3D TRENDS REPORT 2023

PRODUCT DESIGN IN FOCUS

Adobe

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INTRODUCTION

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Welcome to this mini report on the impact of 3D design tools on product design. As technology continues to advance, 3D has become an increasingly valuable tool for businesses looking to stand out in their market and gain efficiencies, and the process of product design is one of the clearest beneficiaries. In product design, 3D can provide detailed visualisations of a design at any stage of product development, largely eliminating the need for trial-and-error and guesswork, making it easier to evaluate designs and saving time that can be used for creative exploration.

This snapshot explores the latest trends in 3D, focusing on how it's being used by businesses within product design. When the power of using 3D in design is harnessed during product design, the benefits and impact are multi-faceted, and can have longer lasting effects on the product lifecycle.

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01 FROM PROTOTYPE TO PRODUCT

Whether starting from a blank page, or a brand-new digital file, all product designers know that the beginning is both daunting and exciting. An idea's impact depends on many factors, but first and foremost, for an idea to be shared, critiqued and developed, it needs to exist somewhere other than the mind of the creator.

This overall process may sound familiar and eternal, but the tools available are changing. From painting on walls or sketching on paper, to scamping in 2D design software and now designing realistic objects in 3D. The architecture, engineering, and automotive industries were early adopters, using 3D to provide accurate representations of buildings, structures, and cars before assembly. Designers and businesses across the board have realised that these tools can be used to create lifelike and detailed prototypes at all stages of the design process as well as final versions of their products.

The increased ease with which designers can now use 3D tools to realise their vision, and communicate them with others has transformed the creative process, and how businesses market their products. Whether it's a designer sharing early concepts for a product, or the final form, the extent to which it can be critiqued (be it proportions, materials, textures, colours or visual appeal) and further developed is greater with photorealistic capture. This ability is heightened when the image is placed within a similarly realistic-looking environment.

> **3D software has reached a stage where it's so good, you can't tell what's real anymore.**
>
> **Chris Booth**
> Associate Creative Director,
> The LEGO® Agency EMEA, UK

Credit: INDG

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The fashion industry is just one example of how industries are embracing the potential of using 3D within product design, with both commercial and creative benefits. Artistically, creativity can thrive.

“Designers working with 3D have much more creative freedom and the process of creating new products is much easier. They can very quickly experiment with different fabrics, textures and colours, according to the requirements. In the past, you had to modify the physical garment to apply some of these changes, which took a lot of time. But now you can play around much faster.”

Alongside this creative freedom, there are significant advantages for a business commercially. The easy experimentation, described above by Jan Philipp Wintjes, also indicates both time and cost-saving benefits. If an organisation wants to visualise different versions of a product, they can do so without having to manufacture prototype after prototype: “3D as part of our design process enables speed and efficiency as well as creative freedom.”

“Brands can make better decisions faster with 3D samples. You can look at products that don’t exist yet in a realistic way. So, you’re saving time as well as physical waste of producing samples.”

Bastiaan Geluk
Head of Digital Fashion, INDG,
The Netherlands

In essence, the use of 3D technology enables rapid and creative product design, resulting in greater cost-effectiveness and reduced wastage (for more information, please read on).

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02 THE IMPACT OF 3D PRODUCT DESIGN ON OUR WORLD

