoration of their forefathers homes?

The paper will focus on three spaces in the colonial interior, the dining room, the bedroom and the piazza. The three spaces representing the private, the public and the informal rooms of the colonial residence. Contemporary literature, plans and images of furniture and interiors will be used to illustrate the gradual change of these spaces and how European taste transported itself to a new world and changed in the face of a challenging living environment.

Keywords: eighteenth century Jamaica, domestic interiors, furniture, colonial residence, piazza, Windsor chairs

Introduction

Levels of comfort and prosperity of the white colonials in eighteenth and early nineteenth century Jamaica can be calculated via the goods available at the time, and the extent to which they mimicked their British Counterparts. Were the social spaces in the home put to the same use as their British cousins or did the interior design, furniture and architecture of the Jamaican home evolve because of local conditions to embrace a less formal approach to eating, entertaining and sleeping

In order to examine this issues three spaces in the colonial interior will be studied, the dining room, the piazza and the bedroom. These three spaces represented the public, the informal and the private rooms of the colonial residence.

The Dining Room

Eating in Jamaica was conducted at different times of the day to that back in Britain. The necessity of making use of the working daylight, but to also work out of the mid day sun meant that there were what were termed 1st and 2nd breakfasts. The first was at day break and was a quick and light affair, usually only taken by those that were working out of doors or servants in the plantation house. The second breakfast was more of an early lunch, usually taken at 11am and was a large cooked meal. Even today in many hotels and larger homes in Jamaica a second breakfast is served, which would have included ackee and swordfish, Jonny cakes, breadnut and many other dishes. This meal was taken in the dining room as would have been dinner in the early evening.

The kitchen in the colonial residence like some of the large country residences of Britain were usually detached from the main house. Unlike in Britain there was no corridor or tunnel connecting to the main house but usually a covered walk way. In this way risk of fires from the kitchen were restricted even if it meant food could be tepid.

Eating was one of the main social events of the day and much ceremony was observed, in the great house formal dress was normal and in the colonial government residences full military dress was expected for the armed forces. There are many accounts of ladies passing out in the heat on these occasions and just as many notices of death by intemperance recorded in the burial registers of the time. When Lady Nugent went with her husband, the governor, on a tour of the island in 1803 she records with annoying regulatory the food served and the persons who sat at the dining table. Annoyingly, as she seemed to not notice the interiors or any other feature of the residences and locations she was visiting other than the food presented to her. She did manage to recall that on several occasion she was unable to attend church on Sunday mornings as the clergymen could not be roused from their beds after the night before. Similarly several military men died after a too fulsome dinner with enormous quantities of alcohol. The high level of intemperance is assumed to be related to much good food and drink and the consequences of dehydration.

The heat of the evening and the social occasion of eating meant careful consideration was made to the location of the dining room. The typical layout of a plantation house, or a penn, was that you entered the house via a flight of steps onto the piazza (Figure 1), and then into a short corridor that led to the dining room, or alternatively you entered into the dining room directly. It was not unusual to be able to exit onto the piazza from the dining room in all four directions if the piazza was on all four sides of the house. While this idea and plan has Palladian origins, the location of the dining room in the centre of the house is very much Jamaican. The room would be ventilated if there was any breeze by this arrangement and help with the discomfort of these events in the searing heat.



Figure One: Rock River Great House, is a typical penn style house with steps going on to the piazza, this house has the piazza enclosed with jealousies

Dining Room Furniture

While furniture such as beds, chairs and tables would have differed little from their British counterparts there are other items of furniture in the Jamaican home that were very different from Britain. Familiar forms such as breakfast tables, mahogany chests of drawers, bookcases and bureaus were typically found in the Jamaican and English home throughout the eighteenth century, as well as round, semi-circular, square, triangular, oval tables and tables for dining, taking tea and playing cards. Dining tables appear in dining rooms and beds unsurprisingly were located in bedrooms in probates and other primary material on both sides of the Atlantic, yet the common appearance of the free standing '*beaufett*' in the dining room of Jamaica does not have an English or American counterpart (Figure 2).¹ The object was a vestige from the seventeenth century, the term coming from the French

¹ Crowe Leviner, Betty, 'Buffet or Bowfat? The built-in cupboard in the eighteenth century,' *Antiques* 1999, May, pp. 754-761

‘beaufete.’ It appears it was an early ‘what not’ and was relatively common in Jamaica. Whereas other countries interpreted the beaufett as a fitted cupboard, in Jamaica it remained an open series of shelves held together by turned legs on each corner of the shelf and was used to place food prior to serving. The other piece of furniture that was listed in the dining room was the side board or side table. The beaufett and the side table or board were recognised in eighteenth century Jamaican probates as separate items and were not confused.² The sideboard appears later in the eighteenth century probates, the earliest listing appearing in 1767.³ The year before was the first time the terminology between table and board was linked, being written in the inventory as a ‘*sideboard table.*’ Although the sideboard and beaufett appear in the same inventory they were clearly defined in the minds of those listing them.⁴ Whereas the beaufett displayed all its objects on its shelves, the sideboard also incorporated several drawers. The sideboard of the late eighteenth and early nineteenth century was also different from English models. These pieces of furniture were often massive in size, one has been found to measure three meters in length and considerably taller than a British sideboard (Figure 3). They were typically decorated with a horizontal reeding on the front apron and elevated by one or two stocky turned columns, with fancy carving on the back board. Unusually the drawers are located at the side and it is thought this is so the silver and food can be greatly admired by guest and that servants could access equipage at the side of the furniture without interrupting the view of the display. The dining room location in the house is a direct response to the climatic conditions of country and the furniture that is utilised in the ceremony of eating is design to display a conspicuous display of wealth in the display of silver and food.



Figure Two: The Beaufett is a piece of Jamaican furniture that was used to display food and silver in the dining room. Their origin is very much a European form from the seventeenth century but in Jamaica they never went out of fashion.

² Gloag, John, 1990, p. 158. In Gloag's Dictionary of Furniture he states that the beaufett and sideboard were recognised as different objects in England, as illustrated by Celia Fiennes diaries in the early eighteenth century.

³ William Gosling, Carpenter, Probate, 1767

⁴ Alexander McKenzie, Carpenter, Probate, 1782



Figure Three: The sideboard in Jamaica is usually tall and longer than British examples, and unusually they stand on one or two turned columns.

The Piazza

The veranda, or piazza as it is called in Jamaica is the most informal room of the Jamaican house. Whether that is the great plantation houses, the overseers house, a town house or more humble dwellings there is usually an identifiable piazza. Most of these houses had a piazza on the front façade of the house, upstairs too if it was two storey, but many houses have one at the back too and some even have a piazza that runs around all four sides of the main house. The piazza to the front is often enclosed with jealousies to give the appearance of being enclosed into the main house. In reality the jealousies shaded the room or allowed the breeze in without the sun and in very bad weather acted as a first line of defense.

Piazza Furniture

Other than the dining room and bedroom the room, which probably demonstrated most clearly the inclination of the white population to creolise, was the room that had little in common with its English counterpart. The piazza in Jamaica was more than a verandah or gallery, it was probably the main social space in the colonial house. Consequently, the presence of a great number of chairs, sofas and games tables was not unusual. While upholstered furniture was never listed as being placed in this space, other chairs, which had solid seats like the Windsor chair and the leather-bottomed chair were often present. Although no leather chairs survive its appearance in the probates of furniture makers' and many citizens indicate that it was a popular form of seating. When the leather-bottomed chair was mentioned it was invariably listed as being in the piazza, and was not found in any other room. The inventory of the joiner, Thomas Sheppard of 1730, lists '6 old leather chairs' as well as '14 dozen Brazile red leather chairs' and '6 new leather chairs.'⁵ The leather chair could have been an early prototype of a planter's chair, which was a reclining chair that had a piece of leather that was swung from front seat rail to the back.⁶ However, it is probably more likely to have been a simple straight backed chair with a leather seat and back pad, just like those found in England. The presence of this type of chair declines after the 1750s and thereafter was rarely mentioned. No leather chairs are listed in furniture makers' stock after 1753.

⁵ Thomas Sheppard, Joiner, Probate, 1730

⁶ The nineteenth century planters chair had one piece of leather that acted as seat and back, whereas others and early examples may have had two pieces of leather one for the seat the other forming the back.

The Windsor chair clearly was more popular and suitable to Jamaican living. The Windsor chair was made of mahogany and was like an English Windsor chair in every other way with the exception of the timber from which it was constructed.⁷ The origin of the Windsor chair is discussed in Ivan Sparkes's book, but more recently and significantly in Nancy Goyne Evans The America Windsor Chair.⁸ Evan's scholarly work has shed new light on the origin of this chair, which it is now thought to have been originally designed as a garden chair, first being called a 'Forrest' chair.⁹ This form of chair was in use from as early as 1719, until the 1740s. Henry Williams in the 1730s constructed '6 *Mohogany Forest Chairs neatly carved with scrolls*' for Frederick Prince of Wales. The only use of the term '*forrest chair*' in Jamaica appears in the inventory of Alexander Henderson, which is dated 1740. Chairs in other inventories could have been construed as '*Windsor*' chairs, but are not titled as such. An example of this is in the probate of John Dallas taken in 1725. He had in stock '12 *wooden chairs*.' Given that the Windsor chairs were nothing but wooden, complete with boded seats this description could have been an early version of the Windsor chair, which was yet to be defined clearly or named.

