

3D printing : the craft of the future?

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Published version

ATKINSON, Paul (2014). 3D printing : the craft of the future? In: Nuevos Horizontes Del Diseño (New Horizons in Design), Unidad de Posgrados, Mexico City, 8-9 October 2014. (Unpublished)

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3D Printing: The craft of the future?

Professor Paul Atkinson

**Sheffield
Hallam
University**

Art and Design
Research
Centre



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Research centres overview

Art and Design Research Centre (ADRC)

Communication and Computing Research Centre (CCRC)

Art and Design Research Centre (ADRC)



All

People

Projects

Headed by Paul Chamberlain (Professor of Design) the ADRC leads and manages research in the disciplines of Fine Art, Design and Media Production.

Research activity takes place in four broad domains: creative practices in healthcare; advanced making processes and theory; social, cultural and philosophical narratives; and applied research in digital media. However, our interdisciplinary and operational approach recognises and enables these boundaries to be permeable as evidenced by diverse research and creative practice undertaken by our staff. Researchers in ADRC are involved in the development of new methods and techniques for research and their application in the generation of products, designs and works of art that change our understanding or create new knowledge that adds to social, cultural and economic well-being.

Our research strategy focuses on the origination and generation of ideas and knowledge through practice, reflection and dialogue and its dissemination to other academics, practitioners, end users, commerce and industries. The centre actively supports and develops collaborative clusters to undertake large scale research programmes as well as the continuing support of the lone scholar.

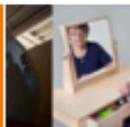
Closely aligned to the ADRC is Design Futures, a discrete unit within CSRI delivering packaging and product design, research and development to industry. Design Futures has a proven track record as innovators being cited as inventors or contributors to a portfolio of intellectual property, it has accrued a number of design awards.

For further information please contact:

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e.mail : k.glocke@shu.ac.uk

Head of Centre : [Prof Paul Chamberlain](#)
tel : +44 (0)114 225 6771
e.mail : p.m.chamberlain@shu.ac.uk

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Results found



Lab 4 Living
ADRC



Wearable medical monitoring devices: Design to inform clinical appraisal
Tomorrow Options

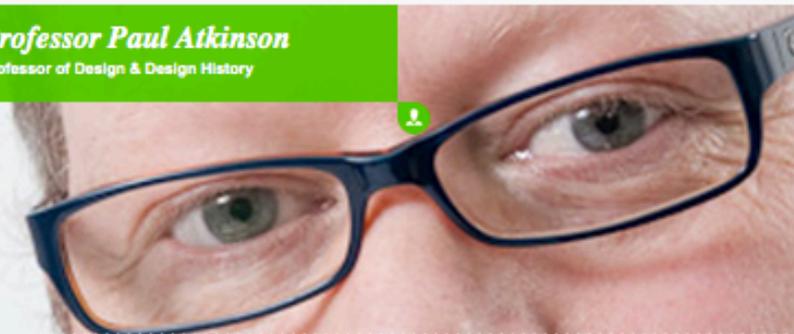


Professor Paul Atkinson
Professor of Design & Design History



Innovation Through Connectivity

Find people and projects

**Professor Paul Atkinson**
Professor of Design & Design Historyp.atkinson@shu.ac.uk

0114 225 6208

Background

[TOP](#)

I am an industrial designer, design historian and design educator. I trained initially as a mechanical and production engineer before studying Industrial Design at The University of Teesside. I then worked as an in-house designer, a design manager and as a director of a design consultancy. When I became a design educator I studied the History of Design at Middlesex University. My work on the social history of computing technology eventually led to a PhD from the University of Huddersfield. I have spoken at a number of international conferences around the world about Design History, Design Theory and Design Practice, have written books and had articles published in a number of international design journals.

My academic research covers a wide variety of subjects, all concerned in one way or another with the relationship between society and technology. The relationship between people and technological artefacts is explored through my writings on the design history of computers. The impact of the society-technology relationship on the design profession is explored through my writings on professional vs amateur design, including work on the history of DIY and Open Design. The future impact of emerging technologies on the nature of design is explored through my practice-based research into Post Industrial Manufacturing.

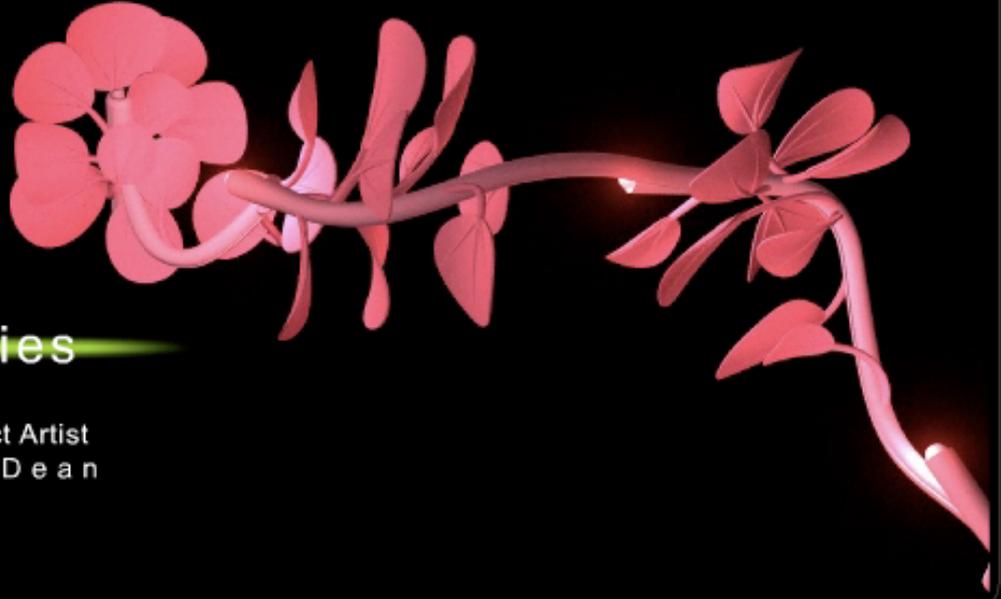
PhD Supervision

Paul supervises PhD students in design:

[Matthew Dexter](#), [Julia Keyte](#)[Claire Craig](#)

Projects

[TOP](#)



