The Craft of Place

An Introductory Course in the Evolving Culture of Building

How to Use This Module

This is the second e-learning module for a series of courses in urbanism, architecture and building crafts known as the "European School of Urbanism and Architecture." The programme was designed for new students to the study of urbanism and building, and for professionals and practitioners who wish to increase their level of understanding of important new topics in best practice. More information in this programme is available at www.esua.org.

If this is your first time learning about this subject, and you find this module interesting, you will have the option to take more modules on line in the future. But this on-line element is really only a part of the full course of study. This module is designed to be integrated with a hands-on learning programme that will allow you to learn in the most effective way known: "learning by doing". You will have the opportunity to participate in field studies of actual projects, working alongside leading practitioners, and using the latest tools and techniques.

This module is specifically designed as an introductory course for those coming to study building crafts in the programme, but may be taken by others as well.

The full project-based curriculum is now in the pilot phase, and is planned to be launched as a full-time programme after several years of development. You can learn more at www.esua.org.

Each e-learning module begins with a short reading, and then gives you links to additional reading. The final examination includes a short multiple-choice section, and a written essay portion that you can enter through a form, or email to the course instructor as a text document.

Introduction

What is the role of building craft in the modern world?

Some believe that craft in the traditional sense is obsolete, rendered irrelevant in an age of mass production methods. Others believe that craft is now to be found in the modern production methods themselves, and the way they are fitted together to produce a well-crafted design. Still others believe that craft is important in the conservation of heritage buildings and places, and in finding new economic uses for them. Others believe that craft must exist as a kind of supplemental activity for enthusiasts – not a very high

percentage of what is built, but something that gives pleasure and meaning to a minority of individuals with a particular interest.

Yet another perspective, which will be the focus of this course, is that all of these perspectives are partly right – but that there is also, in some sense, an emerging new place for craft, in the emerging new practices and methods of sustainable building. Indeed, this new for of craft is emerging in some surprising places within the culture of technology. And it offers us some very useful opportunities, for our careers, and for our roles as useful parts of a new culture of sustainable building. We will explore this idea in greater depth below.

The crafted character of the treasured places of history

One of the most fascinating and moving things one can do is to study – really, carefully study -- the most loved buildings and places made by different cultures around the world, at different times over the last several thousand years. Despite enormous variety of resources, technology and aspiration, these structures almost always had one thing in common: a remarkably high level of craftsmanship.

That is, they were somehow made to be uniquely beautiful, in a way in which all the parts fit together with one another, and into a complex whole, from the larger scales, down to very fine scales.

These finely crafted structures were very often created with huge amounts of human labour. Moreover, that labour was frequently painstaking, intricate, and highly skilled. It was not just brute force, but the result of a careful stepwise process, of carefully fitting, shaping, and articulating parts in relation to one another. The structures and their artistic ornaments were often seamlessly integrated into a beautiful, highly coherent, emotionally powerful place.

We are gaining new respect for the sophistication of such places. Where we once dismissed them as "primitive" and beneath our "modern" standards of achievement, we now know that they often had many remarkable qualities that we can no longer achieve, or at any rate achieve easily. Increasingly, it appears they have much to teach us, even today.

The modern obsolescence of craft?

Nowadays we usually think of this kind of craftsmanship as an extravagant extra in the building process – too expensive, or too slow, or both. At best it is only for the rich; if we are concerned with the quality and dignity of ordinary people, we must be more concerned with the craftsmanship inherent in mass-production technology.

Or we talk about craftsmanship in the limited sense of a careful plasterer or a skilled painter. But in almost all cases, no matter how skilled – and often it is very highly skilled - the work done is standardised and inter-changeable. It is not craftsmanship in the sense above, of a customised, fine-scaled, almost seamless fitting of parts.

And indeed, there is an important historical reason for this. Since about 1800, modern production technology has relied on a key innovation, that of the standardised part. In one of history's transformative moments, it was found that parts could be created from routine processes of stamping, cutting, drilling or casting, in a series of standardised steps that anyone could perform. In turn, anyone could assemble these parts quickly and inexpensively, with a minimum of training. All that was needed was a set of drawings that specified the standard assembly of the parts. This standardisation let loose a flood of productivity, and – it is not too much to say - created the very basis for modern technology.

