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*Edinburgh College of Art*

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## UOA C13

ARCHITECTURE, BUILT  
ENVIRONMENT AND PLANNING



### RESEARCHER

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Fiona McLachlan

### OUTPUT TITLE

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*Colour Strategies in Architecture*

### OUTPUT TYPE

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Exhibition and Book

### DATE

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July 2015 – March 2020

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## 01 / STATEMENT

FIG. 1  
*Colour Strategies in Architecture*  
book. Photo Richard Coyne.



*Colour Strategies in Architecture* book available at: <https://schwabe.ch/colour-strategies-in-architecture-978-3-7965-3421-8>

This practice-led research portfolio includes the book *Colour Strategies in Architecture*, original artworks and the design of nine installations of an exhibition that toured 10 venues.

The research offers new insights into the strategic use of colour in architecture through field investigation of a series of buildings designed between the 1920s and the present day, by six architectural practices.

New research methods have been established to make 'close readings' through observation of the colours used in the buildings, followed by an interdisciplinary discursive analysis of the palettes, location and extents of the colour. The fieldwork observations and documented palettes were synthesised with research from texts and photographic records. The proposed strategies are intended to be transferable into architectural design practice to promote a greater integration of colour within the design process.

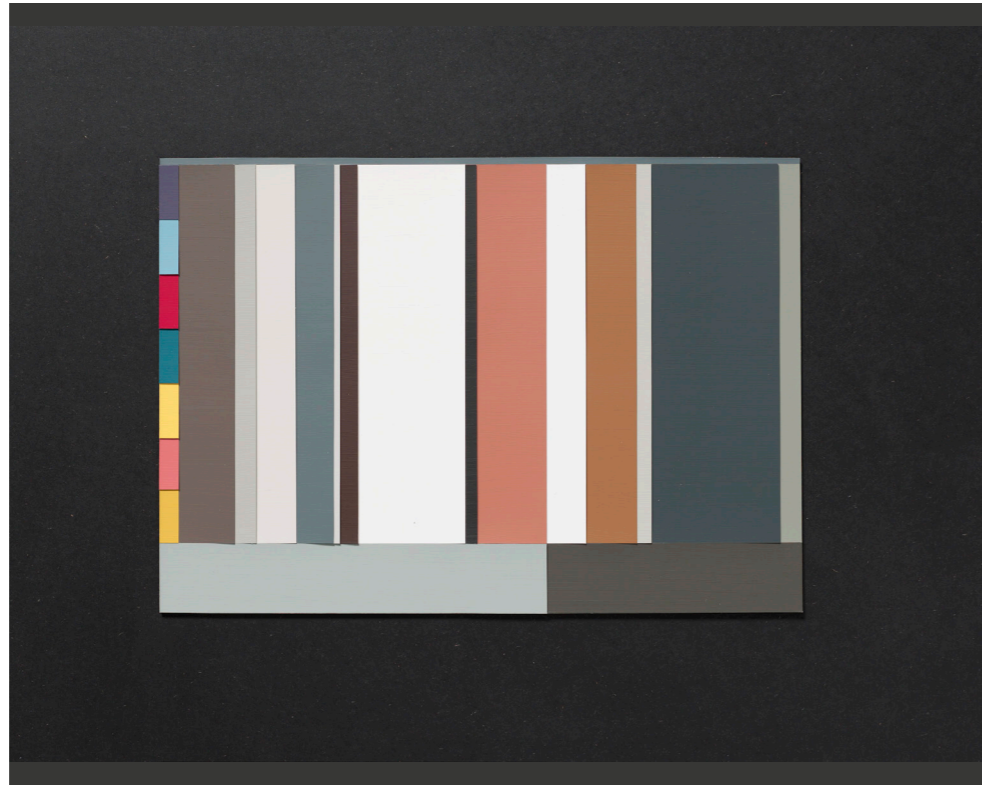
The use of hand-paintings and collage as part of a visual research methodology is suggested as a technique that embeds the development of new knowledge through making and designerly analysis. The method of production of these images became an inherent part of the research. The images are therefore both the research, and one of the means through which the research findings are communicated to the audience.

*Colour Strategies in Architecture* has been published as a second edition in German, *Farbstrategien in der Architektur*.

Front cover: detail of hand-painted colour portrait, based on building study of Basil Spence's housing, Canongate, Edinburgh Collage, acrylic paint on card. Copyright Haus der Farbe, Fiona McLachlan and Marcella Wenger-di Gabrielle. Photo Urs Sigenthaler.