FutureFactories

Digital Creativity by Product Artist
Lionel Theodore Dean

FutureFactories.com

Concept

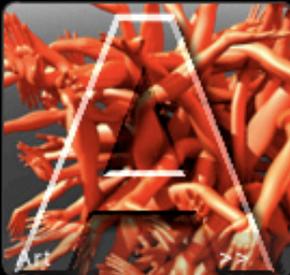
News

Publications

Designer

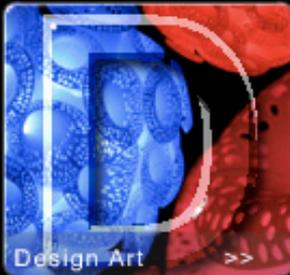
Press

Contact



Art

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Design Art

>>



Retail Products

>>



Shuffle

>>

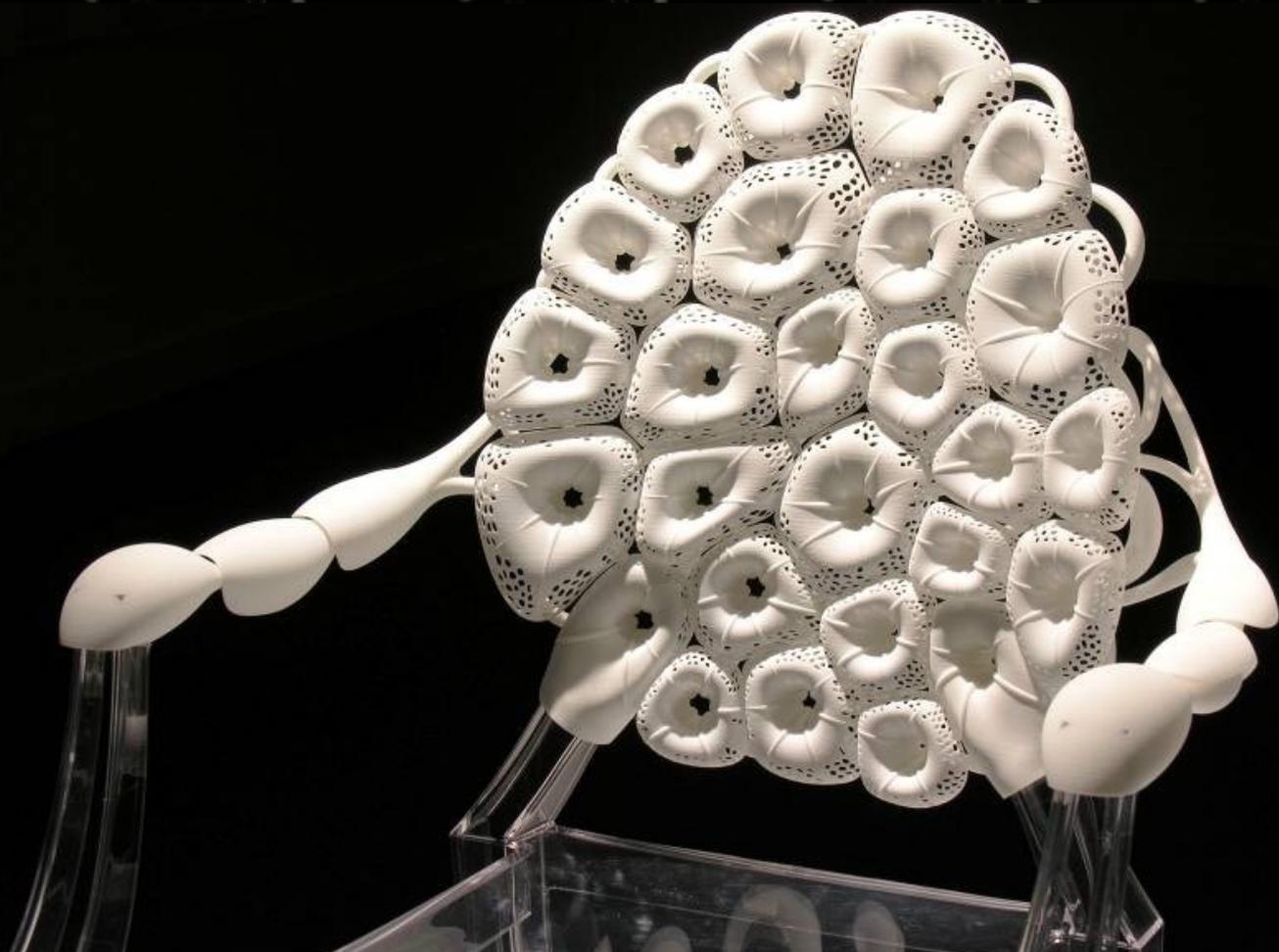


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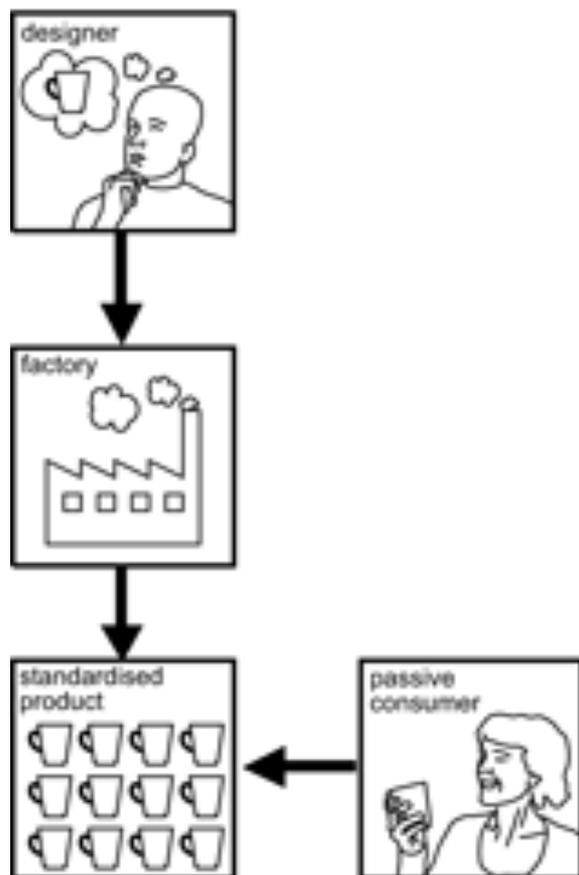