It also very nearly erased all of what we knew up to that time as craftsmanship.

But today, something very interesting is happening to craft, particularly where it applies to the making of buildings and settlements. It is re-appearing on the scene, in interesting new guises. We have design-build construction systems, and artisan-builders who design and make their own constructions. We have a new concern for the maintenance and re-use of historic buildings, which requires a new generation of craftspeople skilled in the old ways. We have architects and planners who seek to understand the ways that crafts processes can be part of their work, and who exert a fine degree of craft over their own designs, models and drawings.

Most radically, we have a new sense of craft in the planning process itself – less a process of detailing everything out at once, in a mechanical fashion, and more a process of gradually "crafting" a design, using step-wise, sometimes complex, collaborative and participatory methods. It does seem that in some respects, we are beginning to come full circle.

There are important reasons why the imperative of sustainability is bringing crafts back into the picture, which we will discuss in more detail later in this course.

In any case, it is undoubtedly important for all those involved in the building arts to understand the role of craft in their work. They may themselves be craftsmen and women, actively shaping parts for a customised role. They may be working closely with craftspeople, particularly on important heritage and regeneration projects, and have a need to be able to collaborate effectively. Or they may simply want to understand how their industry is changing, and how the processes of craft are creating important new dimensions, and new career opportunities.

What do we mean by "Craft?"

People commonly think of craft as the making of things by hand, particularly if that's one's trade or profession. As a definition, that's not a bad start. But it turns out that many of the things made in factories are made by hand, by people who are engaged in a trade or profession there. But these things are not "crafted" in the stepwise custom-fitting sense we have been discussing, but more often assembled from standardised parts, with just minor trimming and adjustment. That's not to diminish the skill that is often required to operate the machines and to work with the products as they are assembled.

But by contrast, there is a suggestion in the word "craft" that implies something being created as part of a longer, elaborated process – being refined, shaped and detailed. The parts are not just assembled or "composed" as independent elements, but in some sense, they are articulated as parts of the whole, and parts of the space in which the whole resides.

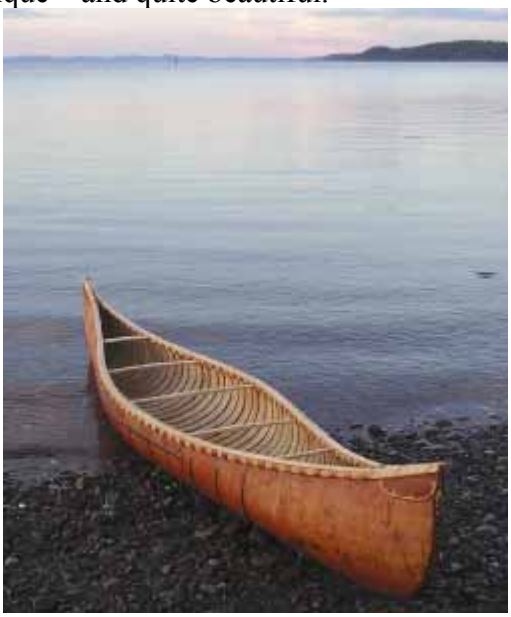
The crafting of a traditional Native American birchbark canoe is an instructive though not unusual example. When one sees its rough early steps, it's hard to visualise a canoe coming out of it! In fact the thing looks like something of a mess – little more than an unpromising pile of wood, rocks and stakes.

Photos by Mikedup, Flickr.com

But gradually, the details are articulated and strengthened with new parts added, and the structure seems almost to slowly come alive.