**FIG. 2**  
Colour portrait based on building study of Spence, Glover and Ferguson, Claremont Court Housing, Edinburgh. Acrylic paint on card. Copyright Haus der Farbe, Fiona McLachlan and Marcella Wenger-di Gabrielle. Photo Urs Sigenthaler.



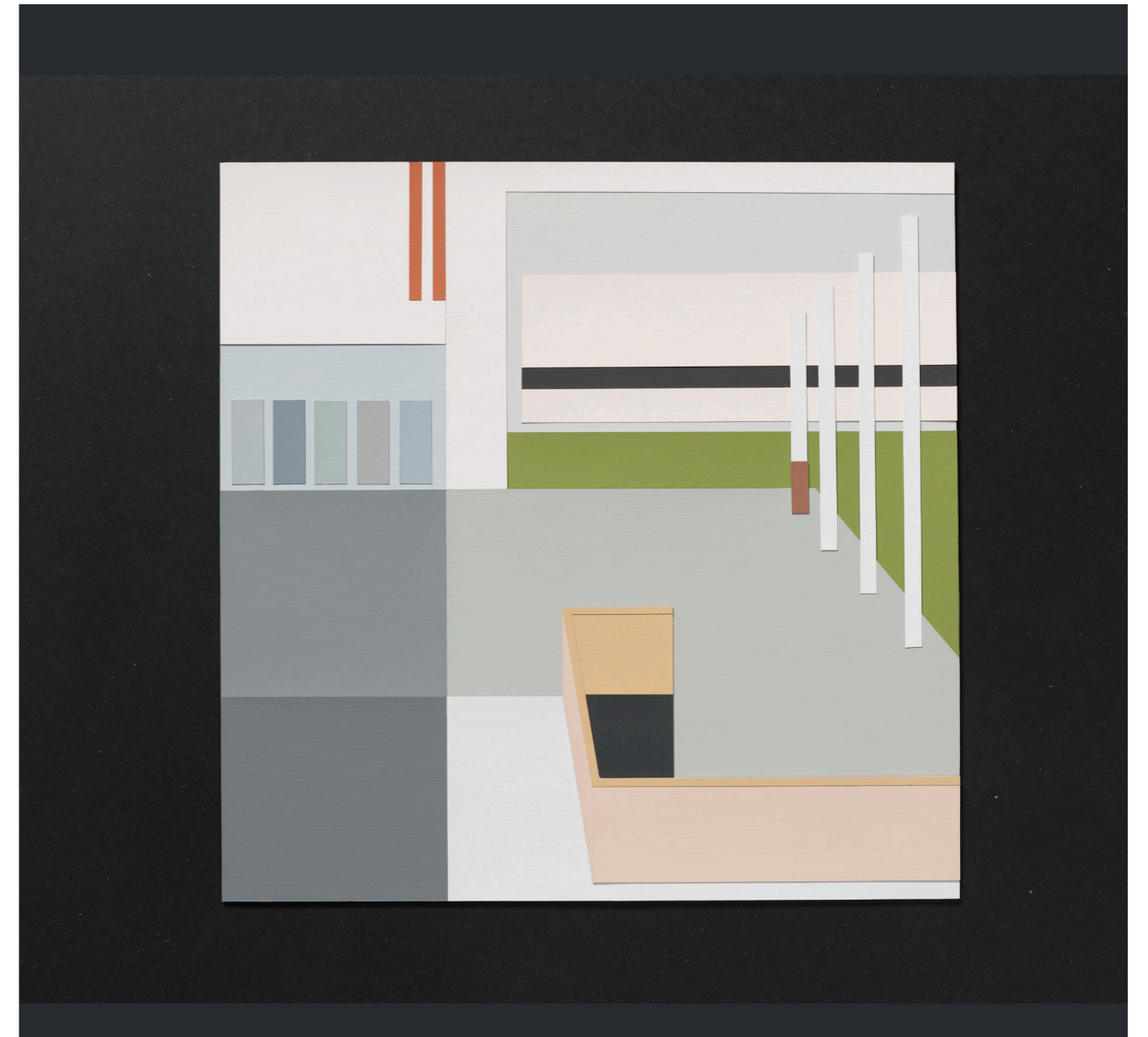
**FIG. 3**  
Colour portrait based on building study of Hans Scharoun's Library reading room in Berlin. Acrylic paint on card. Copyright Haus der Farbe, Fiona McLachlan and Marcella Wenger-di Gabrielle. Photo Urs Sigenthaler.