Automake

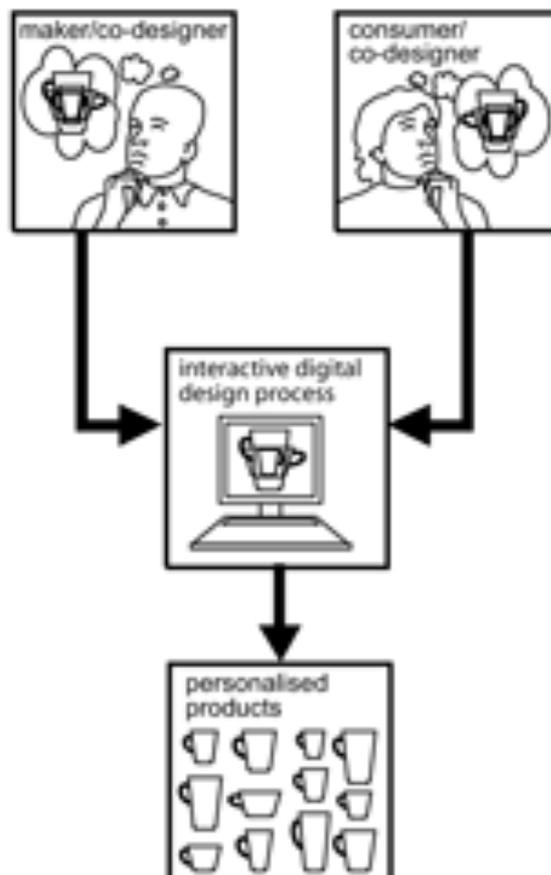
enter

**interactive generative
design project**

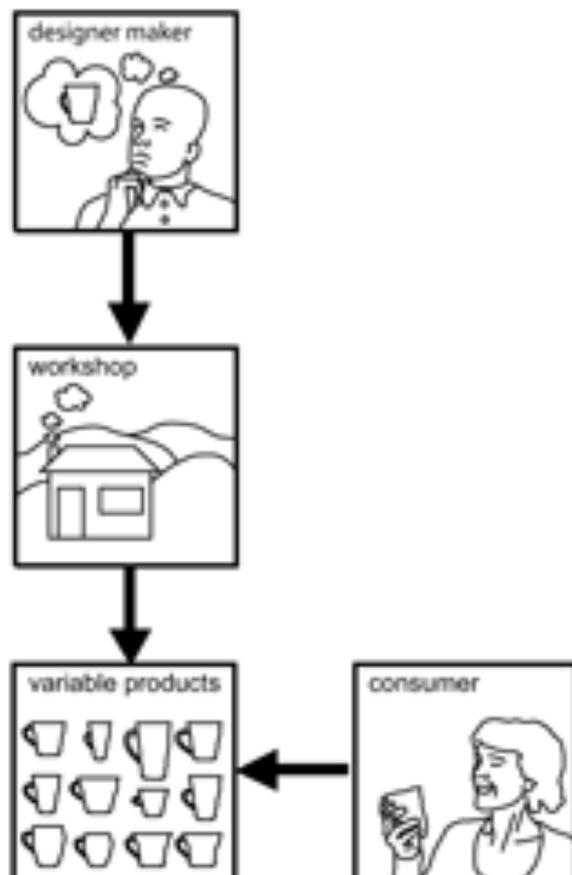
MASS PRODUCTION



AUTOMAKE



CRAFT PRODUCTION



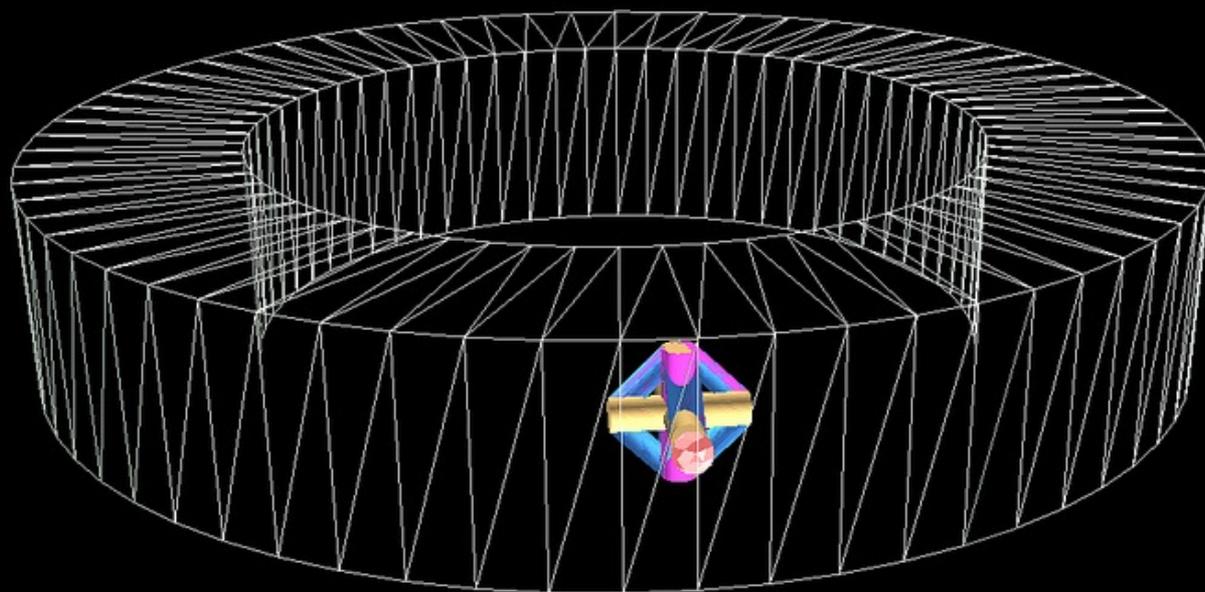
click 1. to deselect
unit, 2. to reselect
unit



START
BUILD

HIDE
MESH

STOP
& SAVE



TWIST

+Y -Y

SCALE

+X -X

+Y -Y

+Z -Z

BEND

+X -X

+Y -Y

+Z -Z

STRETCH

+X -X

+Y -Y

+Z -Z

RESET
MESH

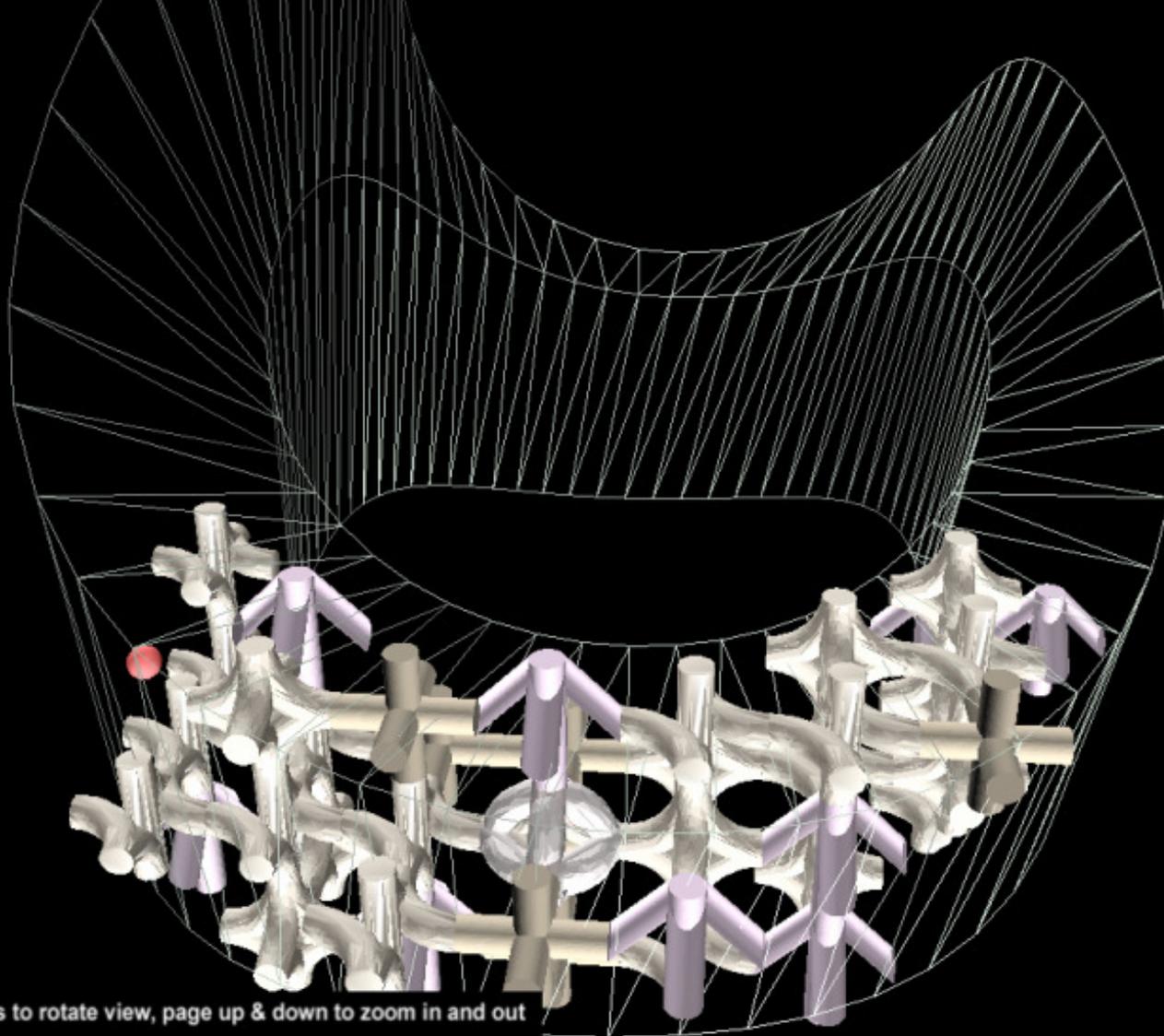
click to deselect unit,
click again to reselect.



START
BUILD

HIDE
MESH

STOP
& SAVE



use arrows keys to rotate view, page up & down to zoom in and out



TWIST

+Y -Y

SCALE

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+Y -Y

+Z -Z

BEND

+X -X

+Y -Y

+Z -Z

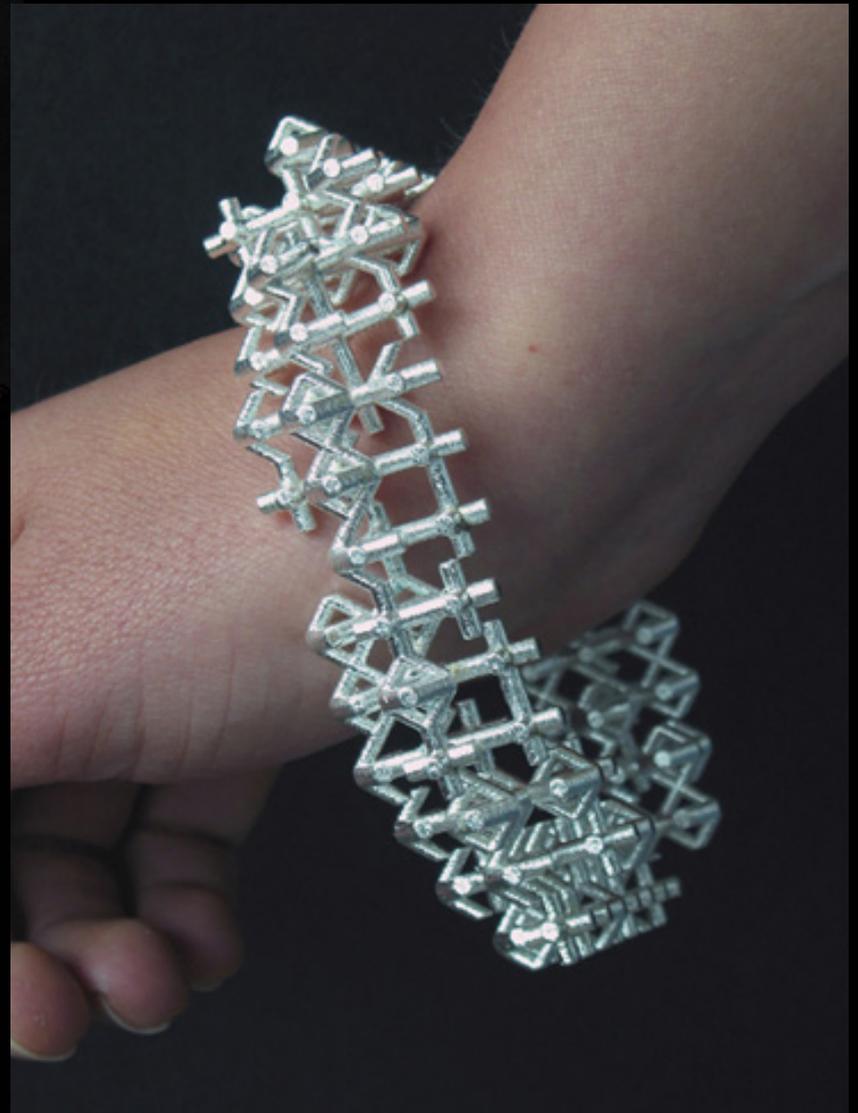
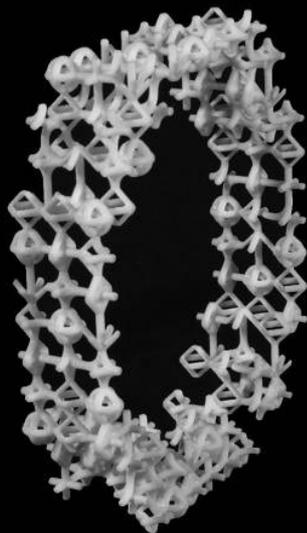
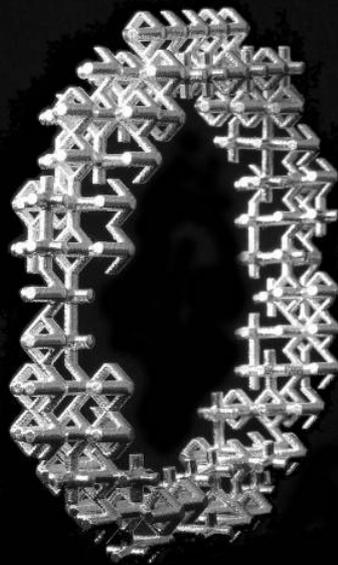
STRETCH