The first use of the term '*Windsor*' in England according to Goyne Evans was in 1725 in a probate of that date.¹⁰ In Jamaica the first listing of Windsor chairs was only five years later in 1730, in the inventory of Francis Wood, which included '*1 Windsor chair*.' Thereafter the Windsor chair became a familiar item in the Jamaican probates. In 1734, Peter Beckford's inventory lists 33 chairs including '*2 Windsor elbow chairs*' and in the same year Thomas Howe had '*2 double Windsor chairs*' and '*4 single ditto*.' This early listing of the double Windsor chair mirrors the earliest mention of such an item in England. In 1735, the Jamaican House of Assembly paid £12.5s. for the payment of 12 Windsor chairs for the Council Chamber in the King's House.¹¹ This purchase must constitute the first institutional use of the Windsor chairs as well as giving us a clear price. It was significant that in the early 1730s English Windsor chairs were described as being made of mahogany, just as they were in Jamaica at a similar date. Charleston's first Windsor chairs were documented in 1734, while in Philadelphia they appeared a little later, in 1736.¹² Despite this fact colonial America appears to have manufactured their own Windsor chairs by 1745. The making of Windsor chairs in Jamaica was not evident in any craftsman's probate until this later date too.¹³

In Jamaica the Windsor chair was also described in a variety of forms, and given other names. The most common forms were the high and low back versions. The low back Windsor was a chair with a solid seat and turned legs, stretcher and spindle with a horseshoe shaped armrest and back doweled onto the lathes. The low back mahogany chair was another name by which the Windsor chair masqueraded. In the inventory of Harry Lumsden was listed '*6 low back mahogany Windsor's chairs*' (Figure 4).¹⁴ Just as the Windsor was referred to as a mahogany low back it also had a high back version too. The high back Windsor was similar to the low back, except the back that was extended by a further line of turned lathes on which a crest rail was mounted, forming a comb shape on top of the horseshoe already described.

⁷ Cotton, Bernard, 1991. In this comprehensive book on the regional chair all the chairs were made of local timbers. However, metropolis manufacture was not in the remit of the book, and nor was the making of the Windsor chair for the export market.

⁸ Sparkes, Ivan, 1975; Goyne Evans, Nancy, 1996

⁹ Goyne Evans, Nancy, 1996, p. 43

¹⁰ Goyne Evans, Nancy, 1996, p. 42

¹¹ Cundall, Frank, 1937, p. 168

¹² Goyne Evans, Nancy, 1996, p. 65

¹³ While we can speculate that this was the first Windsor chair to appear in a craftsman's workshop it is not certain that it was made in that workshop.

¹⁴ Harry Lumsden, Carpenter, Probate, 1799



Figure Four: The Jamaica Windsor chair was a common form of seating in the second half of the eighteenth and nineteenth century in Jamaica. It was the standard item of furniture on the piazza and often found in the dining room too in the nineteenth century.

Another variety of the Windsor chair, although not common in Jamaica, appears in several probates was described as ‘*green painted Windsor chairs.*’ As early as 1735, Peter Beckford’s probate states he owned ‘Windsor elbow chairs painted green’ and some thirty years later in 1767, William Gosling lists in his probate ‘*12 old green painted Windsor chairs.*’¹⁵ Although plenty of mahogany Windsor chairs are to be found in Jamaica, of both the low and high back variety the presence of the double and triple Windsor are much scarcer. Only one example was discovered that was painted green and was certainly the type described in numerous inventories.¹⁶

The exact provenance of the Windsor chair is unknown. Despite Goyne Evans’ extensive research its introduction into England still remains a mystery.¹⁷ It was certainly originally designed as an outdoor object as an early painting depicts the chair, in an external setting as early as 1769.¹⁸ Clearly, in Jamaica there was a need for a chair that could be placed out of doors, on the piazza, but that was heavy enough not to be blown over and not have any fabrics that could be effected by rain or harbour insects. The Windsor chair fitted these requirements and its simplicity meant that it could be easily made. Although the Windsor chairs were described as being made of mahogany in England as early as 1733,¹⁹ it was not until 1750s that evidence exists to suggest that the chairs were produced locally in Jamaica, therefore prior to this date it is likely that they were imported.²⁰ In 1753, the inventory of the carpenter Junia Young lists ‘*8 Windsor chairs,*’²¹ while Mathew Nutter had ‘*6 mahogany Windsor chairs,*’²² and William Wells held ‘*30 Windsor chairs*’ in his inventory in 1774, and a little late

¹⁵ Peter Beckford, Planter, Probate, 1735; William Gosling, Carpenter, Probate, 1767

¹⁶ My thanks to the owner for allowing me to photograph this rare object, its location is not disclosed at the request of the owner.

¹⁷ Goyne Evans, Nancy, 1996, pp. 38-42

¹⁸ NMM, PAH295, Two men are depicted sitting on a piazza in Windsor chairs, in a painting of ‘A view of the Harbour in the Parish of St. Ann’s, 1769.

¹⁹ Goyne Evans, Nancy, 1996, p. 43. The joiner Henry Williams is stated as supplying the royal household with Windsor chairs from 1729 to 1733, and describing the chairs as ‘*two richly carved mahogany Windsor chairs at £8.0.0 the pair.*’

²⁰ Discussed in Chapter three

²¹ Junesa Young, Carpenter, Probate, 1753

²² Mathew Nutter, Joiner, Probate, 1772

William Cumming had '20 Windsor [chair] frames.'²³ These furniture makers' probates suggest that Windsor chairs were produced in Jamaica in the latter half of the eighteenth century, yet they do not reveal from where these early owners of the Windsor chair bought them.

The Windsor chair did not go out of fashion and appears in a great number of inventories throughout the eighteenth and nineteenth centuries. Not only was the Windsor chair represented in a large percentage of inventories, but it also appears in great numbers in individual probates. James Watson had '10 Windsor chairs,' and more specifically Hinton East's probate states he had '14 Windsor chairs on the Piazza' and Joseph Mode also had '12 Windsor chairs on the piazza.'²⁴ When inventories list goods and chattels room by room the Windsor chair was always placed in the piazza. In the caricature of Johnny Newcombe in the West Indies, which dates from the turn of the eighteenth century, the figure of Johnny sitting in a Windsor chair illustrates what a Jamaican Windsor chair looked like. The Windsor was an easy chair to relax in, its back legs were kicked far back and the rake of the back allowed the sitter to lean backwards on the back two legs. The lifting of feet from the floor was not only a restful pose, but also prevented insects climbing up the sitters legs, and was noted several times by travellers, and clearly appeared odd and ungainly to European eyes.²⁵

The piazza was not just for sitting on, or for catching the breeze. Many inventories of planters and overseers reveal that it was used as an observation point. Spyglasses have only ever been found in the inventories of planters or overseers and were used to observe the workforce and gain warning of an attack from the slaves or maroons. The spyglass was not commonly found in urban probates whereas the table, which was usually a gaming table of some kind, was common in the town and the plantation house.

The furniture of the piazza generally consisted of two types of object, chairs and tables. Whilst the table did not differ other than location from British models, the chairs were adapted for the climatic conditions of an outdoor location.

The Bedroom

The bedrooms in the larger houses in Jamaica were in the upstairs private quarters, in smaller houses and penns the bedrooms were commonly positioned in the corners of the residence. In both types of houses the bedroom commonly had sash windows or jealousies that looked out onto the piazza up stairs or downstairs. This meant these rooms were not very private, with many recently arrived visitors to the island commenting on either being woken up by the noise and commotions of the piazza, or being frightened by servants or children peering through the window to watch them in their state of undress. The privacy of the bedroom was further undermined by the lack of ceilings in one storey properties. The omission of ceilings helped air flow in the house and also reduced the likelihood of insects living above your head in the loft (Figure 5). The internal walls therefore were often only a couple meters high numerous accounts recall visitors having to go to bed with an audience of children peering over the top! It is the architectural elements for the bedroom that illustrate the difference from its British counterpart.

²³ William Cumming, Carpenter, Probate, 1804

²⁴ James Watson, Probate, 1764; Hinton East, Planter, Probate, 1793; Joseph Mode, Probate, 1747.

²⁵ Bell, Brian, 1993, pp. 49-50



Figure Five: The ceilings in single storey houses and pennis are often absent and mean that air can flow freely, but with a distinct lack of privacy in the bedroom.

Bedroom Furniture

Whilst there were some differences in the type of objects used in the dining room, the bed chamber did not appear to have been any different from its British counterpart other than the presence of lighter bedding and the standard inclusion of the mosquito net. William Cynic describes a bedroom as being furnished in a *'simple manner'* including a chest of drawers, two or three chairs and a bedstead. He mentions to, the necessity of the mosquito net, stating that he *'heard whizzing of mosquitoes in the night, though they could not penetrate through my curtains or mosquito net, which covers the whole bedstead.'*²⁶

The description of the bed gives an insight into the desire of some Jamaicans to live as luxurious and comfortable a life as money could buy. In the *Daily Advertiser* of 1790 a bed for sale was described as *'1 four-poster bed, with fluted columns and double screws'* (See Illustration 37) and listed below this item was a *'sopha bedstead, upon a new construction, with cupola top and lathe bottoms.'*²⁷ While there are many references to mahogany and *'complete'* bedsteads there were few references to four poster beds, which is surprising considering their numbers in Jamaica today. Other than several public sale notices appearing in the newspapers and several references in the inventories, few four poster beds are evident in the inventories of the homes of the colonials. However, the inventory of the furniture maker John Fisher in 1804 lists no fewer than 20 mahogany bedposts and on his death a client had returned a bed. Fisher was most likely to have been a specialist bed maker, as his stock in trade listed little else. Only Nicholas Burke, Speaker of the Assembly, was found to own four four poster beds, otherwise their absence in the workshop of the furniture makers and the household goods

²⁶ Cynic, William R., 1826, pp. 314-315; p. 10

²⁷ BL, Colindale, *Daily Advertiser*, December 20th 1790. The double screw referred to in the advert was probably reference to Solomonic columns on the head and foot boards.

of other inventories suggest that they were relatively rare and more fashionable in the nineteenth century (Figure 6).²⁸



Figure Six: The large and very heavy Jamaican four poster bed is not found elsewhere in the Caribbean. The enormous posts are often heavily carved and a testament to the turner and furniture makers craft.