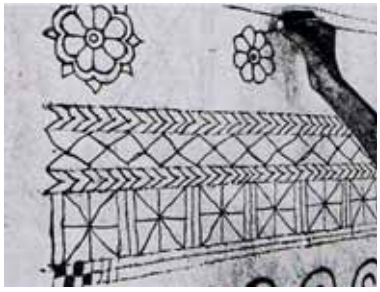
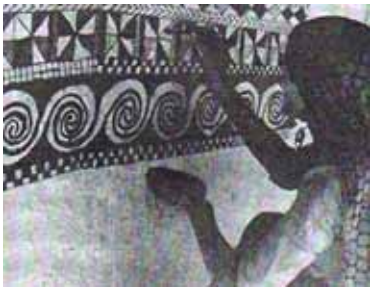
Step by step, the structure is stiffened, articulated, detailed. More details are added, and the coherence of the structure increases with each careful step.

By the time the structure is complete, it has undergone an astonishing transformation: it is shapely, organised, unique – and quite beautiful.



And notice that it fits quite beautifully in its larger context as well. It is not merely an object set down in a neutral landscape, but somehow, has a sense of having "grown" in its environment. This is because just as the individual parts are crafted with one another, the canoe itself is crafted to fit with its environment -- with the water, the sun, the wind, the other forces that will act on it, and that it must manage to be an effective and useful thing. And this craftsmanship is quite a beautiful quality.

We can see other similar step-wise processes in other crafts traditions. Carpet weavers, wall muralists, many others can be seen to shape their design as they create the work, articulating the space that is there before them, evolving each step in response to all that has gone before.

As in the example above, we can see craftspeople articulating regions of the work, fitting the new elements together with the ones made earlier, in a step-wise process of elaboration. Sometimes the actions are guided by really rather simple requirements:

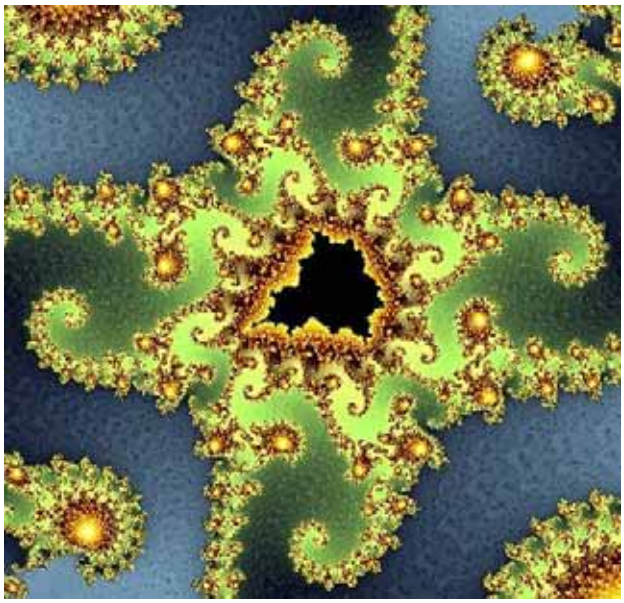
"place a sideways V next to the last V, and don't crowd it too much," or "fill in every other triangle with black ink." At each step, the action doesn't look that impressive, but over time, a complex, coherent and beautiful pattern builds up. At the end the result can be breathtaking.

Surprising parallels with modern complexity science

It turns out that this kind of stepwise, "iterative" process -- following simple rules for subdividing, articulating and differentiating -- happens all the time in nature. We now know that it's the way that organisms form through the stepwise process of morphogenesis. It's even the way that water droplets splatter and stretch out into elaborate new forms. Far form being a dusty old lesson with relevance only for the past, this insight is at the forefront of modern complexity science.

We can produce similar patterns with very simple but powerful computer algorithms, which at their heart have exactly the same kinds of simple step-wise rules: "check what you've just done, take another little bit and articulate it, using all that you've just done and applying a simple rule to tell you what to do next," etc. In the case of the computer the pattern looks rather "mathematical" – a lot of symmetry and repetitive pattern. But it

also has the same characteristic of stepwise articulation of space. The articulation is quite complex and detailed -- and, for most people, it is quite beautiful.