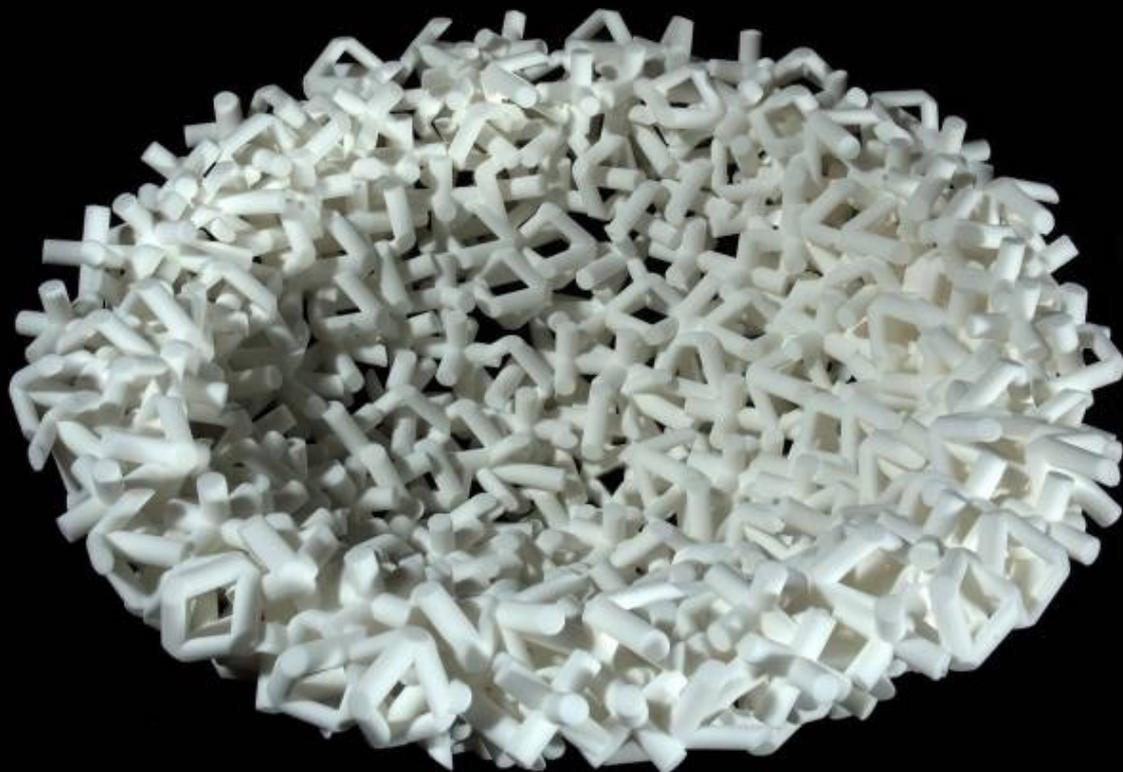
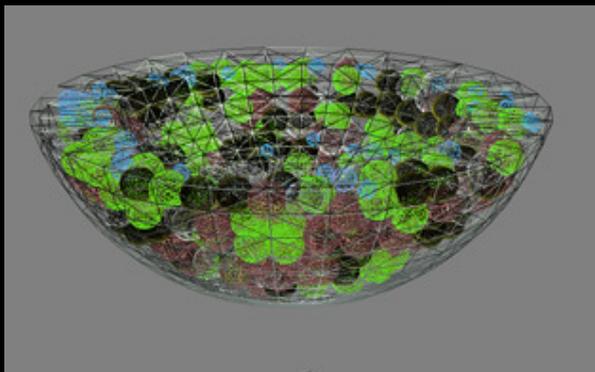
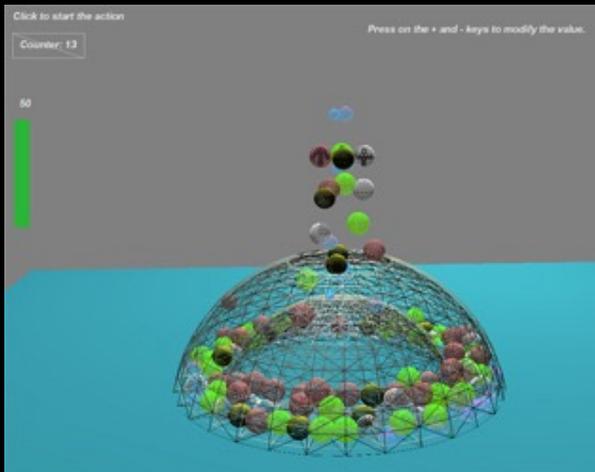
+X -X

+Y -Y

+Z -Z

RESET
MESH

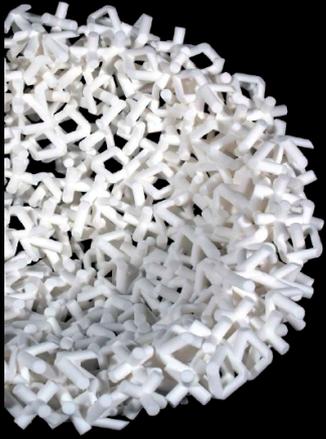




hub

National Centre for Craft & Design

Automake & Future Factories



Automake
FutureFactories

Digital design futures with Justin Marshall and Lionel Dean
On the fourth floor until 8th June

Image credit: (top left) 'Random Fill' bowl (2008) by Justin Marshall; (top right) 'Future Factories' by Justin Marshall (2008) by Lionel Dean; Photography by John Marshall.



The Hub is funded by North Kesteven District Council (MKDC) and Arts Council England. It is managed on behalf of MKDC by Leisure Connector Ltd. www.h-hub.co.uk www.leisureconnector.co.uk





Automake & FutureFactories

Digital Design Futures

Automake and FutureFactories are examples of new, alternative systems to production systems that transcend the limitations of established design and production systems. FutureFactories enable consumers to have choices never before possible, as products are produced by computer software and crafted by machines, produced in as many as you want. In changing the way in which design and production systems have the potential to change the meaning of craft and designer maker practice.

FutureFactories presents the work of Lionel Theodore Dean, an experienced consultant internationally recognised for his pioneering work in digital manufacturing. His research is based around the use of digital design and production technology to redefine craft and designer maker practice.

FutureFactories presents the work of Justin Marshall, a research fellow working in the Automake cluster at University College Falmouth. As a maker he is interested in the use of digital design and production technology to potentially redefine craft and designer maker practice.

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FutureFactories

FutureFactories presents the work of Lionel Theodore Dean, an experienced consultant internationally recognised for his pioneering work in digital manufacturing. His research is based around the use of digital design and production technology to redefine craft and designer maker practice.

The work produced by Justin Marshall and Lionel Theodore Dean challenges accepted design practices at a point where the established system of production is coming to an end. They present two alternative approaches to the creation of mass-produced craft objects.