Two research methods that were developed are illustrated here.

- Two-dimensional 'building portraits' – used to evaluate relationships between colours situated relative to their location on the building, the proportional extent of colour elements and the character of the palette.
- Three-dimensional visualisations – semi-pictorial, using various painterly devices of composition and viewpoint to bring the viewer into the frame, to indicate sensory experience and the colour strategy employed.

**FIG. 4**  
*Hushed Tonalities*, hand-painted, collaged visualisation based on studies of buildings by Reich & Hall Architects, Edinburgh, 2014. Light, shadow, soft tones and the influence of landscape are the key elements of this strategy. Copyright Haus der Farbe, Fiona McLachlan and Marcella Wenger-di Gabrielle. Photo Urs Sigenthaler.





## 02 / RESEARCH DIMENSIONS

FIGS. 5–6  
*Colour Strategies in Architecture*  
book. Photos Richard Coyne.



The output is a book on colour in architecture: *Colour Strategies in Architecture* (2015, Schwabe Verlag) and a companion exhibition which toured ten international venues.

The content and format of the exhibition were adapted to the conditions of each venue. The exhibitions included original artworks developed as part of the research and focussed on the use of colour in the buildings of six key architectural practices.

The exhibition and book content included a series of collages co-authored by McLachlan and Marcella Wenger di Gabriele, derived from hand-painted, A2-sized colour swatches prepared as part of the research project.

The exhibition was shown first in the Gewerbemuseum, Winterthur, Switzerland in July 2015, timed to coincide with the international book launch. The exhibition components were designed and made in Winterthur, Switzerland.

McLachlan was responsible for the curation, design, technical drawings and installation of the travelling exhibition for the three UK exhibitions during 2015–17, which included fundraising and logistics.

Two further artworks were made by McLachlan in response to the Edinburgh and London venues.

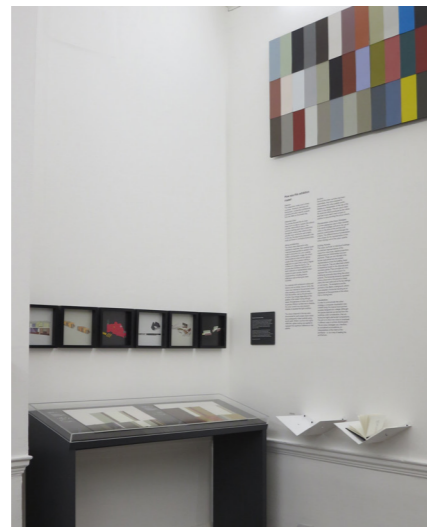
The exhibition then toured to Wuppertal, Trondheim, Aarau, Lugano, and two venues in Fribourg between 2017 and 2020. In all but one instance, McLachlan designed the layout and produced the installation drawings.

For Design Portfolio documentation of each exhibition venue, with selected drawings, images of the installation and final exhibition, and a record of impact from allied events and visitor comments, see link on page 2 and also Appendix, page 20.