The above illustration shows a so-called "fractal" pattern – so called because you can "fracture" a piece of it, and it will still look similar to the whole, and to other fractured pieces at other scales. Again, the pattern has a strong relation to the algorithms that create it. Many authors have noted the strong fractal quality of much traditional work around the world.

There are other, related geometric properties that almost all traditional building crafts share - and even with all their variety, they seem to do so across cultures and periods of history. We will not go into the details of this subject here, as it is a topic of major study in its own right. What we will do here is to note that these geometric properties have a strong relation to the patterns in which they are created – just as the pattern above has a relation to the way the computer uses an algorithm to create it.

So let us use this definition for “craft:”

Craft is the step-wise articulation of the parts of space, in an evolving whole.

We are shaping the whole, but also shaping its parts. We are working back and forth from the whole to its parts, taking steps to articulate them within the field of space where we are working.

Moreover, we are creating a new thing, a new “design” – but it is not “design” in the sense of a pre-planned thing. It is something that emerges and evolves continuously, as we work on it.

This can be contrasted to the way many things are made in modern production processes, from carefully detailed and precise blueprints created ahead of time. But we now know that natural processes don’t work this way. There is not a little blueprint drawing of your fingernail within your DNA. Rather, the DNA is more like a “recipe” that contains steps for growing a fingernail. And the fingernail will be slightly different each time, and different over time. It will also be different in you than it is in any other person.

Consider the following structures, and whether it would be desirable, or even possible, to create them using fully detailed blueprints, created in advance:

These happen to be very ordinary flowers growing in an ordinary garden. But as you can see, they are quite beautiful. This beauty is quite literally "garden variety" – it emerges from the process of growth of these flowers, their patterns, their symmetrical order and their casual asymmetries too.

You can also see that it would be absurd to try to reproduce these flowers by creating drawings, and planning them out ahead of time. You might be able to imitate them through such a process. But you could never create such structures in the first place. That is because you would lack the process of growth, the step-wise way that the stems grow up and branch out, then the leaves unfurl, then the petals bud and unfold, and so on.

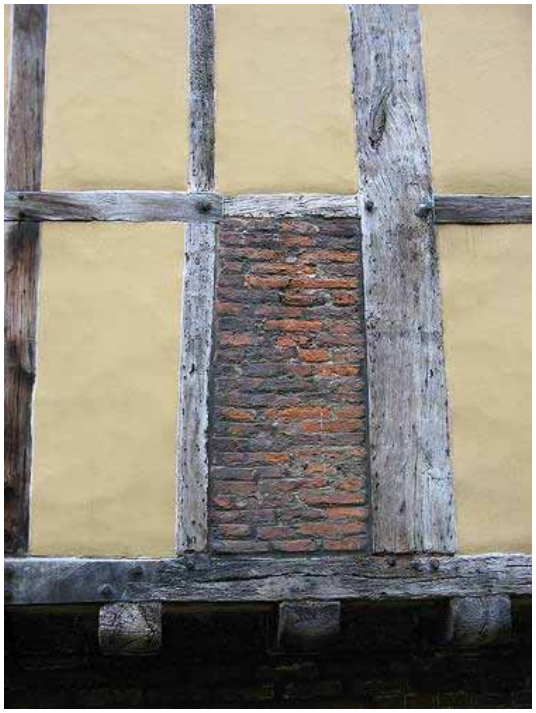
In a real sense, these structures have "crafted" themselves, using their DNA as the stepwise code for growing proteins, shaping them, unfolding them, and so on – creating these lovely emergent structures.

Urbanism as the Craft of "Many Hands"

We have seen the workings of "emergence" in human craft too. At the urban scale, often such emergence occurs as the result of many people working together, and working over a long period of time.

Consider the construction of the city of York, in the north of England. It was built by artisans and craftspeople – crafted, in this sense, in stepwise acts of building that

followed the same kinds of local rules we see in other crafts processes. Everything was fitted, articulated, shaped to harmonize with everything else, and to work in a way that strengthened the new part, the old part, and the whole of which they are parts.