The systems they use highlight key questions for a debate on the future of production.

What is the future role of the maker?
 What new skills will they require?
 What is the future role of the designer?
 Where exactly are we?
 Do we require new materials?

The systems used in the exhibition contemplate the future of production while working with the current system.

The Automake cluster research led by Professor Justin Marshall at University of Huddersfield and FutureFactories at University of Falmouth.

The exhibitors will be:



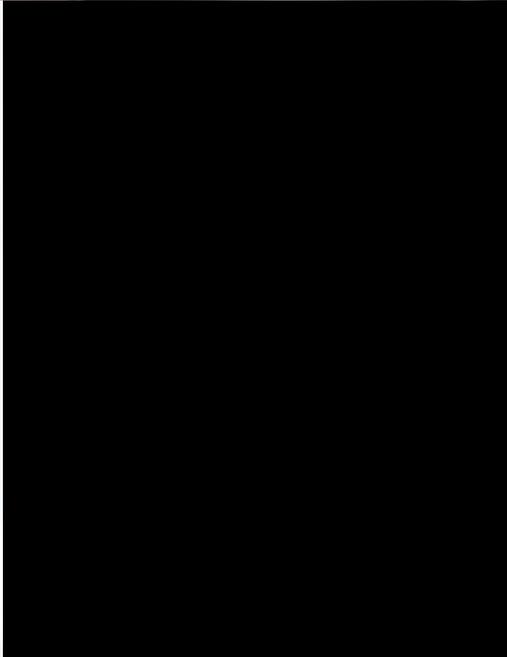
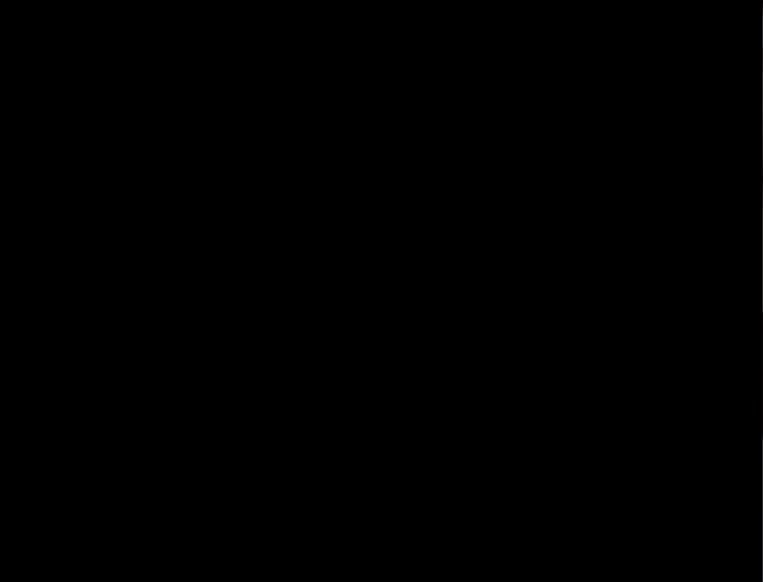
OPEN DESIGN NOW