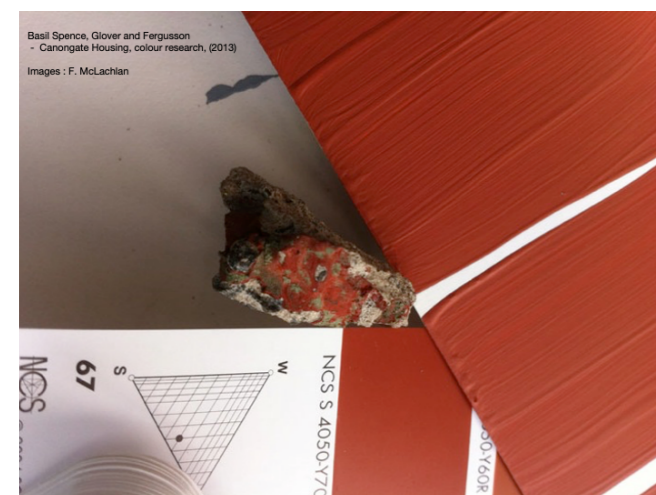
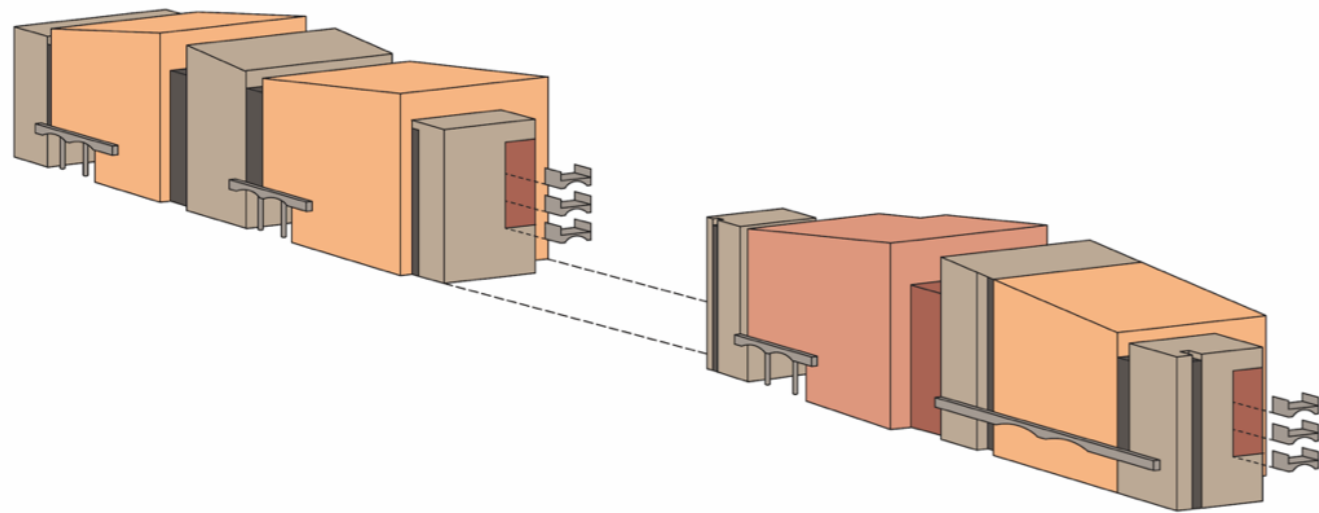


**FIGS. 7–16**  
From top left:  
July – October, 2015.  
Gewerbemuseum,  
Winterthur, Switzerland.  
October – November, 2015.  
Matthew Gallery,  
University of Edinburgh, Scotland.  
February – April, 2016.  
The Lighthouse, Glasgow,  
Scotland.  
November 2016 – January, 2017.  
The Architectural Association,  
London, England.  
December, 2017.  
Bergische Universität, Wuppertal,  
Germany.  
May, 2018.  
Trondheim Municipality, Norway.  
August, 2018.  
Forumschlossplatz, Aarau,  
Switzerland.  
December, 2018.  
Limonaia di Villa Saroli, Lugano,  
Switzerland.  
September, 2019.  
Service d’urbanisme et  
d’architecture, Fribourg,  
Switzerland.  
February – March, 2020.  
Haute école d’ingénierie et  
d’architecture, Fribourg,  
Switzerland.

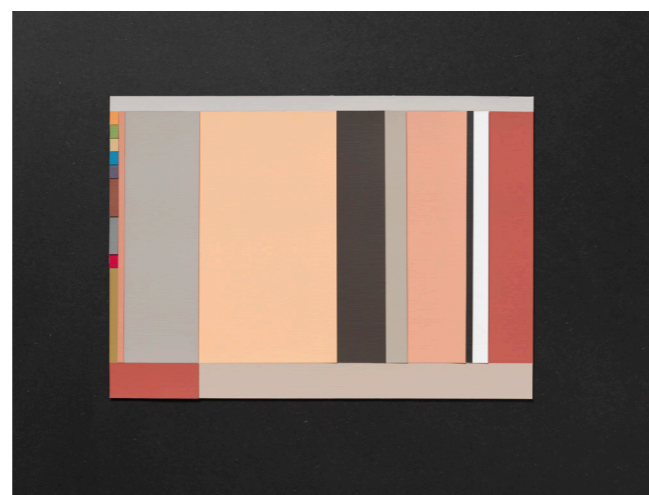




**FIG. 17**  
Abstract conceptual study showing 'Tectonics Clarified' colour strategy, Basil Spence Glover and Ferguson, Canongate housing. Digital drawing by Fiona McLachlan.



**FIG. 18**  
As part of the research, acrylic paint is mixed by hand. In the case of Basil Spence, the original colours had been overpainted. Photo Fiona McLachlan.



**FIG. 19**  
Colour portrait based on building study of Basil Spence's housing, Canongate, Edinburgh. Collage, acrylic paint on card. Copyright Haus der Farbe, Fiona McLachlan and Marcella Wenger-di Gabrielle. Photo Urs Sigenthaler.