Equally rare as the four poster bed was the wardrobe. The predecessor to this storage cupboard was the press or clothes cupboard, both of which were commonly referred to in eighteenth century furniture makers' probates. The term 'press' in Jamaica, as it does in Britain, begins to be referred to as a wardrobe after Hepplewhite first used the word in his *Cabinet Makers and Upholsterers Guide* in 1788.²⁹ Only a year later in *The Cornwall Chronicle* at Montego Bay a wardrobe was for sale, stating it as '*an elegant mahogany wardrobe.*'³⁰ Despite the seemingly quick adoption of the terminology from London, the term was not in common use in Jamaica until the end of the century. The transference from press to wardrobe was clearly confusing at this stage, as in the probate of Abraham Benaim, in 1797 the administrator referred to a '*mahogany press or wardrobe.*' Yet a couple of years later James Renny's probate reveals that he had many items in his bedroom including a tent bed and wardrobe.³¹

Conclusion

By examining the dining room, piazza and bedroom of the colonial residence we can determine that elements of both furniture and architecture were adapted and altered for living in eighteenth century Jamaica. The climatic conditions of the island made life hard to live and the terribly low average living age, late thirties, illustrate the necessity to make life as comfortable as possible. By examining these three spaces it is clear that all aspects of life were altered to do this, even if rigid social etiquette still had to be accommodated.

²⁸ Nicholas Burke, Speaker of the Assembly 1770, Probate, 1772.

²⁹ Hepplewhite, George, 1788

³⁰ Winterthur, *Cornwall Chronicle*, August 8th 1789.

³¹ Abraham Benaim, Silversmith, Probate, 1797; James Renny, Merchant, Probate, 1799

Made in Italy 2.0: The Prominence of Craftsmanship in Contemporary Italian Furniture Design

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Abstract

Craft has long played a key, if overlooked, role in Italian furniture design. This is not just true of the celebrated post-war period, when architects such as Gio Ponti turned to Italy's wealth of skilled artisans to realise designs such as 1957's *Superleggera* chair for Cassina, but also today. As Joseph Grima, *Domus*' current editor recently identified, Italian design is entering a new era; it is stepping out of the shadow of Ponti and co. to resume a leading role in international design - and craftsmanship has a prominent role.

This paper examines the multi-faceted presence of craft in contemporary Italian furniture design, which is part of a larger engagement with the handmade in contemporary Western practice. It explores current and future directions of design's turn to craft and consider the multiple issues this raises in Italy and elsewhere. Key trends include designers' engagement with manual making, as seen in Formafantasma's *Craftica* 2012 series of primitivist stools, lamps and products, commissioned for Fendi's *Design Performance* programme. Formafantasma is part of a new generation of ethically and environmentally charged set-ups updating Italy's craftsmanship tradition through collaboration between designers and craftsmen, another key facet of the current craft revival, is key. These include the start up Formabilio, which combines small-scale workshop manufacture with online, participatory design and the family-owned Mattiazzi's collaborations with designers such as Konstantin Grcic. This continues an investment in international designers that dates back to Cappellini's early nineties patronage of Jasper Morrison. These collaborations complicate the 'Italianness' of Italian design – which is further complicated by projects such as Moroso's *M'Afrique* series of internationally-designed, Senegalese-made, furniture. These new endeavours not only suggest how Italy's manufacturers are aiming to keep ahead of the commercial curve, but also show the importance of examining design and craft's relationship, whatever nation it is in.

Key Words: *Italy; design; craft; digital; post-war design; contemporary design.*

Introduction

The *Salone del Mobile* is a useful barometer for gauging the health of Italy's design industry. Since its launch in 1961, when 20,000 visitors came to see 300 all-Italian exhibitors, the Milanese furniture fair has grown to become the largest in the world today.¹ Official figures for the 2013 *Salone* recorded 1,300 exhibitors and 300,000 visitors coming from every corner of the globe.²

Combine these numbers with the innumerable products launched and myriad deals signed and it is not surprising that the fair receives widespread press coverage. This has always been fuelled by concern at Italy's place in the wider furniture industry; it was these worries that prompted the *Salone*'s establishment in the first place.³ This year however the air of pessimism was inescapable. In an interview conducted at the London Design Festival later in the year, Patrizia Moroso, the creative

¹ Laura Lazzaroni (2001) From Exhibit to Event: The Salone del Mobile "Case". In *Made in Italy? 1951 - 2001*, ed. Luigi Settembrini, Skira, Milan, 118.

² COSMIT (2013) *Salone Internazionale del Mobile Figures*.

http://www.cosmit.it/en/milano/i_saloni/salone_internazionale_del_mobile/facts_and_figures [accessed 3rd October 2013].

³ Lazzaroni, From Exhibit to Event. In *Made in Italy?*, ed. Settembrini, 118.

director of the eponymous Italian furniture company located in North East Italy, declared that Milan ‘is sitting in the past’.⁴

Moroso, whose 2013 collection included pieces designed by the Anglo-Indian duo Doshi Levien and the Spaniard Patricia Urquiola, declared that unlike Britain, Italy was still one of the world’s great furniture producers today. This is the nation’s ongoing craft heritage that underpins the valuable “Made in Italy” tag.⁵ However as compared to the UK, her country had lost it way in design terms. Inferior schools and a detrimental economic and political situation were harming Italy’s creative industries in ways that spelled trouble for the future. Specifically, the absence of home-grown design talent meant ‘losing the culture behind production’ - and with no culture of design, the culture of craft on which Italy’s design prowess relied was an endangered species.⁶

Moroso’s concerns were echoed by Joseph Grima, until recently the editor of pre-eminent Italian design magazine *Domus*: ‘I think everybody realises that ... an era is drawing to an end’ he said.⁷ For Grima, this was evident in the exhibition that the Triennale, the city’s design museum, had organised for the 2013 *Salone. Il syndrome dell’influenza* (The Influence Syndrome) was dedicated to the Italian *maestri* (masters) who had presided over Italy’s much mythologised post-war period, such as Vico Magistretti, Gio Ponti and Ettore Sottsass and the brands that had made them, including Cassina and Driade.⁸ While some young designers were included in the show, including Martino Gamper and Studio Formafantasma, their presence was framed by this weighty legacy. This was an exhibition firmly fixed on Italian design of yesterday, not today.

Looking backwards has been a defining feature of recent *Salone* more generally, one that has been most notable in Italy’s leading role in the current appetite for re-editions amongst producers and consumers alike.⁹ This trend is taking a number of forms: firstly the production of furnishings that have previously existed only as prototypes or one-off pieces, such as Molteni & C’s 2012 edition of Ponti’s furniture designs from the thirties and fifties; secondly the re-issue of pieces long out of production, often by largely forgotten designers – such as Gastone Rinaldi’s 1950s neo-rationalist and organicist chairs, re-issued by Poltrona Frau in 2013. Thirdly, and most recently, are those objects that were still in production until fairly recently, such as Antonia Astori’s trio of marble tables for Driade, first designed in 1989 and re-edited in 2013.¹⁰

For Grima, this turn to the past expresses a nostalgic search ‘for comfort in history’, a desire to remember the nation’s former design greatness.¹¹ Like Moroso, he too sees Italy’s design industry in crisis, and he too identifies the cause in an education system ill equipped to foster a new generation of Italian designers and a ‘bureaucratic [and] economic framework’ unfavourable to growth.¹²

Given the present state of the industry, their gloom seems well judged. The widespread economic downturn has led to a contracting domestic market and a decrease in the share of the export market,

⁴ Patrizia Moroso (2013) Milan is “Sitting in the Past” says Patrizia Moroso, *Dezeen*, 21 September. <http://www.dezeen.com/2013/09/21/milan-is-sitting-in-the-past-says-patrizia-moroso/> [accessed 22 September 2013].

⁵ Moroso (2013) Milan is “Sitting in the Past”. For more on the idea of “Made in Italy” see the chapters in Grace Lees-Maffei and Kjetil Fallan, eds (2013) *Made in Italy: Rethinking a Century of Italian Design*. Bloomsbury Academic, London.

⁶ Moroso (2013) Milan is “Sitting in the Past”.

⁷ Joseph Grima (2013) “An Era is Drawing to an End for Italian Design”, *Dezeen* 16th May. <http://www.dezeen.com/2013/05/16/anders-warming-mini-joseph-grima-italian-design/> [accessed 22nd September 2013].

⁸ Triennale Design Museum (2013) *VI Triennale Design Museum: Design. La Sindrome dell'Influenza*. <http://www.triennale.it/it/mostre/future/2323-vi-triennale-design-museum-la-sindrome-dellinfluenza> [accessed 18 August 2013].

⁹ This trend has been discussed in Johanna Agerman Ross (2013) ‘Come Again?’ *Disegno* no. 4, 30 – 34.

¹⁰ COSMIT (2013) *I Saloni 2013 – an Overview*, 9th April. <http://www.cosmit.it/tool/home.php?s=0,2,67,72,317,1167> [accessed 3rd October 2013].

¹¹ Grima (2013) “An Era is Drawing to an End for Italian Design”.

