

# ReGeneration by Knoll™

## Idea & Concept

Compiled and edited by Knoll, Inc.

*Based on interviews with Kent Parker, Formway Design Lead Designer, Paul Wilkinson, Formway Design Lead Engineer  
and Benjamin Pardo, Knoll Director of Design*

**Knoll**

## Introduction

It's no longer necessary to rely on an intricate combination of adjustable levers when a work chair like Generation by Knoll® can move with you, automatically flexing and adjusting itself in response to your shifting positions. This new standard of dynamic seating proves that it's possible to provide both support and comfort to users as they continuously move through postures and work modes—without having to interrupt the flow of activity to adjust their chair to the particular task at hand. Since its introduction in 2009, the Generation chair has defined elastic design for the office seating market and now it's producing a family of like-minded work chairs, each with its own distinct features, but all with a common DNA that allows users to sit how they want. The ReGeneration by Knoll™ work chair, the newest member of the family, distills the essence of the Generation brand, streamlining the form and its features, while demonstrating the Knoll commitment to continuously evolve its sustainable manufacturing processes, in this case by incorporating rapidly renewable content such as corn byproducts.

## Structure as Form

Principals at Formway Design, the New Zealand-based design group, credit the many lessons learned during the extensive design and prototyping process for the Generation chair and years of close collaboration with materials experts and product engineers at Knoll for the relatively quick two-year time span between the conception and launch of the ReGeneration chair. Formway Lead Designer Kent Parker cites the elegantly attenuated bridges of architect-engineer Santiago Calatrava as a model for his team's strategy of using the structural diagram to dictate the overall form. By celebrating rather than hiding the interplay of loads and forces typically applied to work chairs, Formway was able to “minimize components and minimize materials so we get [directly] to performance,” explains Parker. Benjamin Pardo, Director of Design at Knoll, concurs, pointing to the designers' use of a curve for the chair's back as the central element and one that equally and economically serves both aesthetic and structural purposes and, at the same time, provides comfort. “Visually there is not a lot of chair there,” notes Pardo, who explains that this economy of means not only results in an appealingly slim silhouette, it also sends a strong message about making efficient structures, and, so, by implication, the importance of conserving natural resources. And there was an added benefit to both revealing and streamlining the structure, according to Formway's lead engineer Paul Wilkinson, who points out that “more parts add complexity and [therefore] cost,” something counter to the fundamental purpose of the ReGeneration chair—bringing dynamic seating to a wider audience.

## Minimizing Materials

The ReGeneration by Knoll chair's streamlined, contoured back frame encapsulates a molded high-performance elastomer, called the Flex Back Net—the same material that wraps the figure-eight structure of the Generation chair back—which provides both flexibility and resistance, comfort and support for the back, shoulders and lumbar area. Cushioned arm rests offset from the rounded, flexible seat provide space and comfort to those who like to sit sideways in their chairs, giving ReGeneration a 270-degree radius of supported sitting. A weight compensating Dynamic Suspension control uses your weight as a counterbalance, creating recline resistance in the chair's back, eliminating the need for yet another adjustable part—one more feature that allows users to move effortlessly through a variety of work modes or seated positions, seamlessly shifting from working alone to working in groups in a rhythm that is increasingly characteristic of the collaborative culture of today's workplace.

The Flex Back Net hooks directly to the back frame without fasteners, and the frame and arm supports are made using recycled plastic soda bottles, a post-consumer material. While both designer and manufacturer are deservedly proud of the chair's use of recycled content, both are focused on the larger context of sustainability, specifically the drive to incorporate rapidly renewable materials. ReGeneration, according to Adam Deskevich,





Specialty Materials Engineer at Knoll, uses a high performance elastomer in the Flex Back Net that is approximately 60% renewably-sourced, derived from corn byproducts, and biobased upholstery foam, derived from soy. The exponential growth of the green building industry in recent years points to increased awareness and opportunity for leading-edge sustainable products. In fact, Formway cites a 2008 study by the Boston Consulting Group that projects the green building market to be valued at \$47 billion in 2011, almost 3.5 times what it was in 2006.

## Sustainable Design

In the case of the ReGeneration chair, the goal of conserving resources relies not only on mining the waste stream for post-consumer materials. It's also achieved through reducing future waste by minimizing the number of parts and connections necessary to assemble the chair, which, in turn, reduces the chair's weight, as well as associated packing and shipping costs, and so, the overall carbon footprint of manufacture, assembly and delivery. Toward that end, ReGeneration has seven major parts, requires 10 standard screws for assembly and weighs just 26 pounds—37% less material and 11 pounds lighter than the Generation chair, which itself is approximately 20% lighter than most high performance chairs. The task of paring down the parts and pieces of Generation while remaining true to its essential spirit required reexamining every detail of the chair and “innovating new approaches to part-to-part connections,” maintains Khalid Masoud, Lead Product Design Engineer at Knoll. “Everything was rethought in a new way.”

## Knoll Heritage

There is an underlying consistency, however, not only to the Generation idea of seating that moves with the user, but also, as Pardo points out, to a long history at Knoll of producing sculptural chairs—products that both stand out for their expressive form, but also fit into the high functioning requirements of the evolving workplace. While Mies van der Rohe's maxim that “less is more” certainly applies to Formway's approach to the design of ReGeneration, the chair also proves that when it comes to manufacturing efficient structures less can also be, well, less: less material, less parts, less weight, less cost and less adverse environmental impact.