

AUP2002 Projeto Integrado  
Profas. Denise e Sara

# Detalhamento do Produto

# Tipos de Desenho

## → Conceção

são desenhos mais soltos, que visam apresentar rapidamente as ideias para discussão e seleção no grupo

## → Desenvolvimento

**após amadurecimento das ideias propostas, o desenho evolui para algo mais detalhado, com mais vistas e inclusão de outras informações.**

**Nesta categoria também temos os desenhos esquemáticos e de situações de uso.**

## → Comunicação

Pode ser dividido em Renderings ou desenhos de apresentação formal ,  
Desenhos técnicos para comunicação da estrutura do produto e Desenhos técnicos de fabricação

# Outras etapas de detalhamento do produto

## → **Estereotomia do produto**

partes e componentes do produto

materiais e estrutura do produto

encaixes, junções

## → **Comunicação**

perspectiva explodida

memorial descritivo

Desenhos técnicos

Portfolio S  
Product Design

# RESEARCH METHODS FOR PRODUCT DESIGN

Alex Milton  
& Paul Rodgers



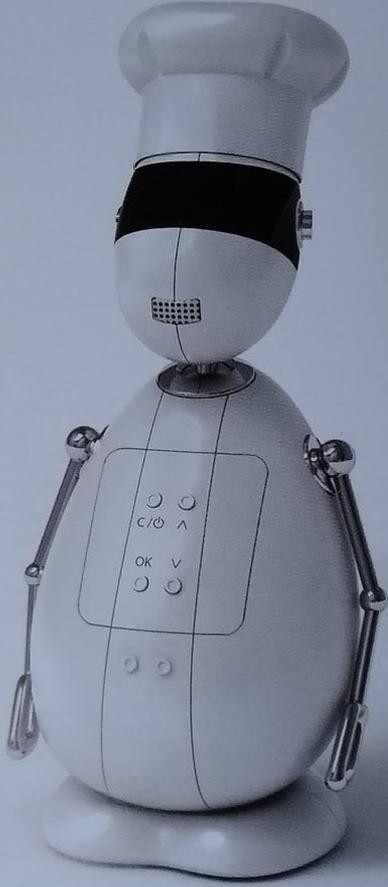
**Product  
Design Now:  
Renderings**

Cristian Campos

**O que eu quero que meu produto faça  
(como vai ser a interação do produto com os  
usuários e com o ambiente)**

# LeChef

Anna Åberg (2007)  
anna@aberg.biz



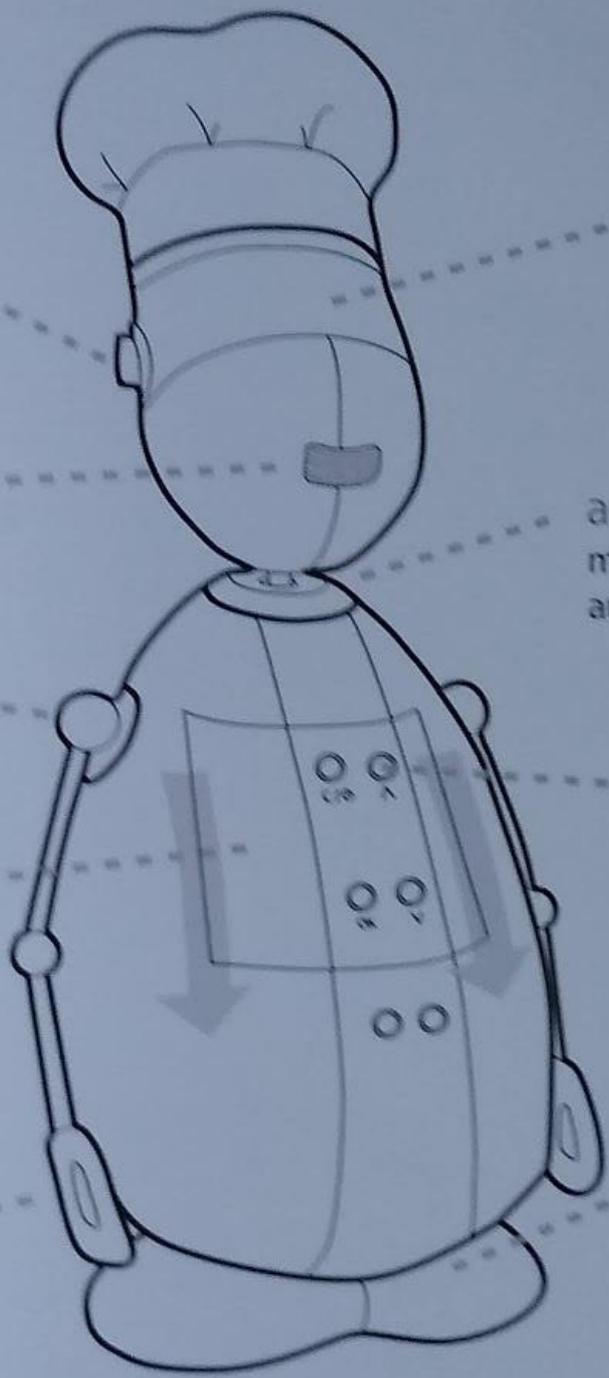
microphones in the ears  
navigation by voice