¹² Grima (2013) “An Era is Drawing to an End for Italian Design”.

traditionally Italian design's main destination. The most recent figures available show that 2011's sales of thirty-two billion Euros represented a drop of nearly five per cent on the previous year. This was accompanied by around a two per cent drop in the number of employees and companies operating.¹³ Those to close, or at least come close to doing so, include Driade, whose presence at the 2013 *Salone* was only possible due to its buyout the previous year, following the firm's collapse with debts of 1.7 million Euros.¹⁴

Aside from its education, economy and politics, Italy's furniture firms have themselves been identified as part of the problem. Still largely family-run and small in size, their unquestionable ability in producing goods has not always been matched by sufficient expertise in marketing and distribution, which is vital to both maintain existing markets and expand into new ones.¹⁵ These issues of structure and scale have made these firms even more vulnerable to the vicissitudes of the global economy; approximately half of family-run sofa manufacturer Natuzzi's sales are in America, an over-reliance which contributed to the firm losing fifteen million Euros in 2005 following the market's weakening.¹⁶ Nor did Natuzzi or most of the other sofa manufacturers clustered around the Southern town of Matera anticipate the competition presented by China's low-wage, hi-tech production model. This has not just decimated their share of the lower end of the market, but also increasingly challenged the upper end, a domain traditionally Italy's niche given its emphasis on quality, provenance-based manufacture.¹⁷

Furthermore, if, as Moroso and also Grima suggest, Italy's artisanal heritage represents what is still distinctive and valuable about Italian design today then this too does not bode well. To give one just example, the artisan responsible for prototyping at Driade is seventy years old and has no clear successor – a story that is being repeated throughout Italy's furnishing and fashion industries.¹⁸ In a country that has long taken its artisanal prestige for granted, young people have been encouraged into university degrees that have lead them away from craft professions and instead into offices, or unemployment. Over a third of Italy's youth do not have a job, and yet its manufacturing industries are struggling to find new recruits.¹⁹

Despite this depressing picture there are those optimistic about the industry's future. For Grima, the end of one era means the start of a new one: he notes that some manufacturers are thinking about different models for Italy's design industry, ones in which Italy's artisanal expertise would have a role. His positive outlook echoes that of Stefano Micelli, an Italian economist who has repeatedly argued that despite its current decline, Italian industry does have a future as a global competitor – and it lays precisely in the nation's craft abilities. As he described in 2011's *Futuro artigiano: l'innovazione nelle mani degli italiani* (*Future Craft: Innovation in the Hands of Italians*), despite the indifference towards its craft heritage, Italy is a country of 'knowledge workers' and 'know how' to a degree unmatched elsewhere; this is what has 'made our manufacturing flexible, dynamic, and above all interesting', particularly as consumers are seeking 'history and culture in the products their acquire'.²⁰ 'Craft work' as he puts it, 'is one of the few cards that we can play to achieve a real position on the

¹³ Antonio Catalani (2013) 'The Italian furniture Industry Needs Helps, Too', *This is Italy*, 12 April. <http://www.thisisitaly-panorama.com/opinions/the-italian-furniture-industry-needs-help-too/> [Accessed 4th October 2013].

¹⁴ Anon (2013) Driade to Relaunch after Financial Rescue, *Dezeen*, 8th June. <http://www.dezeen.com/2013/06/28/driade-to-relaunch-after-financial-rescue/> [accessed 4th October 2013].

¹⁵ Claudio Luti (2013) New Salone del Mobile President to Tackle Issues that "Damage Milan", *Dezeen* 25 May. <http://www.dezeen.com/2013/05/25/claudio-luti/> [accessed 20 September 2013].

¹⁶ Anon (2006) Italy's Sofa Cluster: Not Exactly Sitting Pretty, *The Economist*, 23rd November, 65.

¹⁷ Anon (2006) Italy's Sofa Cluster, 65.

¹⁸ Anon (2008) Driade and the Death of Italian Craftsmanship, *Eurbanista*, 11th May. <http://www.eurbanista.com/driade-and-the-death-of-italian-craftsmanship/> [accessed 28 September 2013].

¹⁹ Anon (2013) Dropped Stitches: A Lack of Skilled workers Could Kill one of Italy's Manufacturing Successes, <http://www.economist.com/news/business/21579843-lack-skilled-workers-could-kill-one-italys-manufacturing-successes-dropped-stitches> [accessed 5 July 2013].

²⁰ Stefano Micelli (2011) *Futuro artigiano: L'innovazione nelle mani degli italiani*. Venice, Marsilio, 10.

international scene.’²¹ Like the American sociologist Richard Sennett’s *The Craftsman*, this is a book about craft that has reached a readership way beyond its normal audience; it has topped Italy’s bestseller list and is now in its fourth edition. It seems that after having long taken their craft heritage for granted, Italians are recognising its potential.

I share this optimism. Craft, which has long played a vital, if overlooked, role in Italian design, has in recent years gained a new prominence in the nation’s design culture. Faced with repeated economic crises, an apparent exhaustion of domestic design talent and stiff competition from cheaper producing nations, there have been a number of Italian designers and manufacturers who have been exploring different strategies and approaches that suggest renewal for the furniture industry, and they are all based on craft. While not unproblematic, they represent some of the most interesting visions for what a future furniture design industry in Italy, and elsewhere, might look like.

Examining some of these examples of craft in contemporary Italian design constitutes the rest of this paper. First though, we need to understand the role that craft has played in the history of Italian design, specifically in the years from 1950s to the 1980s, when Italy emerged from the ashes of war and came to dominate the global design scene through products imbued with a sleek, desirable, modernity.

History: The Role of Craft in Post-War Italian Design, 1950s – 1980s

Craft was at the heart of this much-mythologised period in Italian design. It is embedded in design “icons” such as Ponti’s *Superleggera* chair, put into production in 1957 by Cassina, who still manufacture it today. Design’s debt to craft here is multiple. On the one hand, the chair dialogues with Italy’s craft traditions, its design inspired by a vernacular woven-seated, ladder-back chair from the coastal village of Chiavari.²² On the other is its craft-based production: artisanal skills were vital for the innumerable models and prototypes produced in the design’s decade-long development. This widespread proficiency remained crucial when the *Superleggera* was eventually put into production; both that of the female pieceworkers who wove the chair’s seat on Chiavari’s rural outskirts, and that of the male artisans at Cassina’s factory in Meda, a town located in the Brianza area above Milan that is the heart of Italy’s furniture industry.²³

Even as designers engaged with the new materials and technologies of the sixties, craft remained an important ingredient. Magistretti described how the s-shaped section of his design for the *Selene* chair for Artemide was so complex that he couldn’t actually draw it. Luckily he could go and talk to a ‘sublime model-maker’ who could interpret his ideas into a three dimensional form.²⁴ As with the *Superleggera*, these skills remained in play as the chair went into production. This was most notable in the handmade mould used to manufacture it, produced in house at Artemide’s factory in Pregnana Milanese, also in Brianza.²⁵

These firms’ geographical proximity and the collaborations on which they continue to depend are two of the key characteristics of Italian furniture manufacture. Brianza is the largest of Italy’s three main furniture-producing areas - the others being the Veneto, where Moroso is based, and Murgia, near Matera.²⁶ These are examples of Italy’s *distretti industriali* (industrial districts), the networks of

²¹ Micelli (2011) *Futuro artigiano*, 11.

²² For an indepth examination of the chair’s history and manufacture, see Catharine Rossi (2011) *Crafting Design in Italy, from Post-War to Postmodernism*, PhD Thesis. London, Royal College of Art, V&A Museum.

²³ Ibid.

²⁴ Magistretti (1988) in S. Giacomoni and A. Marcolli, *Designer Italiani*. Milan, Idealibri, 187 in Vanni Pasca (1991) *Vico Magistretti: Elegance and Innovation in Post-War Italian Design*. London, Thames & Hudson, 49

²⁵ Pier Carlo Santini (1973) *Un produttore e la sua industria*, *Ottagono*, 52.

²⁶ Barbara Agostini and Alessandra Salaris (2009) *Design*. In *Mestieri d’Arte e Made in Italy: giacimenti culturali da riscoprire*, ed. Paolo Colombo, Venice, Marsilio, 85 - 86.

mostly small, highly specialized, producers that work together to realise the products of “Made in Italy”, be it furniture in Brianza or textile and clothing in Tuscany.²⁷

These networks are the result of Italy’s specific industrial history. The nation did not experience Britain’s industrial revolution but rather underwent a much more staggered and uneven process that allowed for the continuity of artisanal traditions alongside newer industries. These networks have been responsible for the production of the whole of Italian design, from Ponti’s *Superleggera* and Magistretti’s *Selene* to Sottsass’s *Casablanca* bookcase, designed in 1981 for Memphis, a group whose objects were not intended to look handmade but would not have been possible without Italy’s skilled hands.²⁸

History: New Approaches in 1980s Italian Design

The 1980s is a significant moment in this history. It was when Italy’s “industrial districts” first came to international attention, thanks to several economic studies which held up Italy’s manufacturing system as the model for post-industrial production.²⁹ It also heralded a significant shift in approach to design amongst Italian manufacturers, one that has shaped the industry’s contemporary landscape.