## 03 / ORIGINALITY

The research focussed on the colour strategies of six architectural practices selected and compared for analysis: Lux Guyer, Basil Spence, Hans Scharoun, Reiach & Hall, Knapkiewicz & Fickert and Rainer Rümmler.

The research found that colour is an important factor in their design strategies, e.g. to establish relationships between figure and ground, to modify space or the way in which building form is perceived, or to establish a memorable identity.

The exhibition included short summary caption texts that were produced in German and English – two for each project stating the colour strategy illustrated and the characteristics of the colour palettes.

A new technique was developed in the course of this research to produce abstract collages through intersubjective discussion and observation. The visualisations communicated the strategic role of colour as a spatial modifier. The use of the hand-painted collages as a form of visual methodology, developed during the research, is further discussed in an invited and peer reviewed book chapter. See Appendix, page 20.





**FIG. 20**  
Hand mixed acrylic paint was stored and coded ready for the making of the large colour swatches. These relate to Forth Valley College, Stirling by Reich and Hall Architects *Hushed Tonalities* colour strategy. Photo Fiona McLachlan.



**FIG. 21**  
Mixing of the paint was done by eye to match the colour that had been observed and recorded from field work. The Edinburgh team (including three third year students) were trained during a week-long visit to the Haus der Farbe in Zurich. Photo Fiona McLachlan.

**FIG. 22**  
To achieve the exact match for every colour required multiple attempts. Between each test, the paint must be dried as it becomes darker. The mix is then adjusted repeatedly until the match is established. Photo Fiona McLachlan.



**FIG. 23**  
After over 350 colour samples had been mixed in studios in Berlin, Zurich and Edinburgh, they were laid out for a research workshop held in Edinburgh. Photo Annemarie Nesper.

## 04 / RIGOUR

The research offered new insights into the strategic use of colour in architecture through field investigation of a series of buildings designed between the 1920s and the present day by the six architectural practices.

New research methods provided ‘close readings’ of the colours used in the buildings, followed by an interdisciplinary discursive analysis of the palettes, location and extents of the colour. Fieldwork observations and documented palettes were synthesised with research from texts and photographic records.

The collaged visualisations began as rough CAD models that McLachlan made in Sketchup to allow for numerous test views and projections to be considered by the research team.

Mockup drawings were then made in Vectorworks and digitally tested with rough colour before arriving at a satisfactory projection. 4mm thick Perspex templates were laser cut into jigsaw pieces to be traced by hand onto the painted swatches. These were then cut and collaged to give layers with shadows.