loudspeaker

active arms  
moveable by a ball-  
and-socket joint

display  
recipe will be displayed,  
covered by a lid when  
not being used

moveable hands



eyes  
visor with motion detector

active head  
moveable by a ball-  
and-socket joint

4 buttons  
⏻/cancel, OK,  
navigate up and down

active body  
the body moves around  
both rotating and tilt

# **Estereotomia do Produto**

# **Partes e componentes do produto**

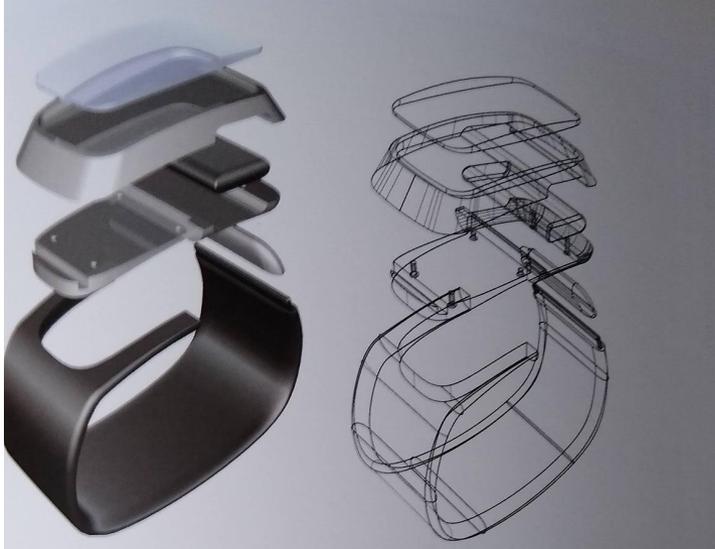
# Partes principais do produto

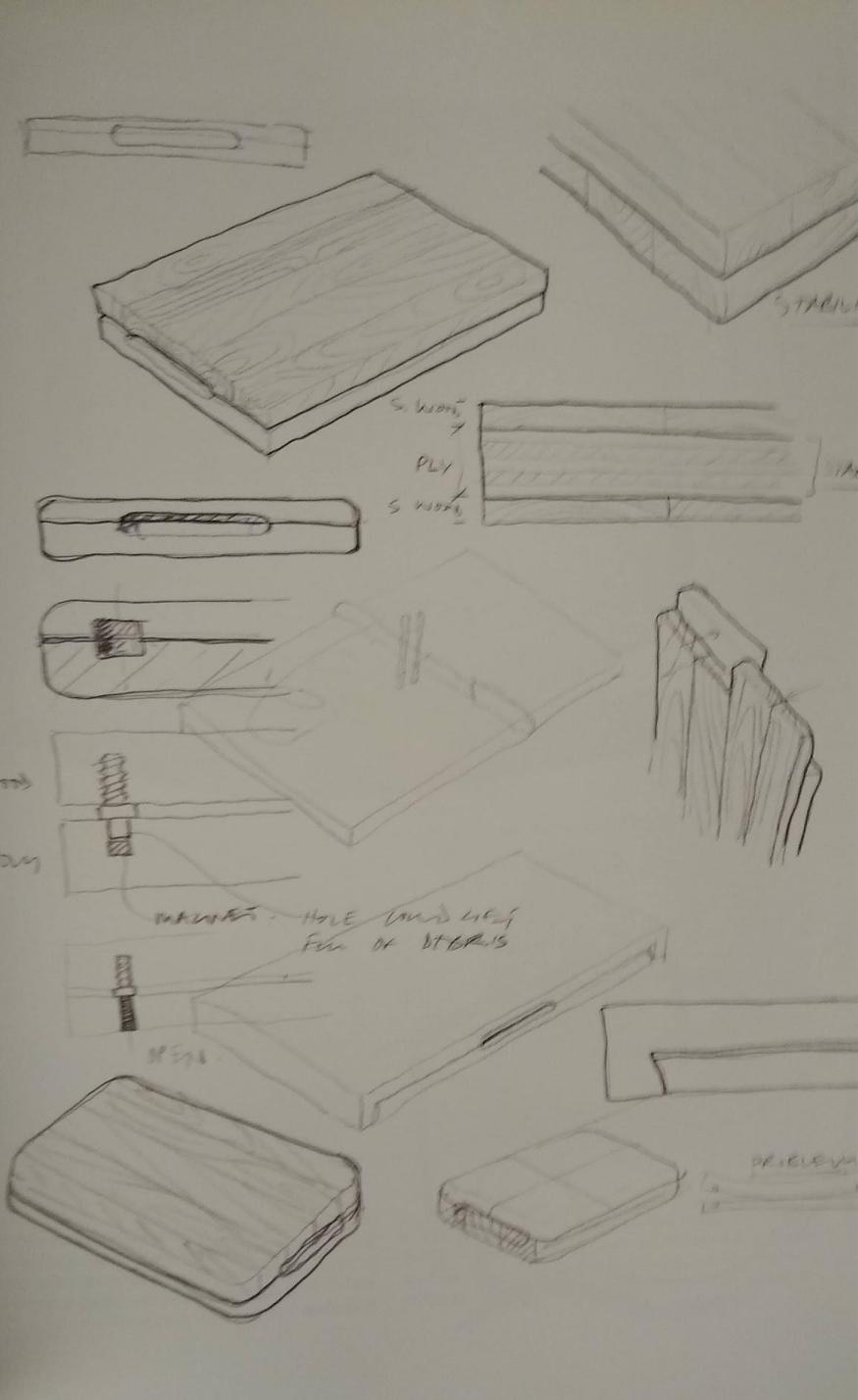
## BMW MINI\_Motion

Fuseproject (2006)  
www.fuseproject.com  
info@fuseproject.com



The collection of BMW MINI\_Motion accessories (among them the wrist watches seen in this page) was simultaneously designed for the launch of the MINI Cooper and developed in collaboration with brands like Puma and Samsonite. Its objective