In a strategy pioneered by Giulio Cappellini at his family’s eponymous Brianza firm, Italian manufacturers started to seek out collaborations with designers that were not Italian. This was a first not just in Italy but also more generally in the design world, where manufacturers and designers had largely been the same nationality. While this strategy was viewed unfavourably by some, it also attracted praise for showing the industry’s productive quality and innovative energy, willing and able to invest in the next generation of designers.³⁰ It was through this early patronage that Cappellini helped launch the careers of several British designers in particular, including Tom Dixon and Jasper Morrison.³¹

Since the late 1980s, Cappellini have been joined by manufacturers such as Driade, Magis and Moroso to work with both established and emergent international designers, from Philippe Starck to Naoto Fukasawa, Thomas Heatherwick and Raw Edges. Today, it could seem that most of Italian manufacturers’ output is not Italian designed. What does this mean for their identity – can such wares still be considered a product of Italian design culture? The short answer is yes; what these collaborations suggest is that the legacy of Italy’s post-war design prowess lies not in its designers but in its manufacturers, whose innovativeness and openness to change have kept Italy in the design spotlight.

Italian Design Today: Italian Manufacturers and International Production

More recently Italy’s manufacturers have been undertaking strategies that could be seen either to strengthen, or undermine, this position. There has been a move not just towards foreign designers, but producers. This has been happening in two, distinct, ways; covert and cultural. These phenomena open the final section of this paper, which examines the current strategies being explored by Italian designers and manufacturers.

²⁷ For an in-depth analysis see Michael L. Blim (1990) *Made in Italy: Small-Scale Industrialisation and its Consequences*, New York and London, Praeger.

²⁸ Rossi (2011) Making Memphis: Glue Culture and Postmodern Production Strategies. In *Postmodernism: Style and Subversion 1970 – 1990*, ed. Glenn Adamson and Jane Pavitt. London, V&A Publications, 160 – 165.

²⁹ In addition to Blim, these included Edward Goodman, Julia Bamford and Peter Saynor, eds (1989) *Small Firms and Industrial Districts in Italy*. London and New York, Routledge.

³⁰ Giulio Cappellini (2007) Giulio Cappellini. In *La fabbrica del design: conversazioni con i protagonisti del design italiano*, ed. Giulio Castelli and Francesca Picchi. Milan, Skira, 265; Cristina Morozzi, (1996) *Contemporary Italian Furniture*. Milan, Edizioni L’archivolto, 9.

³¹ Agostini and Salaris (2009) Design. In *Mestieri d’Arte*, ed. Colombo, 84.

The first, covert, strategy is a direct response to the problem outlined in the introduction; the undercutting of prices by producers located elsewhere. This is a problem not just in the furniture industry but in fashion, in which the idea of “Made in Italy” has proved just as lucrative and as problematic, due the expense of Italy’s labour-intensive manufacturing set-up. One of the fashion industry’s responses has been to relocate manufacturing beyond Italy’s borders, a move largely concealed from consumers due to the implications for a market that desires its goods Italian made.³² In the last ten years, the sofa manufacturers clustered around Natuzzi have been amongst those to have similarly moved sawmills and other pre-production stages to cheaper European neighbours including Croatia, Poland and Romania.³³ Rising labour prices in these countries have subsequently seen production shift further east. These include Driade; by 2007 it had relocated twenty per cent of its production to Asia, with other manufacturing operations in countries including Indonesia, India, Thailand and Poland.³⁴

Moroso, whose company’s products are entirely made in the area around their Udine factory, has been amongst those to criticise this strategy.³⁵ On the one hand, it is seen to undermine attempts to preserve what is most distinct about Italy’s place in the marketplace - the quality of its goods. On the other is Asia’s increasingly ability to compete with Italian manufacturers in terms of quality, not just quantity – an improvement that arguably contributed to Driade’s downfall.

Given this criticism, it is interestingly that Moroso represents the second type of non-Italian production; cultural. In 2009 Moroso launched the first of its *M’Afrique* collections in which designers including Urquiola and the Dutch designer Tord Boontje (Figure 1) were invited to produce designs for chairs that were then made by artisans in Senegal. The rationale for this is not strictly economic. The mode of production is neither cheaper nor quicker than Italian made goods, but this is not where its value lies.³⁶ According to Moroso, the object’s attractiveness lies in its artisanal ‘individuality’; curiously though the company is not promoting the individuality of the Italian hand, and instead identifies it in the African artisan.

³² For more on this issue in relation to fashion, see Andrew Ross (2004) The Trouble with Craft Capitalism, *Antipode*, vol. 36, no. 2, 209 – 215.

³³ Peter Gumbel (2005) Twilight in Italy, *Time*, 5th December.

<http://content.time.com/time/world/article/0,8599,2047681,00.html> [accessed 03 10 2013].

³⁴ Enrico Astori (2007) Enrico Astori *La fabbrica del design*, ed. Castelli and Picchi, 222.

³⁵ Moroso (2013) Milan is “Sitting in the Past”

³⁶ Johanna Agerman Ross (2009) Moroso’s M’Afrique collection, *Icon*. <http://www.iconeye.com/news/news/morosos-mafrique-collection> [accessed 4th October 2013]



Figure 1: Tord Boontje, *Shadowy* chairs from the *M'Afrique* collection for Moroso, 2009. Steel structure and manually woven polyethylene

This Western, primitivist appropriation of non-Western making cultures is also seen in the *Cappellini Love* collection, designed by the American Stephen Burks and made of recycled paper by South African artisans.³⁷ These objects do not celebrate the specificity of either Italian design or its craftsmanship and as such raise questions about their *italianità* (Italianness). Do they speak of the irrelevance of place-based production in a globalised world, or do they undermine any rationale for preserving the place for Italy, and its crafts, in the international design industry?

While the value of these strategies is still up for debate, there are examples from the industry that do point towards a viable future for its craft, and which suggest what shape Grima's new models of design and manufacture could take.

Italian Design Today: Re-Engaging with Italy's Craft Traditions

These include Studio Formafantasma, the Sardinian-born, Eindhoven based design duo who regularly engage with Italy's established craft traditions, such as Sicilian bread making, and experiment with new ones, such as 2010's *Autarchy* and 2012's *Craftica* collections which engaged with vernacular Sicilian bread making and fish leather offcuts from luxury handbag manufacturing respectively.³⁸ Formafantasma are amongst several designers, both Italian and non, who have been sought out for craft-based collaborations by a brand who recognises the potency of combining contemporary design with conspicuous, Italian, craftsmanship. This is not however a furniture company, but a fashion one: since 2009, Fendi has been annually inviting designers to make objects using offcuts from their manufacturing process with the aid of the company's artisans, all in front of a live audience. This

³⁷ Cappellini (2008) *Cappellini Love*, *Cappellini*, 16th April.

<http://www.cappellini.it/portal/page/portal/new/webpages/cappellini/press/r/home?p=id:213453&lang=en> [accessed 4th October 2013].

³⁸ Formafantasma (no date) *Formafantasma* <http://www.formafantasma.com/formafantasma.html> [accessed 11 December 2013]

savvy emphasis on craft in action draws attention to the specificities of materials and skills of Italian artisans in a way that its furniture companies could do well to heed.

That is not to say furniture manufacturers have also been engaged in a new emphasis on craftsmanship. These include Mattiazzi, set up in Udine 1978 by two brothers, Nevio and Fabiano Mattiazzi, for thirty years the firm worked as a subcontractor, producing furniture designed by neighbouring companies. This was until 2009, when they started collaborating with designers including Industrial Facility and Konstantin Grcic.³⁹ This strategic shift from subcontractor to manufacturer of their own designs is one being repeated by other firms, who similarly recognise the need for new ways of being competitive when the ability to make well is no longer enough.

Mattiazzi has not just injected design into its craft-based operations, but the digital. Its craftsmen work alongside technologies including an eight axis CNC milling machine – what they call a ‘robotic craftsman’ – that allows them to create forms in wood with the complexity of plastic, such as 2012’s *Branca* chair (Figure 2) by Industrial Facility.

If Mattiazzi is significant for showing how the digital could future proof craft’s role in the realms of manufacture, newer enterprises are exploring what it could do in terms of marketing and distributing Italy’s crafts.



Figure 2: Industrial Facility, *Branca* chair, Mattiazzi, natural ash, 2010

³⁹ Jonathan Olivares (no date) A New Beginning for Machines and Hands, *Mattiazzi*. <http://www.mattiazzi.eu/about/> [accessed 3rd October 2013]

These include Formabilio, established in January 2013 by a young Milanese couple.⁴⁰ A self-described ‘web platform’ rather than company, Formabilio embodies the new, open and collaborative operations typical of the so-called “third industrial revolution”.⁴¹ It consists of multiple players: designers, who upload their entries for themed design contests set up by the company; consumers, who make suggestions for changes and pick their favourite, and manufacturers, who sit on the Formabilio panel that decides the winning design to put into production.⁴² These have included *Rolle* (Figure 3. Mario Palmieri, *Rolle* stool and stepladder, varnished or natural plywood, Formabilio, 2013), a multifunctional stool and stepladder designed by Mario Palmieri who, like most if not all of the designers involved, is Italian.

Although early days, Formabilio seems a success story. As of December 2013 there were over 78,000 registered users, 1,600 designers, 3,400 submitted products and four manufacturers.⁴³ The latter all based in the Veneto area, where Formabilio’s owners moved to from Milan in order to benefit from its reservoirs of craft expertise. They feature prominently on the company’s website, with text and videos explaining how the select group were chosen for corresponding to the narrative and productive quality of the “Made in Italy” ethos – a storytelling that Micelli recognised as increasingly important today.⁴⁴



Figure 3: Mario Palmieri, *Rolle* stool and stepladder, varnished or natural plywood, Formabilio, 2013

⁴⁰ Anon (2013) Forza Formabilio: An Italian Start Up, *Economist*, 22nd May.

<http://www.economist.com/blogs/schumpeter/2013/05/italian-furniture-start-up> [accessed 18 August 2013].

⁴¹ Anon (2012) The Third Industrial Revolution, *Economist*, 21st April. <http://www.economist.com/node/21553017> [accessed 18 August 2013].