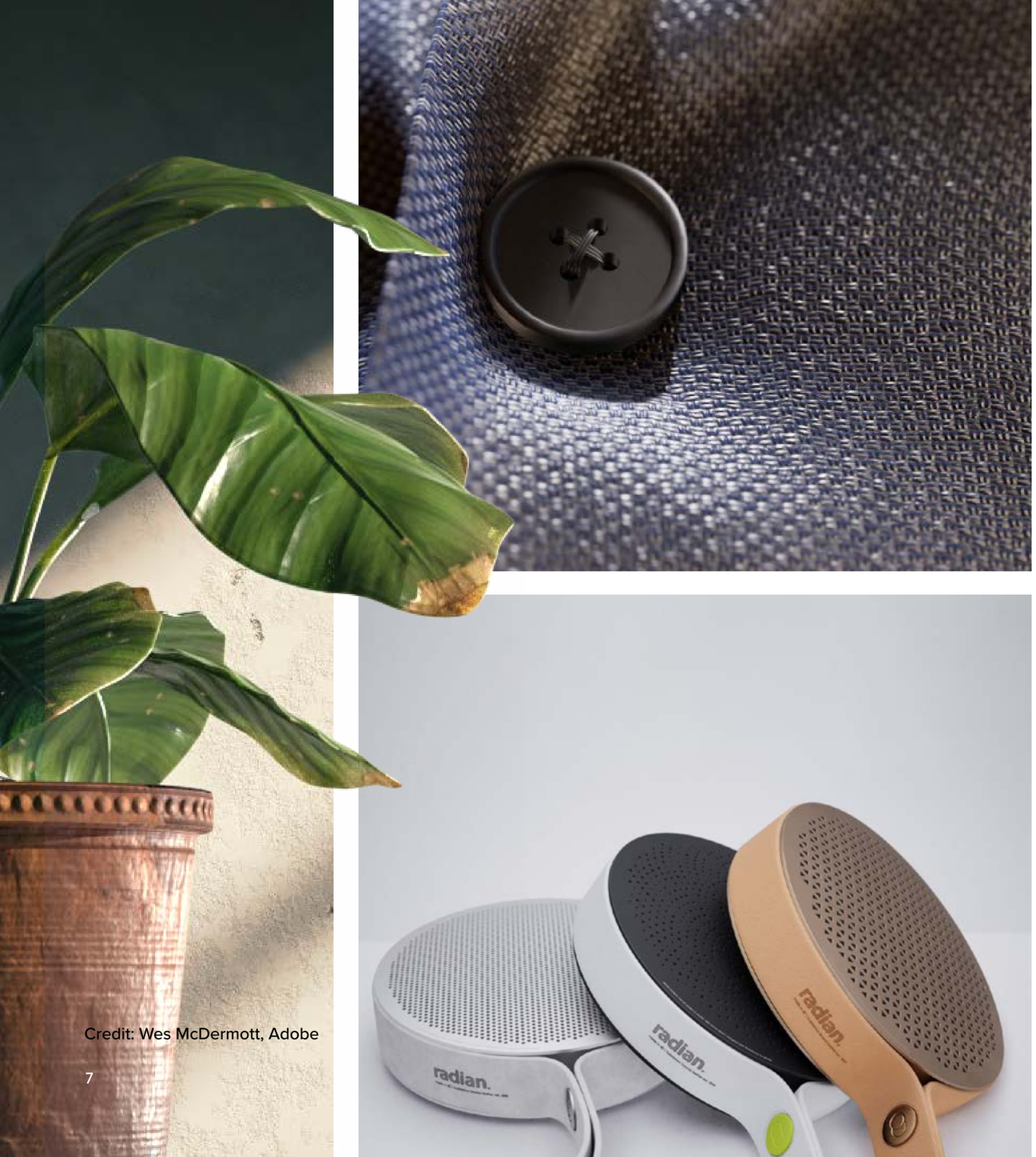
Sustainability is no longer just a buzzword - it's an essential part of modern business. And with the evolution and adoption of 3D design technology, companies can now take significant strides toward reducing waste and carbon emissions associated with traditional manufacturing processes, particularly the product design phase.

Our study shows that a staggering 86% of people believe that using 3D in design can reduce waste during product design and prototyping, and 91% think 3D can reduce carbon emissions.

By using virtual product samples, businesses can make faster decisions and avoid the physical waste that results from creating physical samples. In the case of Hugo Boss, Jan Philipps says, "through our digital showrooms, we have reduced the use and transportation of physical samples by over 70%. This has helped us cut down waste and save energy." This helps them visualise product design mistakes and correct them before producing anything physically, leading to greater efficiency and sustainability.

With 3D design, the future of sustainable product design, marketing and consumption is bright. It's not just a trend, but a genuine and dynamic shift towards a more sustainable future. Companies can now reduce waste and carbon emissions while creating products that meet the needs of customers and the planet.

Credit: Wes McDermott, Adobe



Credit: Wes McDermott, Adobe

3D design for prototyping is something that should be embedded immediately for every fashion business, and we need everybody to be working in 3D design to begin to affect really significant sustainability change.