has been to revolutionize the functionality of the products that are part of the range, taking "movement" as a conceptual starting point. BMW MINI\_Motion includes—apart from this line of products—the type and design of the packaging. BMW MINI\_Motion both complements and extends the brand of MINI Cooper.





two-in-one chopping board made from mold-  
polyene and beech wood, which allows the  
different types of food without mixing  
matting flavors. The two boards are  
together by a patented magnetic system  
ables easy separation for flexible use and  
Dutch Design Plus award

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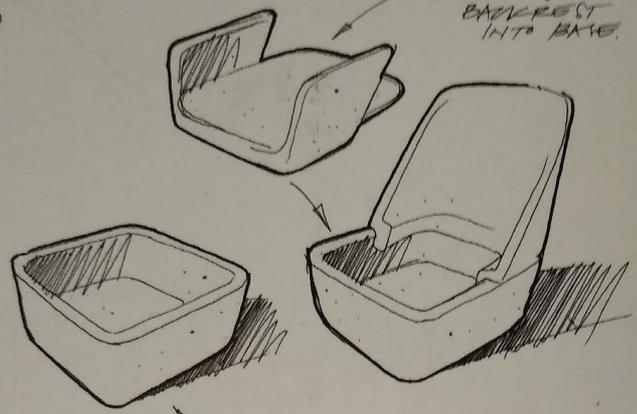
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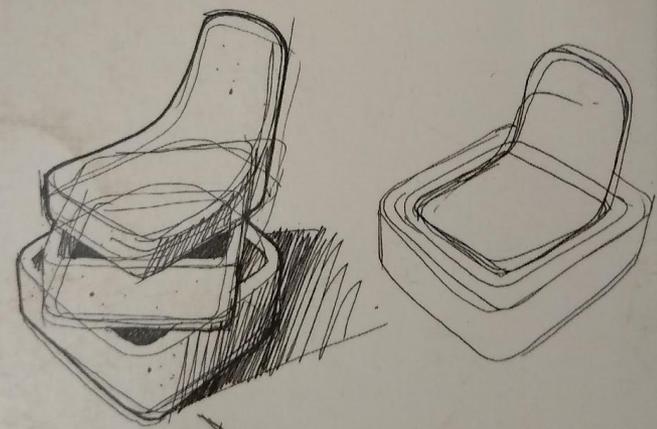
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SEAT PAN &  
ARMS LOCK  
BACKREST  
INTO BASE.