⁴² Anon (2013) Forza Formabilio.

⁴³ Formabilio (2013) Press. *Formabilio*. <https://www.formabilio.com/press#.UqbyMdJdU1I> [accessed 01 December 2013]

⁴⁴ Formabilio (2013) Our Philosophy, *Formabilio*. <https://www.formabilio.com/philosophy> [accessed 18 August 2013].

At a moment when consumers are engaged in a fetishisation of craftsmanship and narratives of local, artisanal making, Formabilio are amongst those exploiting social media and other digital platforms to bring makers to the fore.⁴⁵ Others include *Segno Italiano*, a company that seeks to bring historical, and often endangered, Italian craft traditions to the fore – including Chiavari’s straw seated chairs – through events and multimedia activities including the creation of short films that document these living traditions through a highly romanticised filter.⁴⁶

These strategies for increasing awareness about Italy’s artisans is clearly having an effect: as amongst the innumerable shows of the 2013 *Salone* was an example of an initiative that shows that it is not just Italian but international designers who have been seeking them out, for collaborations that take place outside of the structure of its manufacturing brands. J+I is one example; a collective of six Japanese female designers, including Tomoko Azumi and Kaori Shiina who have collaborated with Italian craftsmen in glass, furniture, and metalwork.⁴⁷ Not only have these designers produced objects that come out of an intimate dialogue with artisans in the workshop, but they have understood the value of this process and have too produced videos that documented their experiences and posted these on the project’s website.

Conclusion

There are any number of conclusions to be drawn here; from the growing emphasis on the performance of making and what these actually means for our understanding of Italy’s crafts, to what possible strategies big brands could enact that build on the potential these initiatives contain. Ultimately however what is most notable is that these most recent examples of designers and enterprises are all foreign to established conceptions of Italian craft; either due to their own different nationality, or due to education experiences that took place outside Italy, or down to a generational difference that suggests that the legacy of Italian design today is no longer a weight, but an opportunity for designers, Italian or otherwise. All however recognise the implicit value of Italian craftsmanship, and the need to make this value explicit in the contemporary marketplace. In *Made in Italy 2.0* it seems that it is Italy’s artisans, not designers, who are in the industry’s spotlight.

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⁴⁵ Justin McGuirk (2011), The Art of Craft: The Rise of the Designer Maker, *The Guardian*, 1st August. <http://www.theguardian.com/artanddesign/2011/aug/01/rise-designer-maker-craftsman-handmade> [accessed 09 December 2013]

⁴⁶ Segno italiano (2013) Manifesto, *Segno italiano*. <http://www.segnoitaliano.it/manifesto/> [accessed 4 October 2013]

⁴⁷ Anon (2013) What is J+I? *J+I* <http://jplusi.com/> [accessed 09 December 2013]

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Core values in furniture design

Gareth Neal

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First of all, thanks for inviting me. I apologise to a few people who maybe have seen reiterations of this presentation [laughs] in other guises. But it's really nice to come back to High Wycombe, the roots of furniture.

I graduated from Bucks myself in 1996. About 10 years later, I think, I managed to make an object that made a bit of an impact. This was the piece that did it. It's called the Anne table. At the time, it was just me moving a silver plate up and down to cut walnut, to reveal the traditional form of Queen Anne leg in an American walnut table.



Figure 1: Anne Table, Gareth Neal 2009

I've got to say, by the way, I've got to talk very fast because I've got a lot to cover and we've only got half an hour. I've got some points I really think should be made.

The idea was that I wanted to reference two points in a history of furniture. I wanted to reference the early period and then reference the modern and also then talk about craftsmanship at the same time because I always felt it was very undervalued. Perhaps this is just me wanting to assert myself and my skills.

These pieces managed to find an audience, find a marketplace, not only through the way they looked but the way that they were made, which was using just a CNC router. The idea came about through the accident of using computer-generated software where you remove one shade from another, and I saw an idea in that.

As this work evolved, we're going to back eight years now for these pieces. For me the critical bit about these pieces was the beautiful interaction between what was the handmade element and the manufactured element. Critically where does the really beautiful element in that object lie?

It was actually producing textures just by smashing into the object with a chisel that actually a CNC machine could not recreate and only a hand, an eye, a craftsman or a sculpture could actually do. This piece was from George.



Figure 2: George, Gareth Neal 2012

This work, I like to think you may have encountered it, came together or resulted from the end of producing these bodies of work with a solo show, where I happen to make a piece in the exhibition. I filmed myself doing it. I made the chest of drawers with the spectators and the people visiting the exhibition.

Now, for me, the reason I did that is about telling a story about the understanding of the importance to communicate the process about the idea as many of the audience have lost touch with objects and how objects were made.

I thought it was really critical that when designing an object or making an object that somehow that object has the ability to communicate to its audience through its design. I mean this is just me trying to get my thoughts together on really on what it was all about and what I was doing and why I was doing it.

In a way, as an artist, as a designer, my thoughts have continued to evolve in every encounter and every commission and every opportunity I get alters and builds on and layers up where I lie in my thinking around objects.

When making all these things, I got the opportunity to go into woodland and Herefordshire, a few of you might have encountered this project with a group of designers, it was called "Bodging Milano."



Figure 3: Bodging Milano sketches, Gareth Neal, 2010

It played on the heritage roots of High Wycombe, where we went into a woodland just armed with sketches, nothing else. Weirdly, in the whole time that I did fine craft in Bucks, I never really encountered green woodworking.

Perhaps through my own choices, at that time in my life, it was completely out of my comfort zone. So, in five days, we had to execute some objects that were then going to take it from the woodland to Milan.

Now, the nature of showing green woodworks in Milan Furniture fair is quite a weird combination. For those of you who got to see the show, it managed to raise a lot of interest, cause a lot of excitement, I suppose, that's something so opposed to what Milan was all about.

The fact that these were objects that come so quickly and so intuitively from the materials themselves, got me thinking about my own practice in quite a different way. This is the piece that I made at the end of my five days.



Figure 4: Gareth Neal, 2010

The exciting bit for me and about the furniture industry that is started enlightening me and others, and the group of people that I was with, was how this then could inform practice, inform business, how it can go on to be more financially viable.

Will Warren's chair was taken on by Case Furniture and ended up being manufactured in China, all from the prototypes that he had made in the woodland in Herefordshire. One of the other people that happened to be with us was a guy called Dave Green.

Now, some of you may know him. He owns a company called Sitting Firm out in Coventry that manufacture...or at the time, I suppose -- I'm going to be a little bit rude here -- manufactured gloopy, brown repro furniture, for the oversized American market, I suppose.

The market was dying, and his business in some respects was struggling. Not that we knew this at the time, but we went off to Coventry and we did the same thing, but in his factory, used his components intuitively to make and design objects just off the cuff, like 3-D sketching with components, to see what it could produce, what we could come up with.

Now, Dave Green, since his experience in the woodland, and having looked at his business afresh, has seen the beauty of how design and craft and a rethink of his business model has helped him in many ways with what he now manufactures. The work is a lot more light, a lot more airy, a lot more crisp, taking out the weight from the objects.

Chris Ecclesley is designing for him, and he's been now manufacturing for Faye Toogood, with a whole number of other designers. The business is changing and booming again, thanks to that intervention with an alternative angle in a project.

Anyway, so we thought this is quite a good way of working as a team. So we took on another challenge, which, we had an opportunity to go into Lloyd Loom. Same guys, same idea of a company, a heritage company, a company that we all know, we all -- well, we all think we know and we all think we love.



Figure 5: Woven paper manufacture at Lloyd Loom, Spalding, UK

Furniture people know it and furniture people love it, but actually the audience outside, and go back to thinking about the audience -- the audience of Lloyd Loom don't even know that the chairs are in fact made of woven paper.

So for me, that suddenly became this incredible thing that was actually...when you're involved or in the middle of a business and you're stuck within it, you can't actually see the product yourself that you are promoting. So we went in there, found some of these fantastic looms that still exist, components wrapped on the walls, and we had just two days. Within two days we had to make as...what we could in two days.

Over that two days, the group of five of us, came up with 13 different prototypes for them. They were completely overwhelmed. We also managed to get an opportunity to show that body of work in

"Designer's Block" and "Design Junction." And of course, start getting feedback and response from an audience in relation to those prototypes.

We thought we were really onto something. There's an active way of working. It became more about the idea about us as a group, about English heritage in terms of furniture manufacturing, and about people, and about materials. Out of the 13 starting prototypes, we're in development of the stacking chair of Will Warren's. We're in development of the prototype of my chair, and Chris Ecclesley is nearly there and is going to be in John Lewis for I think their anniversary or something like that.



Figure 6: Chair prototype, Gareth Neal, 2012

So all these things come out of a company that hadn't actually produced many new objects in the last 10, 20 years. So this is really what my business and what I'm all about as a designer, which is looking at traditional forms of manufacture, traditional techniques or traditional styles, and reinterpreting them; trying to tell a story about that particular material, about where that was manufactured or where it used to be manufactured and sort of in a way re-brand it, I suppose, or open it to a new audience.

I look to traditional stringing lines, often used in repro furniture now, or the Egyptian market, but of course Derelict Kingsland, where I live, was the home of veneer sales for many years, so I got the option to do a project where I re-launched these stringing lines in contemporary format and I took over Derelict's places, which were once the home of this industry and put on urban picnics for London dwellers to try and inform them about the traditional processes of that area, through viral marketing et cetera.