WITH
VISUAL
INDEX



WHY DESIGN
CANNOT REMAIN
EXCLUSIVE

BAS VAN ABEL
LUCAS EVERS
ROEL KLASSEN
PETER TROXLER

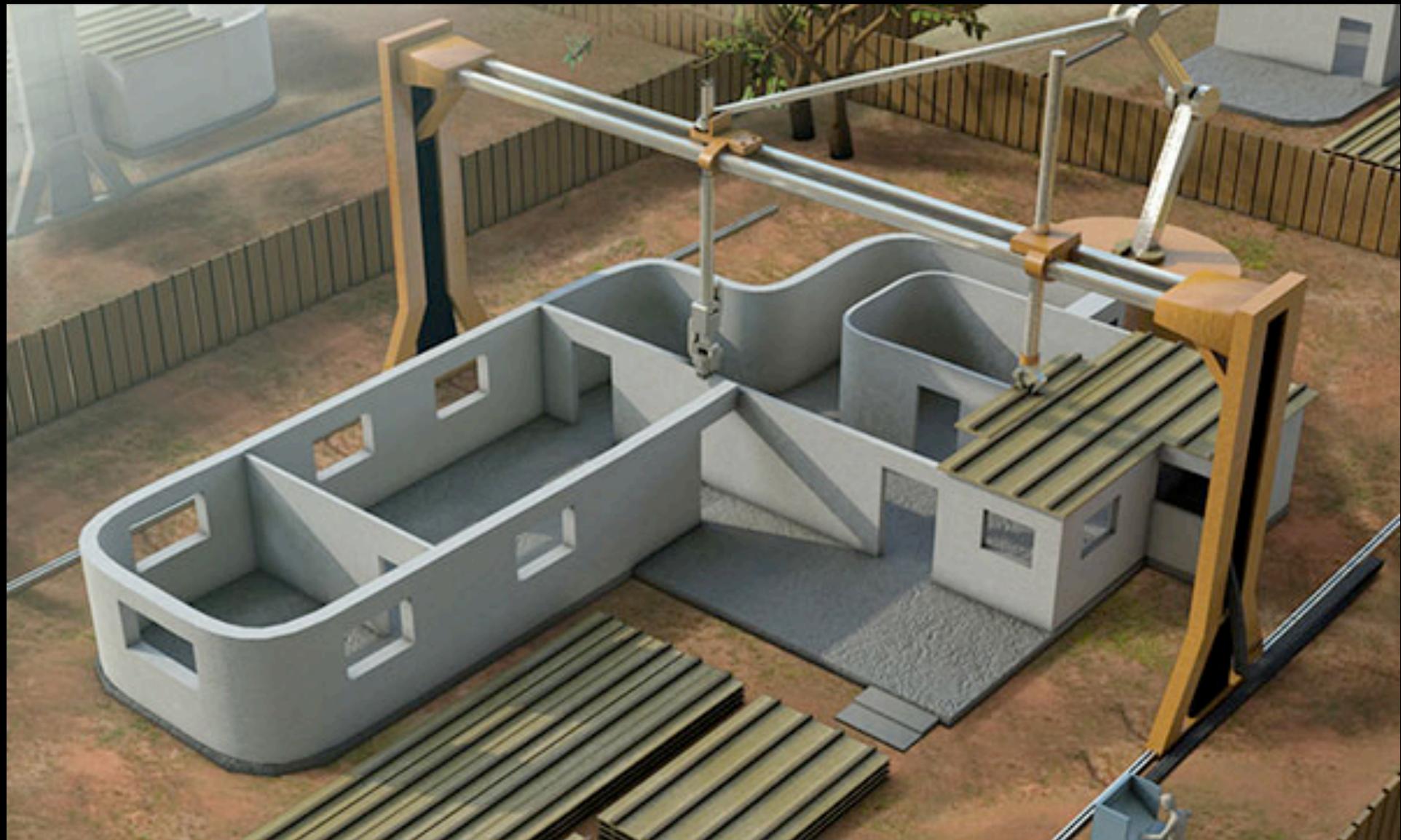


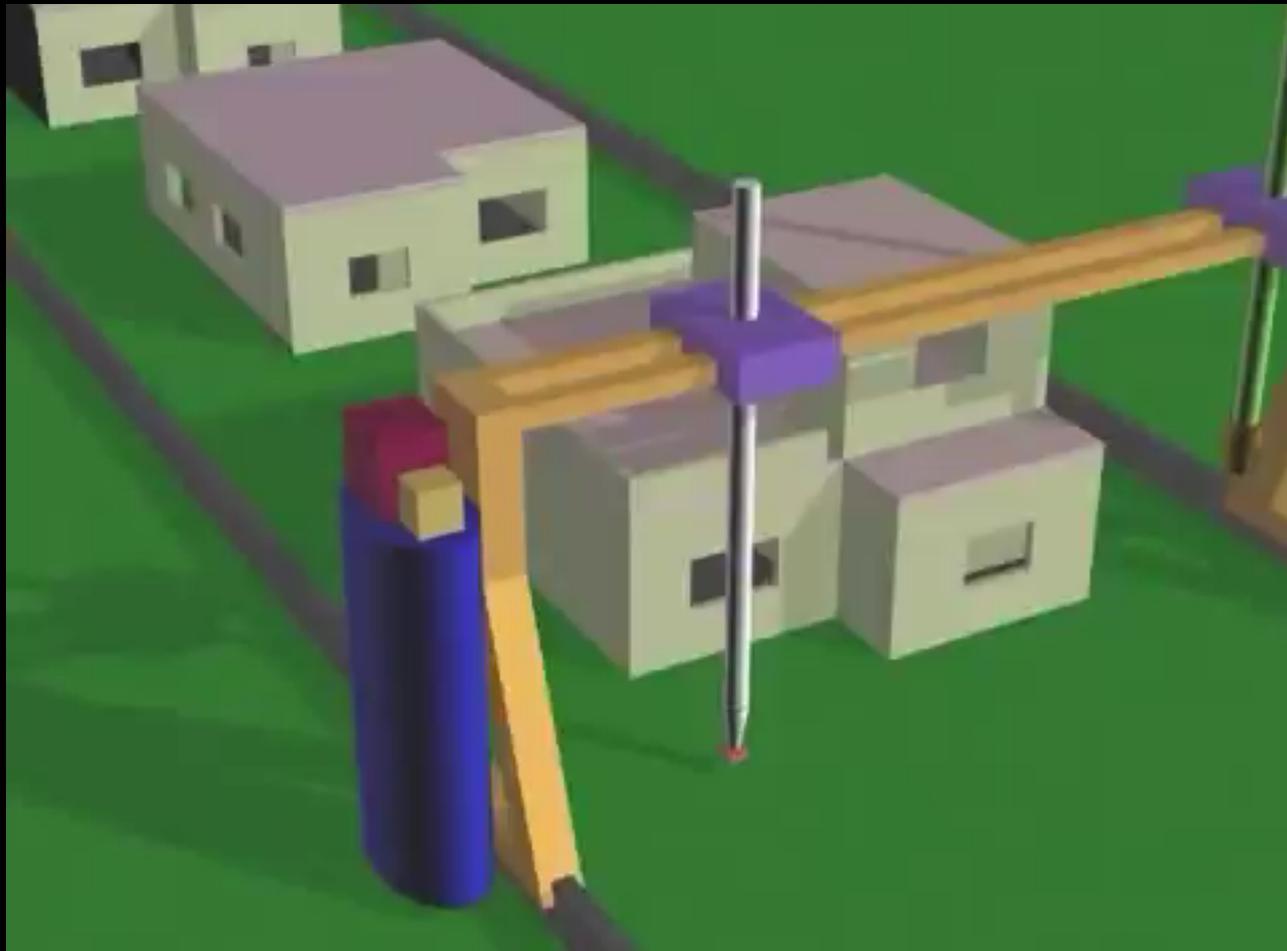






