“Sitting naturally” – How do we interpret this ambiguous claim? This topic was the basis for the study module “Sustainable Design Development” in the first semester of the master course “Product Design” at HTW Dresden, Saxonia, Germany. For us, it started with a fundamental investigation into the culture of sitting. Why do humans sit? How long have they done so? And why do we spend too much time sitting these days?

According to serious studies, people in contemporary society are sitting so much today that this fundamental posture does no longer support concentration or save resources. It leads instead to lifestyle diseases like back pain, fatigue and muscle tension, especially during long working hours in front of the computer.

Therefore, we did not want to approach the subject “chair” once more from a classical “designer-perspective”. In our opinion this perspective currently focuses too much on visual uniqueness and superficial trends. Our target was to concentrate on the user’s needs instead.
We placed our focus on the topic „Active Sitting“. Following the claim „The next sitting position is always the best“, everything revolves around the flexibility of a seat which allows reactivation of clamped muscles and nerves in the abdomen. Especially office chairs have come up with different solutions for this desired movability, but they mostly rely on elaborate mechanics and often have shortcomings regarding aesthetics, sustainability and price.

The analysis of different principles of active sitting showed many creative mechanics that are mostly based on two types of movement. On the one hand there is „centrifugal sitting“ which describes a radial movement around an imaginary pivot below the seat, a principle known e.g. from stability balls. On the other hand you have „centripetal sitting“, in which the pivot is located above the seat level towards the center of the body, a principle resembling a swing.

Centripetal sitting is perceived as remarkably more comfortable, because the weight of your body naturally tends to the center. Therefore, your posture does not have to be stabilized by contracting leg muscles to prevent tipping over as it is necessary in a centrifugal system.
Based on this knowledge it was our aim to find a preferably simple, aesthetical and versatile system to create a centripetally moving seat.

Central to this system is an innovative, ball bearing mounted seat made from oak wood, which allows a completely free, three-dimensional movement. The underside of the seat board is shaped spherically and lies on six ball rollers, which are often used for logistic purposes in warehouses or cargo planes.

The ball rollers are held in place by a steel construction, which also joins the three legs made from oak wood.

Additional elements help securing and limiting the movement. The seat board is shaped with an easy to grip rim and a circular indentation constricting the movement of the ball rollers in terms of deflection. Furthermore a central „anchor“ connects all moving parts and allows the user to lift the stool with only one hand.

**Concept – Bedded on spheres**
Production – Simple by modern methods

The seat is a CNC-milled 35mm board of oak wood. If necessary, it can also be CNC-turned due to its rotational symmetry. The butted legs are also made from oak wood. They are identical and can be turned easily too.

The central element consists of 3mm sheet steel. The lasercut was optimised in CAD for a material saving design and for easy further processing. To create a matching form to the spherical shape of the seat the outer parts of the sheet metal are bent up and welded together. In the same process the metal parts of the legs – made from 12mm steel rods – are welded into the gaps provided. The completed steel part gets powder-coated.

Next, the separately purchased ball rollers are inserted into the fitted holes. After that the seat board is loosely fixed by a screwed-in anchor element. For further optimisation of the packaging the wooden legs can be separated and screwed in by the user after delivery.
The overall appearance of FLOAT is characterised by minimalism, smart and simple production and a maximum of functionality. Inspired by Scandinavian influences we wanted to display the unique function of the borderless floating seat instead of hiding it behind other design characteristics.

Furthermore, we wanted to create an intentional contrast between simple design and the complexity of movement. We wished to prove that you do not need an expensive office chair with elaborate mechanics for comfortable active sitting.

This „democratisation“ of healthy sitting opens new possibilities of usage. High-quality material like oak wood and the unobtrusive appearance of this stool invite the owner of FLOAT to use it also in his private environment. Thus, he may build up a permanent emotional connection to this elegant and functional piece of furniture.

This close relationship can even be deepened by further personalisation through choosing other types of wood and different colours for coating the steel elements.
Information and Credits

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