One of York's beautiful buildings, and a passageway known as a "snickleway."
Courtesy Peter Whelerton (Darwin70, wwwflickr.com)

We can see that parts of buildings were made this way. But what we can appreciate, especially in fine old examples like York, is that the entire city was crafted in this way – the lovely wending streets, quirky passageways, delightful little corners and gathering spots. And the pattern of the city skyline is a piece of craftwork in its own way. It was not planned from the bold geometries of an abstract plan, conceived in advance. Rather, it emerged from the step-wise unfolding processes of the people working together, shaping their work to create something functional, durable, beautiful….


Courtesy Ian Britton, www.freefoto.com

But what about the cathedral, the magnificent York Minster (above right)? Wasn't it "designed" in the more conventional sense? No, in fact it was built as a series of very elaborate design-build projects employing hundreds of craftsmen, stretching out over 200 years, and culminating in the consecration in 1472. It was, in a sense, a hugely complex craft project.

It is a surprise to many people to learn how little was "designed" in advance in such cathedrals, and how few drawings they actually had. Often there was one great floorplan, and one bay elevation, drawn in ink on plaster. That was about it. And then there were hundreds or thousands of shop drawings and sketches, working models, test pieces, changes made to refine the result… an intensely crafts-based process through and through.

This, then, was the way the world was built, up to the last several hundred years. We may say that this was a tortuous process, and that life was too difficult for workers. But we must also admit that the result of this kind of process was a great treasury of human buildings and cities around the world.

An interesting question to ponder is, can we employ such processes again, in a way that is more egalitarian, and more socially consistent with our modern values? Are they doomed to be forever in the past? Or are there new reasons to consider their ecological merit, and their applicability to integrate with newer production systems?

The Coming of the Industrial Revolution

One of the great breakthroughs of modern science of the last four centuries has been to identify standard sets of elements that make up great varieties of phenomena in nature.

The atomic structure of matter is a classic example. We now understand that all molecules in the universe are made from a group of only about 100 atoms. In turn, all of these atoms are made from a combination of only three subatomic particles: protons, neutrons and electrons.

This is an enormously powerful insight, and it has yielded powerful capabilities: the chemical sciences, the atomic sciences, nuclear power and biochemical medicine.

But it doesn't follow from this insight that one can simply "put together" protons, neutrons and electrons, and create a person, or a house. There are vast steps of transformation in between, and – especially in the case of making a living creature – vast sequences of highly ordered growth and transformation over time. There are not mere steps of assembly of components, but steps that the biologists call "differentiation." There are ways that patterns and forms get created, and changed, slowly, in step-wise sequence.

Nonetheless, for scientists, the insight that there are standard parts within many of the wholes of nature was a powerful idea. It wasn't long before others were deeply inspired by this idea as well, and sought to exploit it in our technology. And as a powerful but limited idea, it worked very well indeed.

From Guns to Gears

Shortly before the beginning of the Ninetheenth Century, French gunsmith Honore le Blanc developed a very clever system for the manufacturing of rifles using standardised parts. The fact that all the parts were made identically meant that one could make many parts quickly, and then assemble them into functional weapons, also quickly. They may not have been finely crafted, but they certainly did the job.

This innovation happened to get the attention of Thomas Jefferson, then the American envoy to France, who relayed the concept to President George Washington. Recognising that this might give the young country a much-needed capability of low-cost manufacture for its own weaponry, Washington commissioned Eli Whitney, the brilliant inventor, to set up just such a system in the US. It worked amazingly well.

About the same time, the Englishman Henry Maudslay worked with the French emigrant engineer Marc Brunel to develop the world's first assembly line, where workers would cut, drill and assemble pulley blocks for the Royal Navy. This proved to be a highly efficient and low-cost way of producing what had previously been a very expensive hand-made item. This routine production system meant that many blocks could be made identically, very quickly and very cheaply, achieving "economies of scale." The more you make, the cheaper each one is.

Standardised parts. Assembly lines. Economies of scale. These proved to be enormously powerful innovations for the decades to follow.