Basil Spence Code: **BSGF CG** Date of colour capture

**Architect: Basil Spence (Spence, Glover and Ferguson) Building: 65-87, 97-103 Canongate, Ed** Date of Building

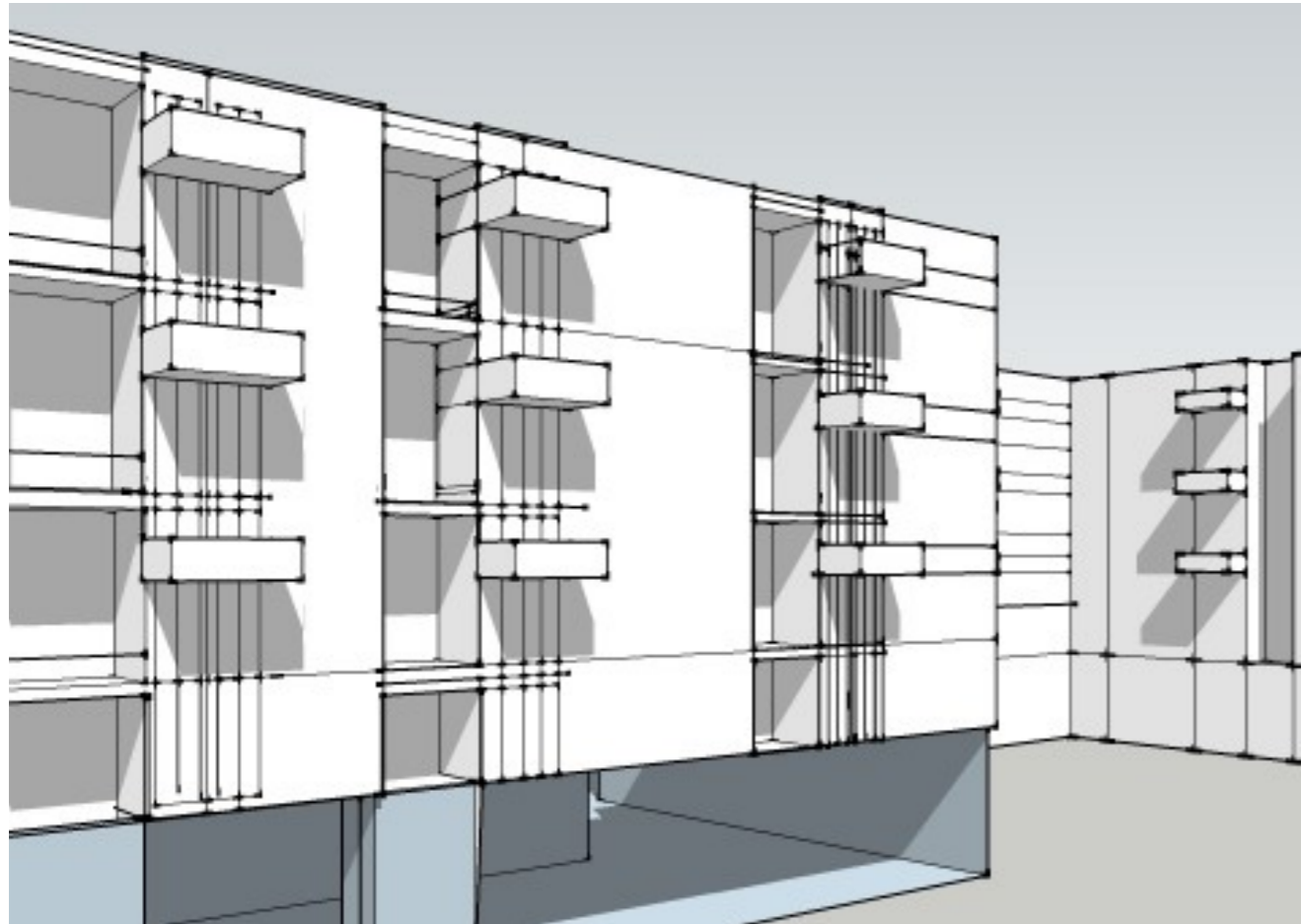
Code N R.	NCS S Nuance	Buntion	NCS Page	Other Colour Fan	Precise shade Note for mixing	Colour family	Component	Material	Surface Characteristics	Reflectance	Which part of the building	Storey
1	9590			Keim	Little more black	Grey	Fascia, bargeboards	Asbestos (on record)	Smooth	Matt		Roof
2	3010	Y30R	25	Dulux		Grey	Stone walls & garden walls	Stone/ Granite?	Natural	Matt		
3	2030	Y70R	51	NCS	Slightly darker towards 2040 Y70R	Pink	Wall (Pink)	Harling painted	Rough, lumpy	Matt	Currently closer to 1015 Y50R p 29 NCS but was brighter	
4	1040	Y40R	45	NCS	Scraped close to Keim 9108	Orange	Wall (Peach)	Harling painted	Rough, lumpy	Matt	Currently closer to 1015 Y40R but was brighter and more orange (Lorette)	
5	4050	Y70R	67	NCS	Scraped close to Keim 9162 (more red)	Red	Wall (Terracotta)	Harling painted	Rough, lumpy	Matt	blocks, Currently 4060 Y80R p61 Dulux	
6	4005	Y50R	12	NCS		Grey	Columns and Vaults/ Arches Balconies	Concrete	Exposed aggregate	Pitted/ stoney		
7	4010	Y10R	11	Dulux		Grey	Window surrounds	Concrete	Smooth	Matt		
8				BS 2660	As BS 4800 E 00 05	White	Window frames and opening lights	Painted Wood	Opaque smooth			
9	3040	Y60R	46	Dulux		Pinky red	Infill panels façade	stained Plywood	Opaque smooth			
10	8105	Y53R	42	Dulux	Dark Brown	Brown	Infill panels façade	stained Plywood	Opaque smooth			
11	00	E53		BS 4800		Black	Window Railings	Steel				
12	7030	Y50R	41	Dulux	Towards 6030 Y50R p41	Brown	Stair doors	Varnished Wood	Smooth	Semi-matt	Glazed Stair doors/ screens	

**FIG. 24**  
A spreadsheet record of observed colours from site and archive research, Basil Spence, Canongate, Edinburgh. The same method was used to record every colour observed on all the case study buildings.



**FIG. 25**  
Mixed paint ready for the making of the large swatches from Basil Spence Glover and Ferguson on doors in their housing project at the Canongate, Edinburgh, 1969. Photo Fiona McLachlan.