BASE CAN ALSO BE FOLD STOOL  
& L SPREADS W/ DIFF. TIP.



MOUNTED  
CONCENTRIC  
& THEN  
STUCK ON  
TOP OF EACH  
OTHER.

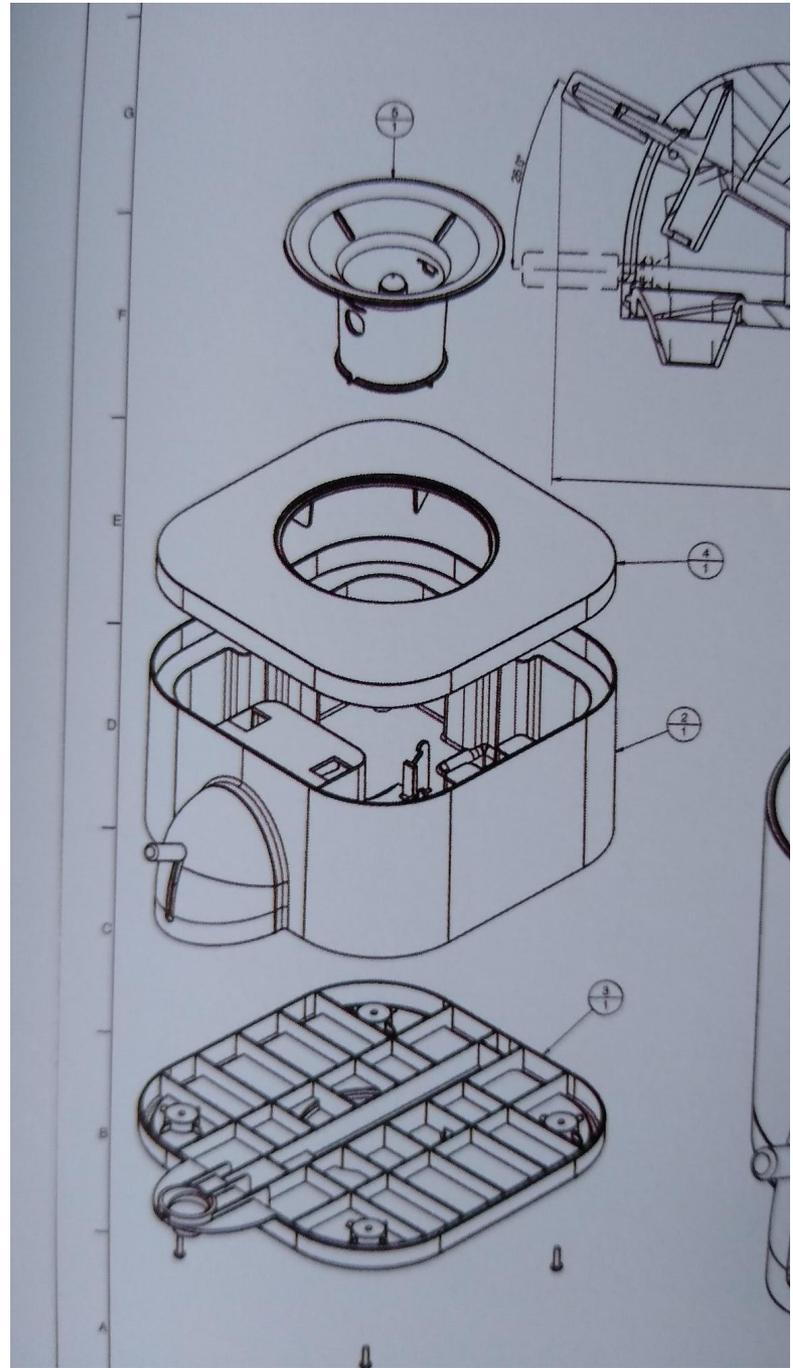
# Easy

Yariv Sade, Arik Yuval/Igloo Design (2008)  
www.igloo-design.com  
info@igloo-design.com