Technology and its unintended consequences

No doubt you know the rest of the story. These innovations were applied to automobiles, to buildings, and to whole cities – by people like Henry Ford, Frederick Winslow Taylor, Frank Gilbreth, Robert Moses and countless others. They created the enormously productive "Age of the Machine." They paved the way for rapid advances in sanitation, medicine, and prosperity for many ordinary people, to a degree unprecedented in history. Today vast numbers of us fly, dine, heal, in a manner undreamt of by the richest kings of history.

But these advances have also left us with some unintended side-effects: pollution, resource depletion, ecological damage, social disruption, and fearsome challenges like climate change.

For some people, these changes have also left our world degraded, uglier, impoverished. They see a connection between social and ecological unsustainability, and the disordered aesthetic character of our cities.

This is not such an implausible idea. After all, evolutionary biologists tell us that our aesthetic sense is highly evolved to detect things that are likely to make us unwell – from the smell of rotten meat to the feeling of a cold damp room.

Such protests are not new. They go back to the beginning of the Industrial Revolution – to the chaotic growth of the industrial cities, and the intolerable conditions of many workers and their families. Burgeoning cities like Paris, London and Manchester were overcrowded, polluted, suffered from poor sanitation, and lacked access to essentials like fresh air, clean water, and green space for recreation.

Protests from the Arts and Crafts Movement – From Ruskin to Morris

The English writer John Ruskin (1819-1900) was one of the most influential critics of the dehumanising consequences of the Industrial Revolution. He wrote eloquently of the corrosive effects of mechanisation and standardisation, in both the quality of what was produced, and the quality of life of the workers who produced it. He decried the treatment of workers under industrialism, and what he saw as the unethical laissez-faire economics that was fuelling its growth. He argued for a return to the craft-based practices of traditions like those of Gothic architecture. Ruskin was an enormously influential figure in the Nineteenth Century, and his ideas helped to spur the labour movement, trigger a revival of Gothic architecture, and inspire many later artists, writers and thinkers, including Tolstoy and Gandhi.

Ruskin has been described as a Romantic, with impractical notions of how people can live well. But he himself was critical of Romanticism, and he argued for a way of life

that provided a decent if very modest standard of living for all, through the added value of labour given by crafts work, in the production of buildings, implements, foodstuffs and the other needs of daily life.

Ruskin was an inspiration to many later reformers who were appalled at the ongoing effects of standardised industrial development. The most important movement to grow out of these concerns was the Arts and Crafts movement, launched in England, and spreading to the rest of Europe, the US, Canada, Australia and other countries.

Perhaps the most important early leader of the Arts and Crafts movement was the English architect William Morris. He and others were not against machines per se, but they opposed the division of labour of industrial methods. They believed that each worker should take responsibility for the whole of what he or she was making, and act as a kind of "master craftsman," guiding the design through its production.

The Arts and Crafts movement was extremely influential in the late 19th and early 20th Centuries. The American architect Gustav Stickley, publisher of the magazine *The Craftsman*, published hundreds of house plans in the so-called "Bungalow" style. Today many tens of thousands of these homes are spread across the US. Stickley also had a profound influence on the architect Frank Lloyd Wright, who later became a major influence in architecture around the world. Stickley promoted the idea of organic architecture – the notion that a building and its elements should form one seamless, interrelated, crafted whole.

The English approach to Arts and Crafts was contrasted with the approach on the continent, where, for example, the German Arts and Crafts proponent Hermann Muthesius was a champion of mass production, and affordable democratic art. In France, "manufactories" separated the steps of production, and individuals or groups would produce just one item. This followed from the successful innovations of gunsmith Honore le Blanc, whose work inspired the American Thomas Jefferson to work with the inventor Eli Whitney to set up similar successful systems in the US.

This sense of the usefulness of mass production as a potential humanizing force would become a dominant theme within the modernist movement in architecture. For pioneers like the German Walter Gropius, the craft of architecture was to be seen in the fine design, the availability and fitness for use by many ordinary people. Craft was to be a matter of executing a well-made machine product, which served to elevate the standards of utility, comfort and beauty for a far broader cross-section of ordinary citizens.