**FIG. 26**  
An early *Sketchup* study model by McLachlan of 'Klee' housing in Zurich, Knapkiewicz & Fickert.



**FIGS. 27–28**  
Top: *Vectorworks* studies by McLachlan used in discussion with the research team for the development of the 'second layer' visualisation.

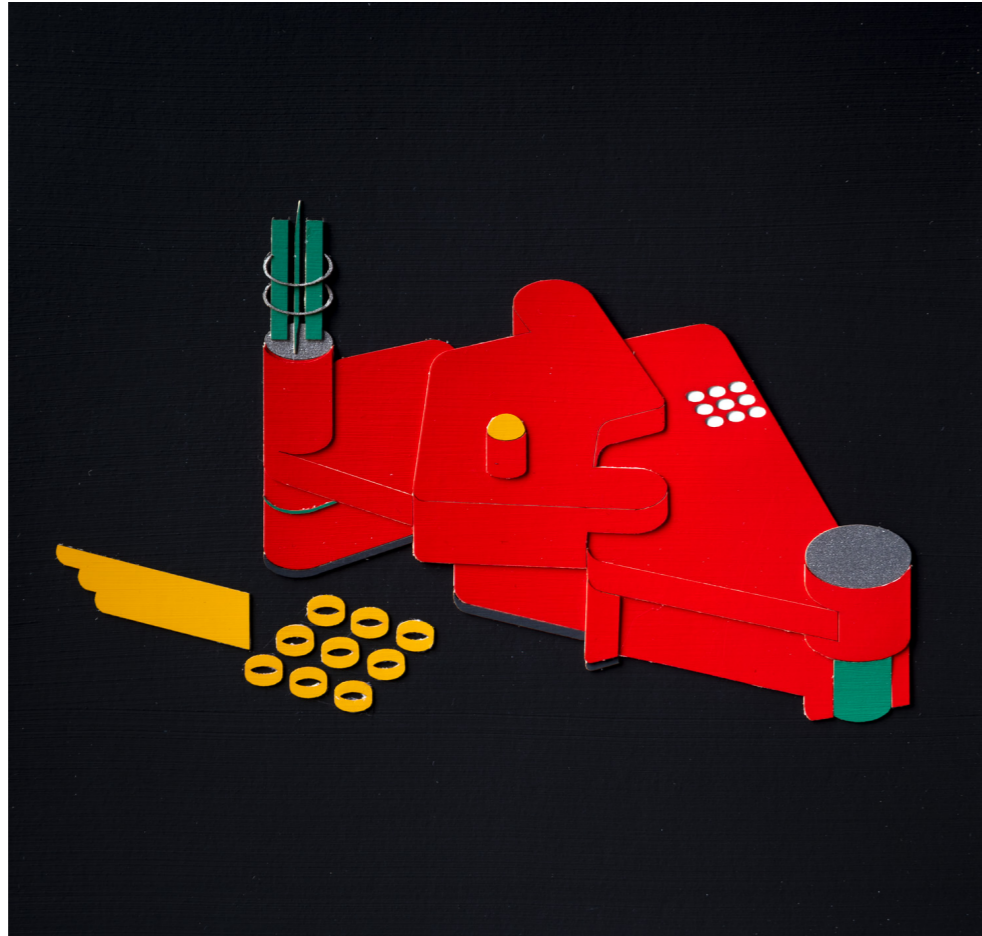
**FIG. 29**  
Bottom left: *Vectorworks* line drawing by McLachlan of final projection used to laser cut the perspex template.

**FIG. 30**  
Bottom right: the final hand-cut, layered collage.





**FIG. 31**  
One of six small 'icon' collage studies developed and made by McLachlan specifically for the London Architectural Association exhibition, U-bahn station, Berlin by Rainer Rümmler. Acrylic paint on card, laser cut. Photo Fiona McLachlan.



**FIG. 32**  
The *Shoulder to Shoulder* installation by McLachlan was reconfigured as a high level frieze, for the London AA exhibition, seen from Bedford Square at dusk. Photo Fiona McLachlan.



## 05 / SIGNIFICANCE

The exhibition was peer-reviewed via a competitive selection processes for the Glasgow and London venues. In summary, the exhibition and book have:

- Examined an area of architectural design (namely colour) neglected in architectural history and in the present-day education of architects.
- Presented original first-hand research by an international interdisciplinary team over a three-year period. For links to book and to documentation of Design Portfolio, see Appendix, page 20.
- Delivered an effective ensemble of outputs that will ensure long term application of the research findings.