Did they really understand what I was doing? No, I don't think so, it's just an opportunity for them to come see something a bit a weird, have the opportunity to hang out on some really lovely hand-made furniture and sort of make out actually, some people, but anyway it was a good event it went down really well, I got some great opportunities out there, because it was a spectacle I suppose is what it was, so there's some of the examples.



Figure 7: Urban picnic event, Hackney, London, Gareth Neal, 2011

Just one more example; the idea of Camelot, the merging of people, process, and place is when I had the opportunity with the company called The New Craftsman to reinterpret the Orkney Chair. Another classic icon of the furniture world, left on its own on an archipelago of islands on the North of England, without any wood, what did they use? They used straw.

The idea in an environmental world of looking afresh and again at materials in relation to how useful they could have been and what did we miss in the Industrial Revolution as we evolved and advanced materials, the importance also to look back as well as looking forward, so the opportunity to go up there and make some hybrid between Windsor aesthetic and Orkney aesthetic, so I went and saw Kevin Gold and his uncle Sidney.



Figure 8: Kevin and Sydney, Orkney chair makers, Orkney, Scotland

Kevin's one of the youngest Orkney chair makers still on the island and the idea of introducing new designs that pay homage, but also celebrate. In the two days out there, I took a flat pack version of my sort of style Windsor chair, with a little drawer and I repaired it. Two days we wove a Orkney chair back on the object. Last process, flame throwing straw by the way, which was quite surprising, quite shocking after a few drams of whiskey.



Figure 9: Orkney chair, Gareth Neal, 2012

The idea of this is that I now sell it in London potentially, when they're sold, we send a kit of bits up, Kevin assembles them and then it brings, hopefully in theory, the idea brings industry back to Orkney. People are leaving the islands, going to the mainland where it gives the workers or the...when you are, my train of thought, but like home work, after work activities, in your time, you can weave the back of a chair and puts a bit of industry back there.

That's one of the trains of thought, the other train of thought was that a Chinese magazine said, "Can we feature your Orkney chair?" I had that thought, "Do I really want a Chinese magazine ripping it off or taking those ideas and running with them?" I thought, "Yes that's exactly what I do want, because I want people to start using straw in manufacturing again, because of it being a wonderful material, incredibly durable, and overlooked at the moment."

This gives me 10 minutes to talk about the last project, which is called, "In Pursuit of Carbon Negative," some of you may have seen it, this was the summer of 2012, where I challenged myself to look at the notions of the environmental gender in relation to pieces of furniture, in relation to furniture manufacture I should say.

I got a bit tired of this being pumped with, "We're a green product, sunflower oil," it's still the black gold. I wanted to look at that traditional kind of way that the furniture industry would work, the woodland gets transported to the sawmills, that gets cut up, moved on, cut up again, dried on, moved on, shipped around to somewhere else to make it, and then shipped to somewhere to store it, and then shipped to somewhere to sell it, and then sold to market.

Then nobody really wants to keep those pieces of furniture for very long, so the whole cycle continues again, so I wanted to look at that, especially because I had these conversations with Will Warren about the production of his chair in China, it's like, "Well, it came from the UK idea, should you be UK production?" I just wanted to have a really good look at how we might be able to interpret this life cycle of an object.

I was inspired by this guy that we hung around, I like to call "Bubbles," who comes around the studio and he's just basically a rag and bone man with an alcohol problem.



Figure 10: 'Bubbles' bike and trailer, Hackney, London

I don't think he's got a driver's license or can afford a car, but he piles everything made of metal and I love it when he's got bits of furniture on the back of his trolley, because sometimes you see so much stuff on it. It's quite unbelievable what he's dragging around, so I thought, "Well, you know we can move furniture," I like to think that the audience here knows that trees take carbon out of the environment and it's a carbon sink.

I'm taking that for granted with this audience. I also read this book, "How Bad Are Bananas," that talks about the carbon footprint of everything else. If I eat a burger, then we're burning loads of carbon in eating a burger. If I eat a banana, we're not actually burning that much carbon, because they're shipped around the world and they don't have to be refrigerated, so this book explains it all.

Using that as my Bible and the bicycle as the idea, I just needed a few partners to bring the thing together. I wanted a company that could sell them, SCP became the company, I needed a company to work out the carbon footprint and that was Phlorum. I needed a university and that was the University of Brighton, who supported the project.

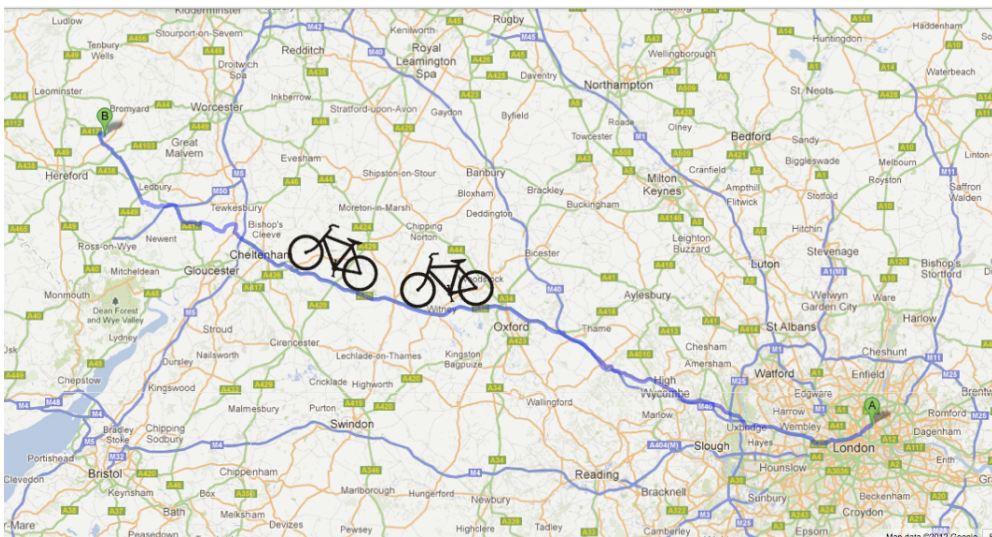


Figure 11: The route, London to Herefordshire, UK

I needed a route and a woodland for manufacture. That became Hereford here, where the beer is. My studio's there in Hackney. I had to cycle out of London through this area, through High Wycombe, out through Oxford, up to Hereford. I got two assistants from university to help me, Zenya and Josh and after leaving in 32 degree heat in middle of August, I was pretty knackered by then.

I'm not particularly into cycling, I'm not a fitness freak or anything like that. I cycle from A to B, but I'm not like a weekend cyclist, so it was a challenge for me, but what did this all become about? For a lot of the journey, and actually, a lot of the research project itself, it became more about the food. The attempt to take the high carbon producers out of your diet is incredibly hard.

For those of you here who are meat eaters, which I am, meat is not a good one. I had to take meat out. Then you think about it, and actually, all the eggs and milk, they're also really high carbon. I wanted to try and take dairy products out of my diet as well.

When I set off, I set off with basically very, very little. It was getting difficult. Eventually, we succumbed to the idea that we needed sugar. We bought some jam off the lovely Lynn, who was outside Oxford.



Figure 12: Lynn in Oxford

This whole journey, you encounter lots of different people. Through this firsthand research, you start learning little bits about design that you would never really think about. This guy happened to look at us for a while.

Well, we were standing in his way, actually, on a bus stop, and he was heading somewhere to buy some replacement parts for his Hoover. What a wonderful encounter. He could not get parts for his Hoover from Argos, where he bought it. He was really upset and pissed off about it.



Figure 12: Man in search of a hoover part

He was off on a mission on a bus to go and get a spare part to repair his Hoover, so he's made it into the lecture. This guy, this was his last pot of honey that he sold us, and he was from Hereford as we went through Hereford.

I look at his face as he's handing over his last pot of honey. Bad year for bees, he said to me. I was like oh, that's interesting. Why is it a bad year for bees? The whole passion about let's think about carbon. Eventually, we will all be fined for our carbon. Every business will need to consider this.



Figure 13: Last pot of honey!

Starting from afresh and thinking about industry in a way that perhaps goes back in time. This guy lives and he works in his woodland in Herefordshire, and it's called Moreton Woods. His name is Paul Moreton. He lives and works out of this small copist woodland.



Figure 14: Green building by Paul Moreton in Moreton woods, Herefordshire, UK

He's traditionally a hedgerow worker. He could produce these objects, so if they went onto sell, he can manufacture them for me. We spent another two days from the wood that he's felled in the tree making the products.



Figure 15: Furniture made in Moreton woods, Gareth Neal et al, 2012

Then I had the ordeal of cycling what became 50 kilos of green, wet wood back on the bicycle all the way back to London, 150 miles, back to London, which of course, I set about doing. When you travel across a landscape, especially going through High Wycombe, you don't see...



Figure 16: Cycling back to London (150 miles)

I drove directly through High Wycombe. Apart from the sign to the chair museum, there is very little to indicate about the heritage of this place. It is just unbelievable what happened in the woodlands of Bucks, and it just drove it home as you pass through this landscape.

I managed to get back to London. We dealt with the raw material and the extraction. We dealt with the material processing. We dealt with the part manufacture and assembly, and we dealt with the delivery to SCP. I think and there are the final products that have been on show and are on sale in SCP.



Figure 17: Arrived at SCP, London, 2012

To conclude, it is potentially possible to go back in time and deliver it. That concludes my talk.