The Arts and Crafts - Abandoning Cities?

One criticism of the Arts and Crafts movement is that it was, in a sense, anti-city. Certainly it was anti-industrial cities, when those cities offered only overcrowding, poor sanitation, long hours of dehumanising labour, and lack of access to fresh air and greenery. But the movement did trigger a wave of new "utopian" villages and, later

"garden cities," which critics argued set the stage for later suburban sprawl. They seemed to suggest – at least to some – that the answer to the problems of the cities was to abandon them. Moreover, they also seemed to suggest that separation and segregation in general was the answer to any of the problems of urban settlement. This can be seen most clearly in the Garden Cities diagram of Ebenezer Howard, where work is to be segregated from home, and even "inebriates" and "waifs" are to be set apart, in their own encampments.

But this was a later trend. It must be noted that the Arts and Crafts practitioners themselves decried specialisation and division of labour, and it would follow that the specialisation and the divisions of the city were, for them, equally undesirable. Yet it is often the case in such historical developments, that the reform efforts meant to correct one deficiency, result in another. This is certainly true for the effects of industrialisation itself. Yet this example shows that it is also true, quite ironically, even for the effects of a counter-reaction to industrialisation!

Craft makes a surprising reappearance

The work of the Arts and Crafts movement has survived and continued to be popular, in the form of bungalows, textiles, lamps and furniture. But the ideals of crafts-based production methods, emphasizing step-wise articulation and differentiation by skilled craftsmen, took a back seat to the dominant production techniques of standardisation, replication and mass-production.

But something very interesting is happening today. In addition to standardisation and replication, customisation and differentiation are finding a new place. Craft is re-entering the scene, in a significant way.

First, let's consider the notion of standardisation. Henry Ford famously said that in buying one of his cars, "you can have any colour, as long as it's black!" Today, you can go into the dealership, and not only pick out your own colour – you can just about order your own custom car, with a dizzying array of custom options. Computers will process your order and make sure that the features all go together into the car you want.

This is one of many examples. You can create your own book and sell it on Amazon, in custom one-off orders. The production system has geared itself to be almost as economical as the mass-printing processes of earlier decades. You can order coffee cups with your own design, or

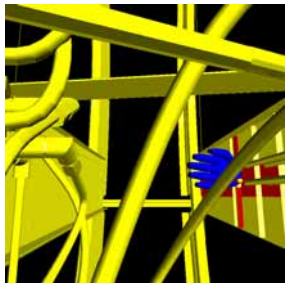
As for differentiation – the ability of a product to be adapted to its local context and opportunities – that's happening in the design-build methods that are gaining popularity. Fast-track production also proceeds in many cases with a much simpler set of drawings, and the detailing of the drawings comes along the way. So the process is more like a stepwise craft process.

What about standardisation? Many products have taken on the ability to have unique characteristics. Cabbage Patch dolls, for example, are made according to a computer algorithm that

As for craft itself, this is happening much more often than we realise. First, it is often the case that the designers of a new product go through a very elaborate, crafts-based process of developing the prototype.

Second, we know that many people practice a craft-like process in their professions. Dentists often operate as fine crafters, shaping fillings and working with other crafters to create beautiful new porcelain teeth. And doctors have known for many years that a patient cannot be treated in anything like a standardised process, but must be treated in a "procedure" that relies upon a stepwise cycle of action, evaluation and adjustment – very much like a crafts process. There must be a diagnosis, there must be a treatment,, there must be support of the existing natural processes that help to heal the patient – and all of this must proceed in a stepwise cycle.

In the high tech world, things are if anything more surprising. The Boeing 777, one of the most advanced aircraft in the world, is not assembled according to a rigid kit of parts or formulas – far form it. It is carefully built up in prototypes, tested, refined, and tested again, until its form takes on a lovely, aerodynamic, "crafted" quality.