The exhibition authors have been approached by Edinburgh World Heritage together with architects who are working on the restoration of the Basil Spence Canongate housing, which was a case study in the book. The restoration is now on site and the building is intended be renovated to the original colour palette.

Invited public lectures were delivered in Edinburgh (Docomomo), Glasgow (University of Glasgow Colour Studies Group), University of Liverpool, Dundee Institute of Architects and Newcastle Royal Town Planning Institute / Landscape Institute.

Lunch-time CPD talks for architectural practices were given at Richard Murphy Architects, Ben Tindall Architects, Reiach and Hall and Collective Architecture.

In London, the Architectural Association hosted an international symposium to coincide with the exhibition. This was organised by Antoni Malinowski and Adam Nathaniel Furman and a video of the event, including keynote lecture by the author is available in the film archive. See Appendix, page 20.



## 06 / APPENDIX

### Book

McLachlan, Fiona, Anne M. Nesper, Lino Sibillano, Marcella Wenger-Di Gabriele, and Stefanie Wettstein. 2015. *Colour Strategies in Architecture*. Basel: Schwabe Verlag. ISBN 978-3-7965-3421-8.

<https://schwabe.ch/colour-strategies-in-architecture-978-3-7965-3421-8>

### Peer reviewed book chapter

McLachlan, F., 'Visual Heuristics for Colour Design' in Ewing, S. and Troiani, I. (eds). *Visual Methodologies for Architectural Research*, London: Intellect Books [in press].

### Lecture

*Tectonics Clarified: Colour in the Work of Basil Spence*. Docomomo Scotland, October 2015.

### Film

Link to film of McLachlan's keynote lecture at the Saturated Space, Architectural Association Symposium, November 2016.

<https://www.youtube.com/watch?v=BjONz7x5NS-g&t=122s>

### Website of Haus der Farbe

Technical School and Institute for Design in Craft and Architecture, Zurich.

<https://hausderfarbe.ch/de/projekte-und-referenzen/farbstrategien/>

FIG. 33

McLachlan with a research assistant from Haus der Farbe. Photo Stefanie Wettstein.

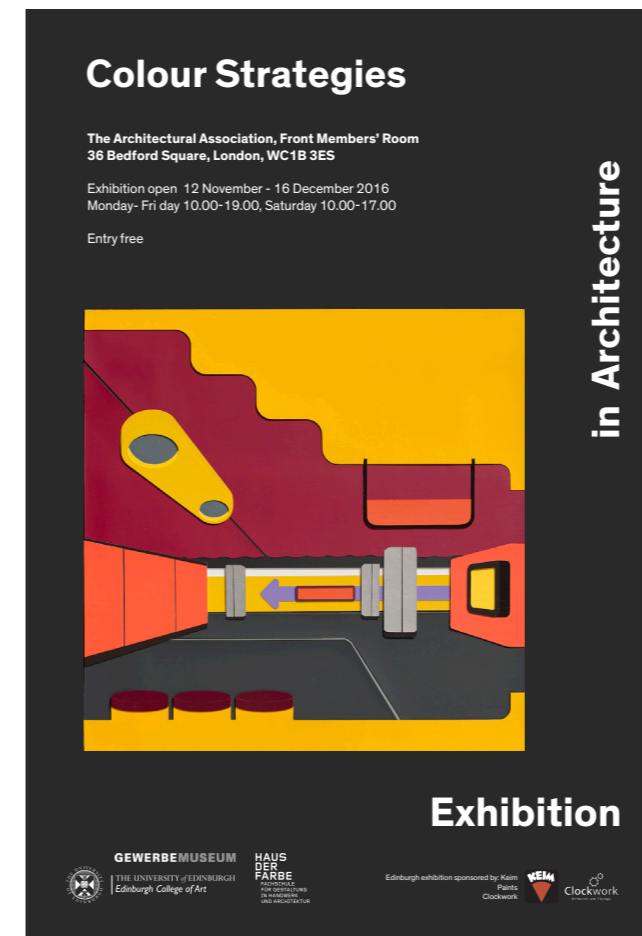


FIG. 34  
Exhibition poster for *Colour Strategies in Architecture* exhibition, The Lighthouse, Glasgow, 2015.



FIG. 35  
Screenshot of *Docomomo* website, October 2015.





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ISBN: 978-1-83645-024-5  
DOI: 10.2218/ED.9781836450245

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May 2020

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