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# New Product Proposal

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## Manuals/Guides

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### **Proposed title**

**Regenerative design for structural engineers**

### **Author name/s**

**Oliver Broadbent – Constructivist**

**James Norman – University of Bristol**

### **Previous experience**

A brief CV that details your professional (structural engineering) history in addition to any author/publishing experience you may have.

Oliver has worked on a number of highly creative and interactive projects aimed at helping structural engineers develop in the areas of design and creativity, first as a director of Think Up and now as director of Constructivist. Oliver was a co-author of Conceptual Design of Buildings (IStructE, 2020) as well as being a prolific blogger (<https://eiffelover.com>) and podcaster. In 2021 Oliver was awarded the “Sir Misha Black Award for innovation in design education” and in 2022 he is running a regenerative design lab with funding from the Royal Commission for the Exhibition of 1851.

James has 10 years design experience including designing the Tate modern façade and a number of other award winning buildings. James has authored five books, Structural Timber Elements (TRADA), Conceptual Design of Buildings (IStructE, 2020), Designing Timber Structures (TRADA, 2020), Micro Record Labels (self published, 2020) Reliability Based Design (IStructE, 2022, work in progress). James is also the recipient of a National Teaching Fellowship and is professor of sustainable design.

### **Timescale (approx.)**

A realistic projection of when you expect to submit a final draft.

The plan is to write and publish the book in a year, starting January 2022. The first draft will therefore be submitted by the end of June 2022, with a hope the book will be published by the end of 2022.

### **Synopsis**

Brief overview of the topic, it's relevance/importance to today's audience, and this book's approach to it.

Structural Engineering has a large impact on the environment, from global warming to loss of biodiversity. This book is a creative provocation to engineers to reimagine the way they work and the projects they do so that they stop trying to do no harm (and failing) and instead focus on doing good. The book will take the theory of regenerative design and present it in a way that will be accessible and challenging for structural engineer.

## High-level chapter overview

A brief (1-2 sentence) explanation of what each chapter might be called and what it might contain.

### Introduction

#### Part 1 – Regenerative design for structural engineers in 12 diagrams

Through the use of engineering diagrams we will explain the central concepts of regenerative design in the language of engineers. This will set out the theoretical background for the rest of the book.

#### Part 2 – Regenerative design at an organisational level

Through a series of short chapters we will look at the different ways that the principles of regenerative design can be applied to different systems. Chapters will include projects, the company we work for, the supply chain, the institution, the industry. Each chapter will include multiple examples taken from industry as well as from regenerative design projects from the authors own experience.

#### Part 3 – Regenerative design and the individual

Regenerative design requires a transformational approach not just to the teams and organisations that we work within but to the individuals who participate. This final part will look at how, as individuals, we can consider practices and process's to make us more regenerative. This section will include a number of references to other work for further investigation, as well as some personal and vulnerable insights from the authors. Topics will include creativity, agency, listening, identity, purpose, resilience, learning, reflection and change.

### Further reading and resources

## Anticipated word, image and table count (very approx. is fine)

Pages – 100 approx

Words – 35,000 (based on CDOB being 269 pages and 90,000 words)

Figures – 30 (12 in part one followed by 9 each in parts 2 and 3)

Photos – 60 (the book will aim to be visually rich and give many real life examples)

Tables – 6 (the book is unlikely to contain many tables but a few might be useful)

## Intended readership

E.g. is this a niche publication aimed at particular specialists or a general guide for most structural/civil engineers)?

The intended audience is structural engineers from undergraduate through to director who want to go further than the current aim to do no harm (which we don't achieve) and learn about regenerative design. We also hope it will be read by academics and there may be some interest from other building professionals such as architects, although there is a reasonable body of work already in this space.

## Brief competitor analysis

For example, to the best of your knowledge what similar titles are already available/in production, how does the proposed publication differ from/improve upon the existing literature).

There are, to the best of our knowledge, no books on regenerative design aimed at structural engineers. Below is a short list of other publications which will overlap with this book (and will be key references).

Design for zero, J J Orr, M Cooke, T J Ibell, C Smith & N Watson, IStructE 2021 – This guide, also published by the IStructE is in many ways the precursor to our own book. It looks at how structural engineers can work towards do no harm and specifically focuses on reducing embodied carbon. We hope our own book will be a companion, looking beyond do no harm towards regenerative design principles.

Flourish, Sarah Ichioka and Michael Pawlyn, Triarchy Press, 2022 – This book, which is aimed at professionals in the built environment, looks at how to take the principles of regenerative design and apply them. In reality this book is well suited to architects but will have less direct application to structural engineers. One of our aims is to take the ideas from books on regenerative design (including the Green Imperative by Victor Papanek and Designing Regenerative Cultures by Daniel Wahl and this one) and present them in a way that is meaningful and applicable to structural engineers.

Materials and the environment, Michael Ashby, Butterworth-Heinemann, 3<sup>rd</sup> Edition, 2021 – This book (along with Sustainable materials with both eyes open by Julian M Allwood and Jonathan M Cullen) looks at materials and present some excellent arguments for the circular economy (along with many other important points). Circularity is a key component of regenerative design, but it also goes much wider than this. As a result this book will also be a key reference, but is presented to a different audience.

Lo-TEK design by radical indigenism, Julia Watson, Taschen, 2020 – This book collects together a number of low tech solutions and is both inspiring and challenging. However, the jump from this content to current construction practices make applying this as a structural engineer challenging.

## Suggestions for Steering Group

The book will be overseen by a small Steering Group, assembled by the Institution's Technical Publications Panel. If you would like to suggest individuals please provide details.

As the people listed here haven't been contacted/agreed yet we have decided not to list them here.