Author biographies

Prof. Johnny Grey's ideas have influenced the world of home design for the past 35 years. Nephew of Elizabeth David, doyenne of British food writers who acted as his mentor in his early years, he trained as an architect at the London Architectural Association School of Architecture. After graduating in 1977 he set up a design studio and furniture workshop. His kitchen design career began with a friend's request for a punk gothic kitchen. Items of furniture as the kitchen's practical and visual workings have always been at the heart of Grey's approach to design. He developed the concept of the Unfitted Kitchen. Smallbone of Devizes contracted Grey to develop 150 pieces of furniture to make up their collaborative version of the Unfitted Kitchen which was launched in 1987 in the UK and two years later in the USA. With the kitchen as the prime site of domestic life, Grey adapts houses around sociable kitchens, 'living rooms in which you cook' that include linkage to the garden. Grey's studio's work encompasses listed buildings and new homes, open-plan and tight spaces. Specialist furniture and rooms include curved drum cupboards, multifunction and varied-level central islands, walk-in pantries, laundry rooms, double sided screens, outdoor kitchens, pool bars, office furniture, boardroom tables, desks, study bookcases, reading chairs, media walls and library furniture. Grey avoids the use of kitchen units. He has worked all over the UK and USA. Around the world he has projects in locations including Ancona, Burgundy, Barbados, Cyprus, Jersey, Dublin, Melbourne, Mustique, Rome and Zurich. Grey's first book *The Art of Kitchen Design* (Cassell 1994) that included the first social history of the kitchen, has become an industry bible, selling 125,000 copies worldwide, a large proportion in the USA and in print continuously for fourteen years. In 1997 Grey published *The Hardworking House* (Cassell). Grey's *Kitchen Workbook* (1997) spearheaded a new series of home design books by Dorling Kindersley and has now sold over 150,000 in 11 languages. The *Complete Home Design Workbook* followed in 1998, co-authored with others from Dorling Kindersley's Home Design series. *Kitchen Culture* was published by Jacqui Small in 2004 with English, American, Russian and Asian editions.

Prof. Ioannis T. Ntintakis is Professor of Applications in the Department of Wood and Furniture Design & Technology which is part of the Technological & Educational Institute (TEI) of Thessaly, based in Karditsa, Greece. He holds a Master Degree of Science in Advanced Mechanical and Manufacturing Systems from Kingston University (UK), faculty of Engineering. His BSc is from the Technological Educational Institute of West Macedonia (GR), Industrial Design department, where he received honors from the Greek Institute of Scholarships. He has worked in many manufacturing plants in Greece in the fields of metal, plastic and wooden structures. He has excellent knowledge of CAD/CAM/CAE software such as Pro/Engineer, SolidWorks, 3D Studio Max Design, Inventor, Sema, AutoCad. Ntintakis is a participant in many research projects and European programs about new product design, industrial design, design and manufacturing processing.

Prof. Dr. Jegatheswaran Ratnasingam was involved in furniture manufacturing for almost 14 years before making a shift to academia. He is reputed to be one of the leading furniture researchers in Asia and his work is funded by many international organizations, especially in the fields of production economics and workers safety and health. He is an Honorary Professor of the Buckinghamshire New University, UK and has numerous awards to his credit. An author of more than 480 publications, which includes 23 books, 87 journal articles and 214 trade journal articles, he is a highly sought-after industrial consultant in the region. He is presently the Professor of Furniture Technology at the Faculty of Forestry, Universiti Putra Malaysia.

Alun Watkins has been National Secretary for PEFC UK Ltd since January 2010 and has worked in the timber industry for over 30 years (Studied Timber Technology at BCU). Prior to PEFC, Alun worked for both The Furniture Industry Research Association (FIRA) and the Timber Research and Development Association (TRADA), as an Environmental Consultant, where he provided advice and guidance to the industry on all aspects of environmental compliance including chain of custody and ISO 14001. In the former role Alun managed the industry specific initiative Club Green and was

instrumental in the development and promotion of the Furniture Industry Sustainability Programme (FISP). Alun also chaired the Furniture Industry Environment Committee for many years.

Dr. Andrew Pitman is a wood technologist who has been involved in examining the properties of wood and advising on its use in a wide range of applications. Andy has been involved in testing the properties of ‘new wood species’ including modified woods such as Accoya® and Thermowood® together with woods sourced from hybrid trees. The properties of these timbers are altered which improves performance when used for applications such as furniture. He is a member and former Chairman of the Wood Technology Society and sits on several UK and European standards committees.

Dr. Sarah Teasley is Reader in Design History and Theory at the Royal College of Art. Her research uses historical case studies from product and furniture design and manufacturing to create comparisons and insight for contemporary issues including new materials, emerging technologies and economic, environmental and social sustainability in local communities. Her books include *Global Design History* (Routledge, 2011) and *Designing Modern Japan* (Reaktion, 2014). She is Associate Editor of *Design and Culture* (Berg), and speaks and publishes widely in Europe, Asia and America.

Dr John Cross is a senior lecturer in the faculty of architecture, art and design at the Cass School, London Metropolitan University, where he lectures in conservation, design history and cultural studies. His academic research focuses on the trading of timber and furniture of Jamaica. Dr John Cross is a trustee and curator of the Frederick Parker Collection, as well as managing the collection he also researches and publishes articles on aspects of the collection. He is a Freeman of the Worshipful Company of Furniture Makers and a council member of the Furniture History Society.

Dr Catharine Rossi is a Senior Lecturer in Design History at Kingston University, and was previously a Context Lecturer in the Design School at Edinburgh College of Art. She completed her PhD, on the role of craft in post-war Italian design, as the holder of an AHRC Collaborative Doctoral Award co-supervised by the Royal College of Art and the V&A Museum, supervised by Glenn Adamson, Tanya Harrod and Martina Margetts. The research will be published as a book next year by MUP, and in May Sternberg Press published *The Italian Avant-Garde: 1968 - 1976*, co-edited with Alex Coles. She has worked on the exhibitions *Cold War Modern and Postmodernism: Style and Subversion, 1970 - 1990* at the V&A, to which she contributed a catalogue essay. Other publications include articles in journals including the *Journal of Design History*, *Design and Culture* and the *Journal of Modern Craft*, and magazines including *Crafts*, *Disegno* and *Domus*.

Gareth Neal has a unique approach to design, through material inventiveness, curiosity, and reinterpretation; he has helped to shape a new era within the context of design and craft. The studio’s varied spectrum of business ranges from individual pieces for the international collectors market; to bespoke commissions for private clients, to the design of production pieces for industry. His work engages with his own personnel research through Brighton University into traditional processes and digital manufacture, with designs that intuitively engage with the tacit qualities embedded within the materials, processes, and function. “My designs Endeavour to adhere to these principles and create lifelong relationships for a more sustainable future” Gareth’s work has been sold and exhibited internationally from the Victoria and Albert Museum, London to the Museum of Art & Design in New York whilst also designing for industry from, SCP, to site specific marketing exercises, from the shoe to the motor industry.

Editors

Prof Jake Kaner has studied and conserved twentieth century furniture collections for many years. In 2001 he established the twentieth Century Furniture Research Group in High Wycombe at Bucks New University and has convened eight conferences relating to twentieth century furniture studies. He has worked with many heritage organisations, supervised at the RCA, given research papers at the Vitra Design Museum, the Pinakotek der Moderne, Munich, the Design Museum, London and the Victoria & Albert Museum, London, amongst others. He was the PI for the HW Furniture Archive AHRC funded project and continues to research British twentieth century furniture manufacturer records. He is an editorial panel member for the Institute of Conservation, a panel member for the AHRC peer review college and is a REF panel member for UoA 34 Art and Design: History, Practice and Theory.

Prof Florin Ioras is currently the Head of the Institute for Conservation, Sustainability and Innovation at the Buckinghamshire New University, United Kingdom. Prof Ioras has established a reputation as a lead professional on certification since 2002. He specialises in ISO 9001, ISO 14001, Forest Certification and High Conservation Value Forest Identification and management in Europe, Africa and Asia. Prof Ioras has published numerous articles on certification, management, policy and economics of wood products. Within the last five years Prof Ioras has been researching and co-authoring articles on furniture made from wood products. Prof Ioras is an Honorary Professor at the Transilvania University, Romania.

About the Furniture Research Group

The Furniture Research Group has developed from furniture research that has been active for many years. In the RAE 1996 furniture was flagged as a special area of interest, whilst in 2001 we were awarded capability funding to further develop our research activities. In 2008 we were awarded funding for outputs of national, international and world class levels. The group is led by Jake Kaner and Florin Ioras.

Design and Manufacturing is led by Dr Lynn Jones. This area has engaged with the design of furniture working with architects, interior designers, manufacturers, bespoke designer makers and retailers. Partners include Vitra, Ercol, Marks & Spencer, FIRA and the Furniture Makers Company, amongst many others. Funding has been achieved through commercial R&D and competition wins.

Heritage & Conservation is led by Prof Jake Kaner. This area has interests in archives, private and public collections, historic houses and conservation organisations. Partners include ICON, National Trust, English Heritage, Frederick Parker Collection and Wycombe Museum as well as many others. This area has a track record of funding for the preservation and digitisation of furniture archives.

Sustainability is led by Prof Florin Ioras. The group is currently involved in a number of national and European programmes, investigating the social, economic and environmental aspects of a varied range of consumer products and industrial processes, with an emphasis on material sustainability, environmental infrastructure and forecasts trends in economic activities of international furniture.

These Research Themes are often blended resulting in joint research studies, projects and publications.

The Furniture Research Group is affiliated to the National School of Furniture (NSF) is a partnership between the furniture industry and the two foremost institutions of furniture design and craft in the UK. Buckinghamshire New University in High Wycombe and Rycotewood Furniture Centre at Oxford & Cherwell Valley College in Oxford share an international reputation for providing excellent education in the field of furniture design, historical context and at the same time reflect the latest thinking and practice in the industry.