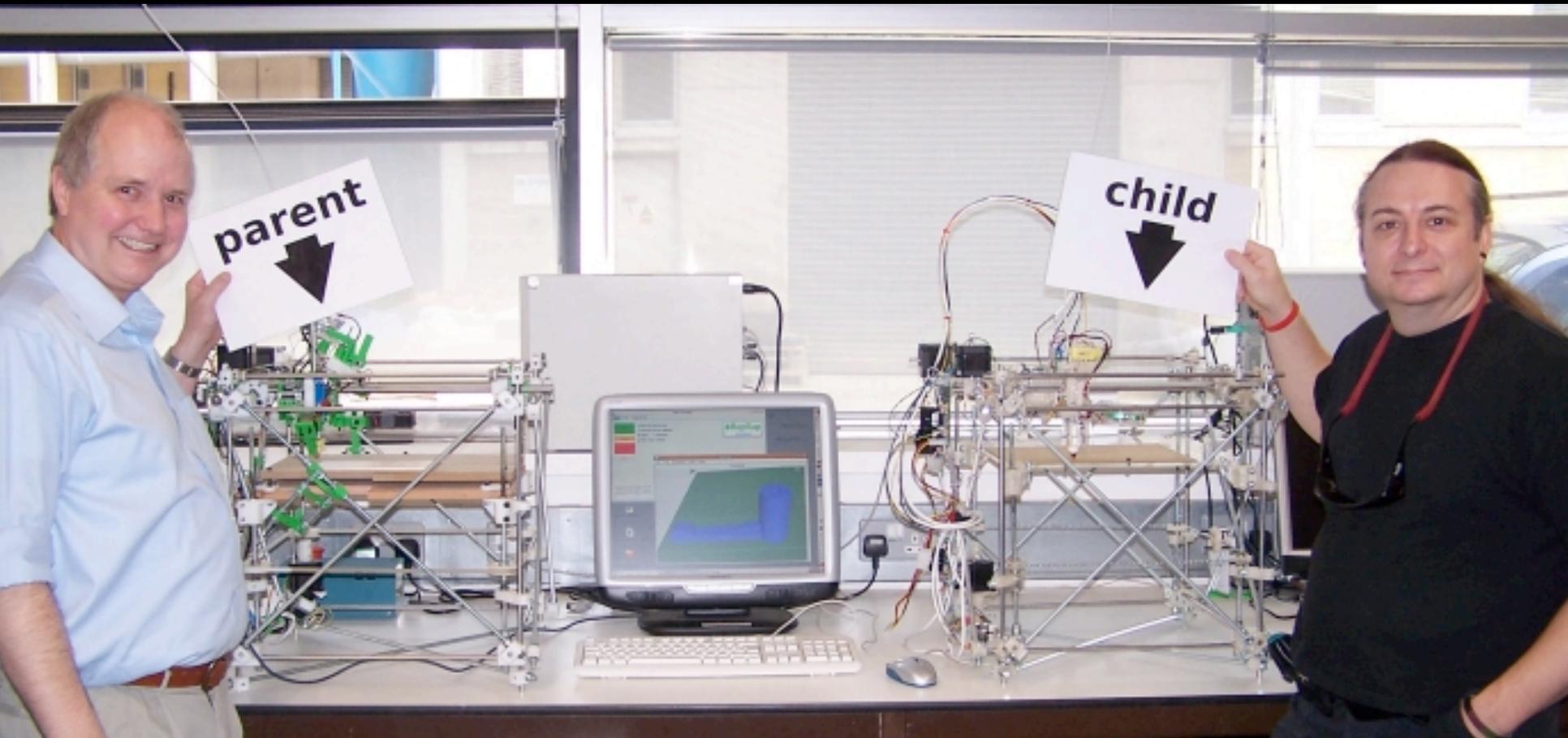
TNO innovation
for life

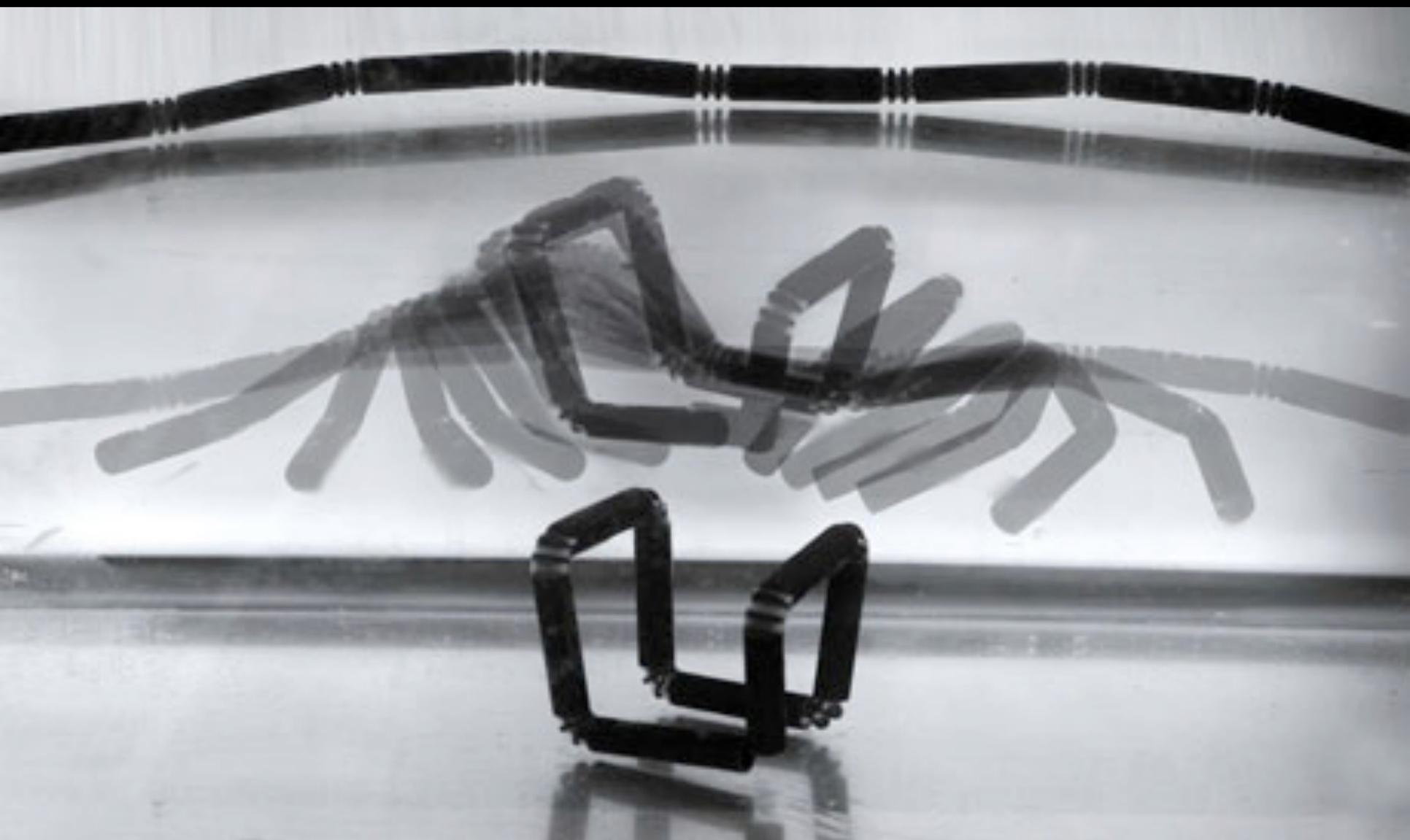














Issues

We are entering a 'Post Professional' era.

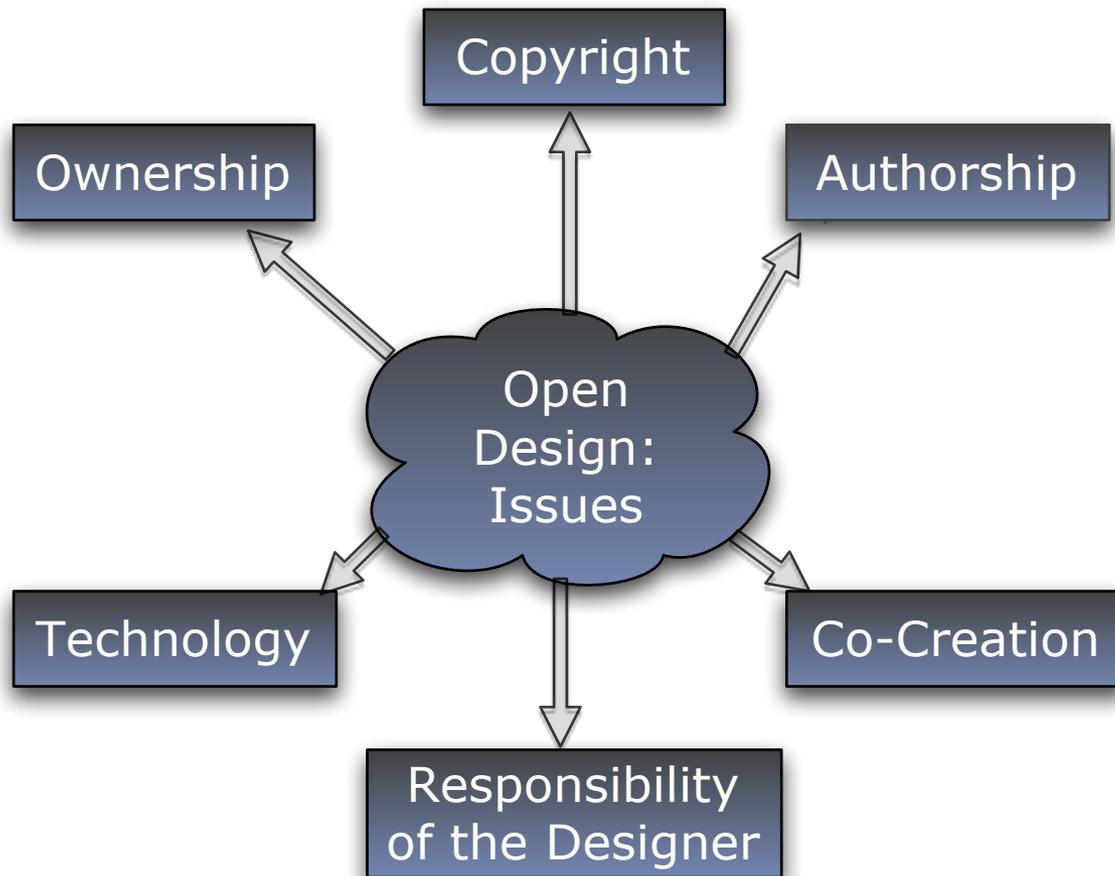
The new norms may be:

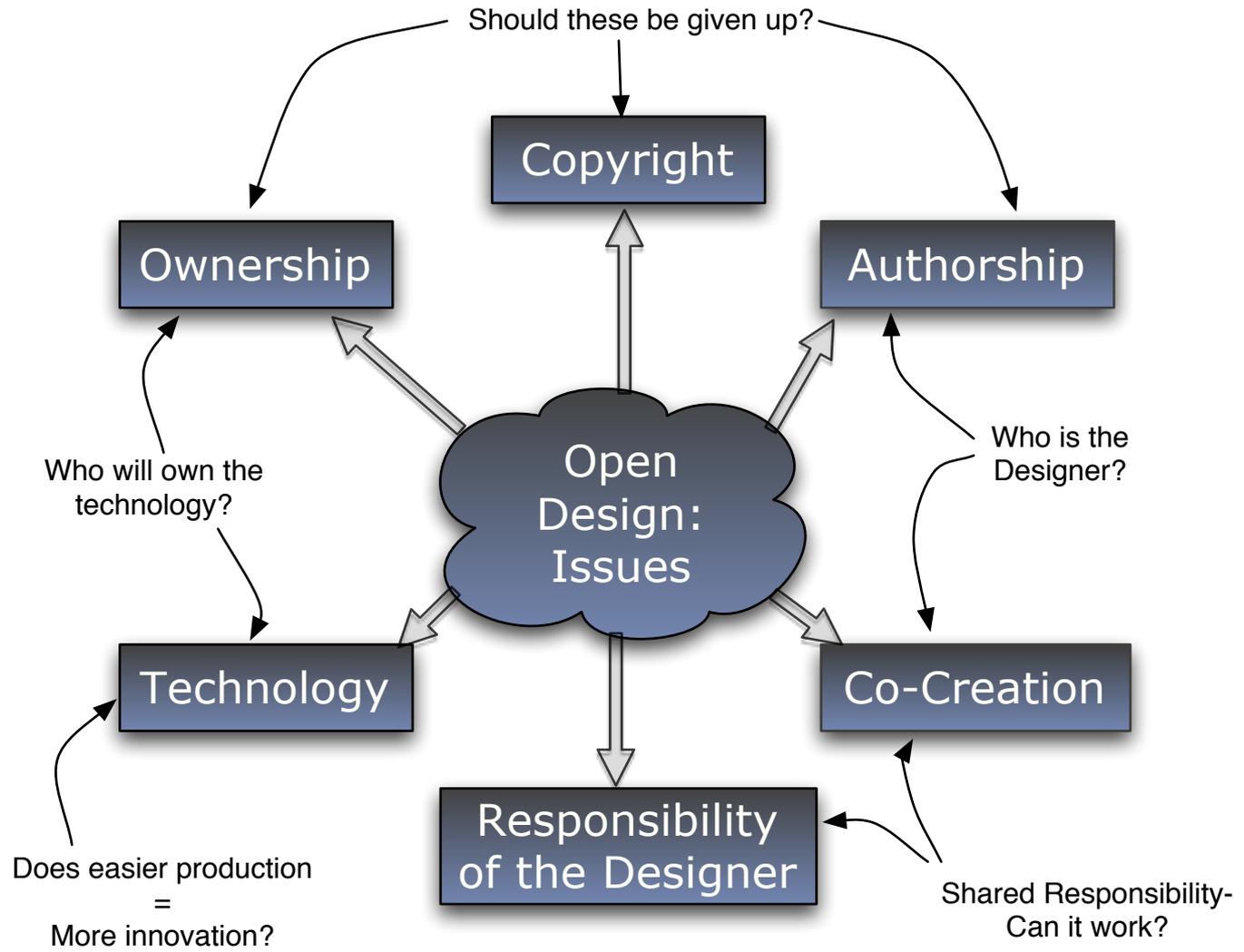
direct digital manufacturing,

mass personalisation and

Open Design

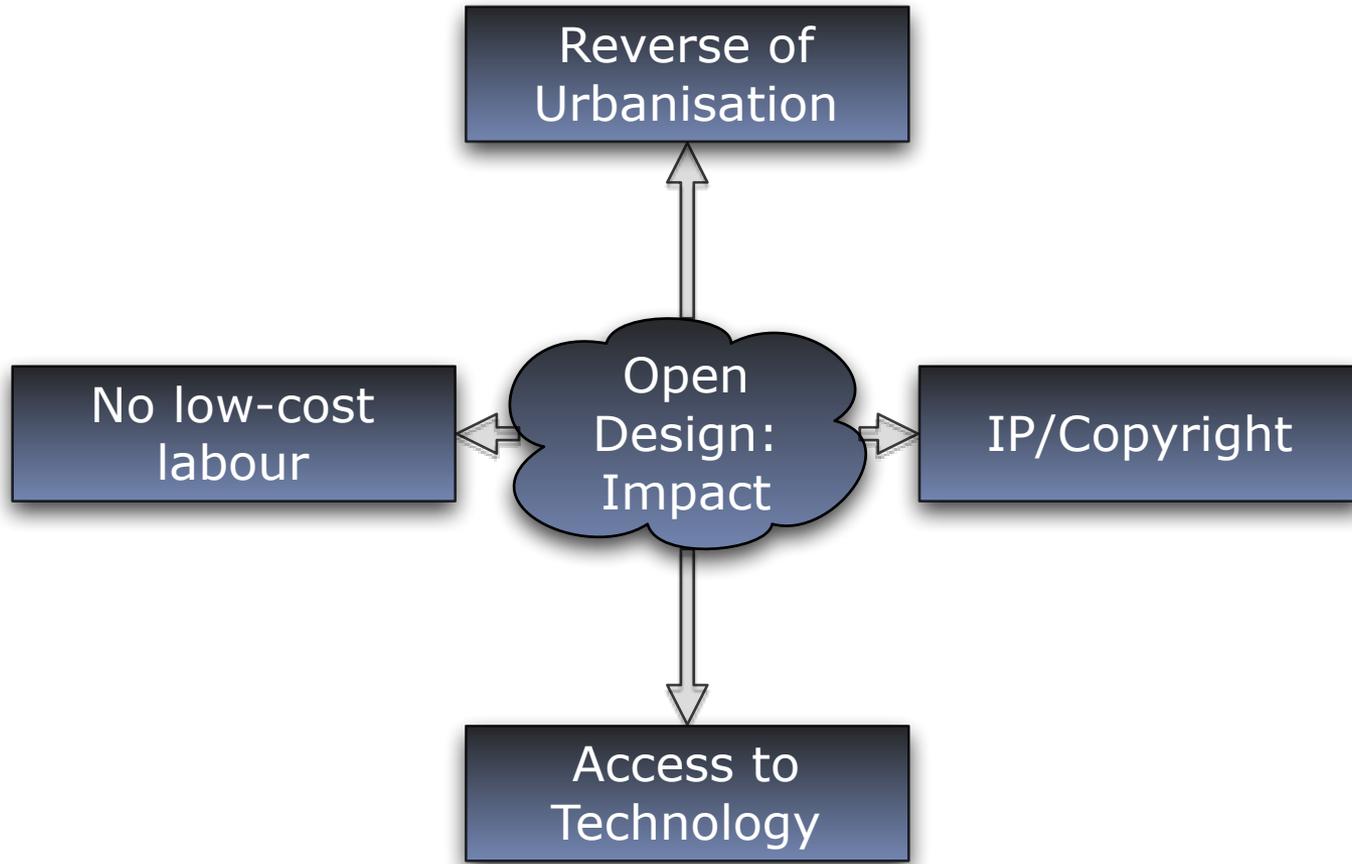
The notion of the professional designer will be called into question, and a number of issues will need to be addressed

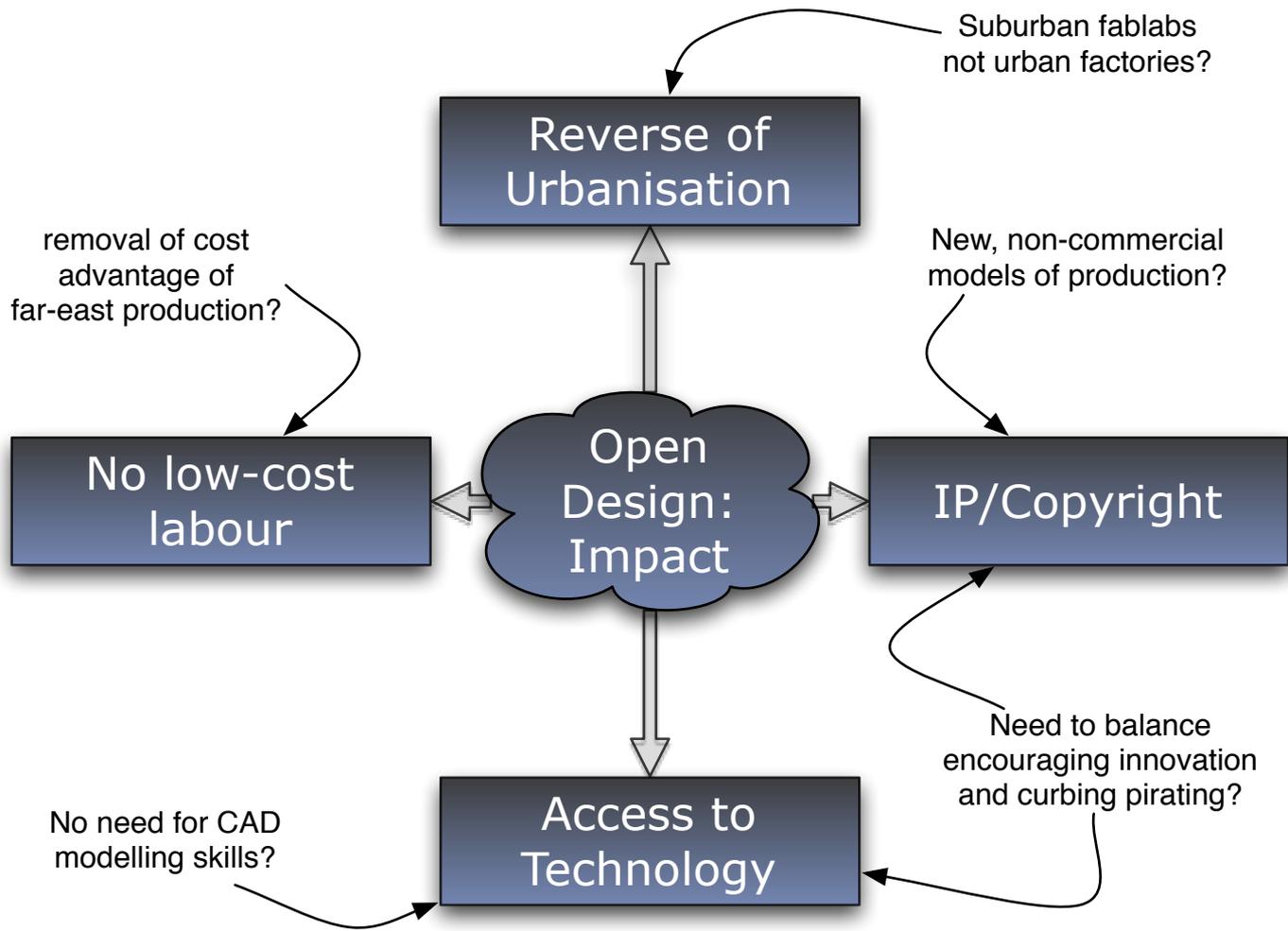




Impact

The potential impact of Direct Digital Manufacturing and Open Design could be more far-reaching than might at first be thought:





Post Industrial Manufacturing

The full potential of emerging technologies in direct digital manufacturing may only be fully realized when allied with Open Design practices

Post Industrial Manufacturing has to be seen as an alternative to Mass Production, and in many ways a return to a more craft-based production ethos

Post Industrial Manufacturing

We cannot accurately predict the future, but there is almost certain to be a sea change in design and manufacturing processes.

In some areas of production, there will be a paradigm shift in approach, in others, the changes may be more subtle and nuanced.

Thank You

- **Contact Details:**

p.atkinson@shu.ac.uk

- **Further information:**

<http://www.paulatkinsondesign.com>