Matthew Drinkwater and Costas Kazantzis
Head of Agency and Lead Creative Technologist,
Fashion Innovation Agency, London College of Fashion, UK

ABOUT ADOBE SUBSTANCE 3D

Substance 3D Collection is a comprehensive suite of interconnected 3D material authoring, texturing, modeling and rendering tools designed to empower creativity and streamline visualisation workflows in 3D design.

It provides a seamless creative experience with a range of task-specific 3D tools so that creative professionals in design can present their work in realistic, real-world context, maintain material consistency throughout creative pipelines, and enjoy a high degree of control over the creation and editing of content created with 3D tools. Substance 3D tools integrate seamlessly with Adobe Creative Cloud applications, the most common 3D software, and real-time rendering engines, enabling efficient 3D workflows and amazing content.

At the heart of Substance 3D are a collection of versatile applications, each designed to cater to different aspects of the 3D design process.

Substance 3D Sampler

Substance 3D Sampler is a versatile and powerful scanning tool that streamlines the process of converting real-life images into photorealistic materials, 3D objects, and HDR environments. Sampler simplifies the creation of high-quality 3D assets for use across various 3D applications. Featuring seamless integration within the Substance 3D Collection and access to an extensive library of professionally crafted 3D assets, users can effortlessly combine and fine-tune materials using parametric filters, enabling a smooth and efficient 3D workflow.

Substance 3D Painter

Substance 3D Painter offers a comprehensive layer-based painting system that allows users to work directly on 3D models, bringing their creations to life with vivid textures and intricate details. With an array of tools, including Smart Materials, Smart Masks, and generators that automatically adapt to the mesh, users can achieve stunning results while painting with regular, dynamic, or Photoshop brushes, as well as tools and physical particles. It's easy to see why Painter is the go-to choice for texturing 3D models.

Substance 3D Stager

Substance 3D Stager is a state-of-the-art virtual rendering studio designed to create breathtaking visualisations by assembling 3D scenes, arranging assets, applying materials, lights, and cameras. With access to thousands of customisable models, lights, and materials from Substance 3D Assets, users can easily integrate content from the entire Substance family of apps into Stager to craft the perfect composition for product visualisations, marketing imagery, and more.