And as for its complex internal systems, technicians have found that the best way to fit everything together properly is for a skilled designer to wear a set of "virtual reality" goggles and a glove, and to "craft" a design using the computer!

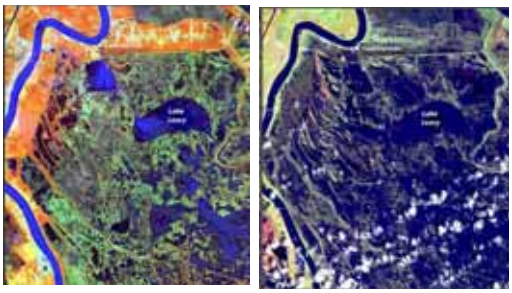
Many of these recent innovations are fairly limited, and don't get us back to a full crafts-based approach. But they point the way to the trend that is emerging in many fields.

The Future of Craft

As we deal increasingly with ecological challenges in the future, the role of craft is likely to loom larger. To see why, consider the following comparison.

In the wetlands around New Orleans, engineers determined that they could make more "efficient" shipping lanes, drainage canals and other structures, by carving out a series of razor-straight pathways through the "messy" delta wetlands. They did not adapt to the subtle patterns of the delta: they simply imposed lines across the landscape with abstract precision.

Unfortunately, this proved to be an ecological disaster. The complex mix of fresh water and saline water was disrupted. The complex flow of water feeding the plants and trees was disrupted, killing many. When Hurricane Katrina hit, it was not slowed by a wetland buffer. Its storm surge was not diffused by a healthy wetland network.



Wetlands before Katrina, and 24 hours later

In effect, engineers had built a kind of hurricane highway, straight to one of the world's great cities – and very nearly destroyed it. It certainly destroyed vast stretches of the same wetland structure, which had grown and adapted over centuries.

Contrast this scenario with the construction of rice paddies on the slopes of many Asian countries. These paddies are very complex, and carefully fitted to the landscape. They also happen to be very beautiful.

It can be seen readily that it would be folly to try to build such structures as razor-straight impositions on the landscape.

Indeed, this has been tried, and the result as been, we can say frankly, a mess.

We might say that the rice paddies require mind-numbing toil, and we should seek a better life for such farmers. But the important thing is not how much work is involved – we could just as easily build razor-straight canals with backbreaking labour too – but what kind of process was used to build them. Whether it was an adaptive process of articulation, in this step-wise way. As we have seen, even modern technology can be used to employ a process that is more like the step-wise process of craft. And increasingly, this is happening.

Increasingly, it now appears, this must happen, for the ecological reasons that these two examples suggest. Ecologies are also complex, adaptive structures that are built up and articulated in stepwise fashion. If we want to interact with them successfully, we have to take the methods of the doctor following a procedure. We have to pay attention to the patient's health, and follow a careful step-wise process, diagnosing, performing treatment, supporting the existing natural processes.

We see such places in the landscape, part of the heritage of the world in many places, and we note that they are very beautiful. We also note that they have many desirable ecological properties that we are very much in need of today. Not least, they have proved their ability to endure and to sustain themselves. Does their beauty have a relation to their sustainability? This is a very interesting and perhaps important question.
What we can say with confidence, is that such treasures are very valuable. They embody carbon and energy, and re-using them gives us a carbon and resource advantage. They also seem to be well-adapted to being re-used, and re-adapted to other uses. They are

readily repairable, typically using locally produced materials and local labour. This provides a "local multiplier effect" for the local economy. And they seem to encourage people to like them, to use them and care for them, and keep them around.

So in the new "age of sustainability," we must take care of the beautiful old places. Moreover, we must learn from them, and from the crafts-based processes that made them so successfully.

That is not to say we can't also employ new methods, new computer-assisted processes, the very latest in evidence-based science. We do this in medicine, and increasingly, in ecology. So we can do it in making our cities and towns and landscapes too.

And as we have seen, far from being an un-modern notion, this idea of craft taught to us by the old places, may well prove to be at the forefront of a survivable, sustainable modernity.

Examination Questions

Under construction – please check back later!