Substance 3D Asset Library

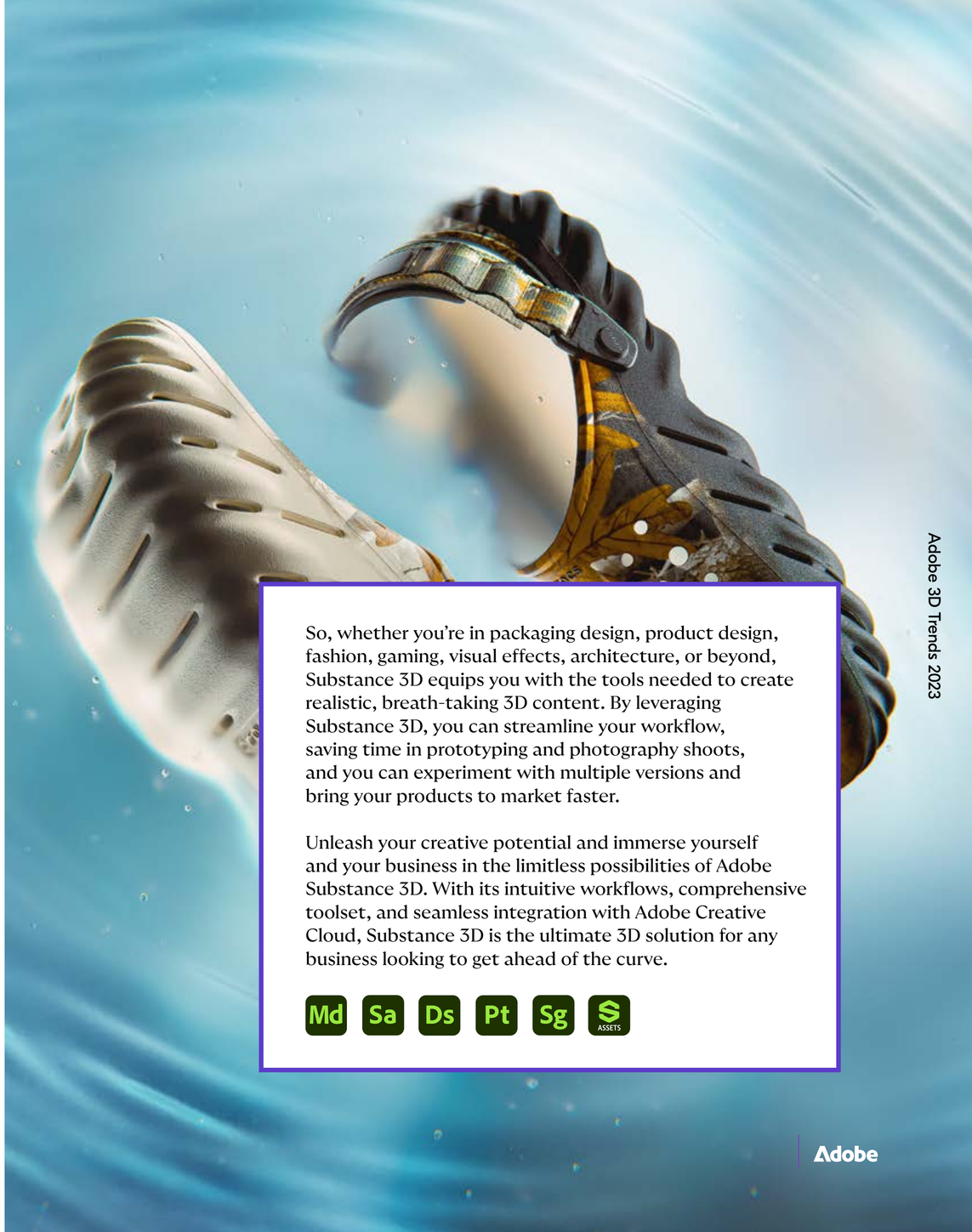
Substance 3D Assets is a comprehensive library of customisable 3D models, lights, and materials, all ready-to-use and included as part of the Substance 3D Collection. Substance 3D Assets are designed to accelerate your 3D project creation process and help deliver stunning photorealistic results. Created by material and modeling specialists and world-class 3D artists, this collection of professional content ensures amazing results and seamless integration with various 3D workflows from product design to games and VFX, to marketing and retail creative.

Substance 3D Designer

Substance 3D Designer is a powerful tool that unlocks near infinite 3D creative possibilities through node-based material design, enabling users to create seamless materials, patterns, image filters, and environment lights. Designed for technical artists seeking to craft complex stylised and photorealistic procedural materials, Designer boasts an extensive node library and seamless integration with other Substance 3D tools.

Substance 3D Modeler

Substance 3D Modeler is an innovative 3D design and sculpting app that streamlines the creation of organic and hard surface forms, as well as complex scenes, without the burden of maintaining “good topology”. It boasts seamless integration with other Substance 3D tools, both VR and desktop interfaces, and a comprehensive set of sculpting tools. It enables users to import and adapt meshes, assemble complex scenes, and experience creating in an immersive VR environment.



So, whether you’re in packaging design, product design, fashion, gaming, visual effects, architecture, or beyond, Substance 3D equips you with the tools needed to create realistic, breath-taking 3D content. By leveraging Substance 3D, you can streamline your workflow, saving time in prototyping and photography shoots, and you can experiment with multiple versions and bring your products to market faster.

Unleash your creative potential and immerse yourself and your business in the limitless possibilities of Adobe Substance 3D. With its intuitive workflows, comprehensive toolset, and seamless integration with Adobe Creative Cloud, Substance 3D is the ultimate 3D solution for any business looking to get ahead of the curve.

INFO

FOR MORE INFORMATION

To discover more about Substance 3D, please visit our website:

adobe.com/uk/creativecloud

Here you'll find further information about Substance 3D, as well as industry-leading resources and materials about creativity and design in 3D.

Or you can get in touch with the Substance 3D team.

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