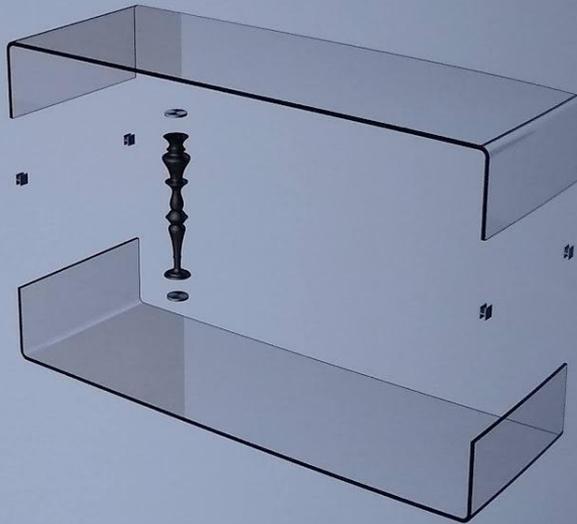
The Easy water dispenser has been designed to hold up to 19 standard 5-gallon bottles of water. It provides a simple, easy system that allows for easy filling and it functions in accordance with the communicating vessels.

While the product name is Easy, its design is not. Not only did Easy have to exceed the requirements of its previous models, it also had to be made using ABS (acrylonitrile butadiene styrene), which is durable yet also visually attractive.



# Spindle

Brad Ascalon Studio NYC (2008)  
www.bradascalon.com  
info@bradascalon.com



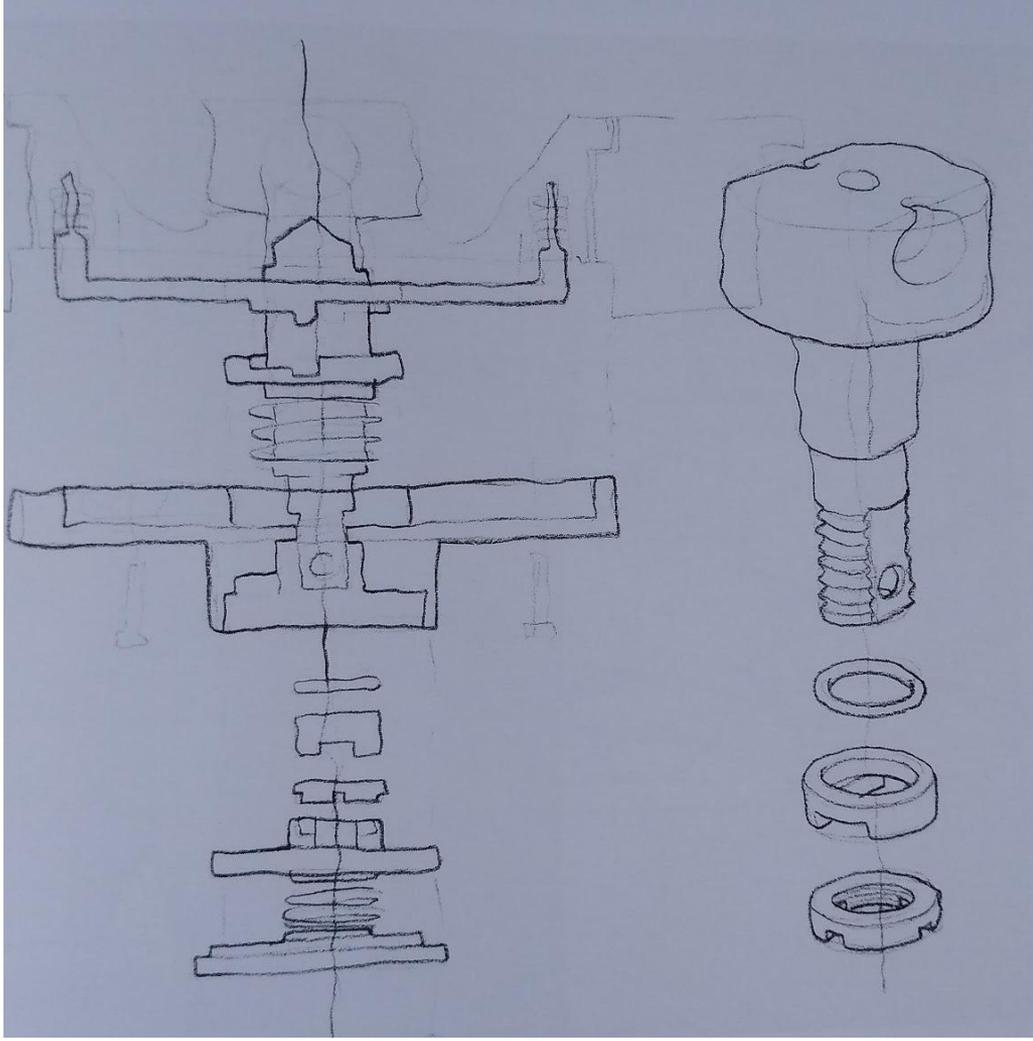
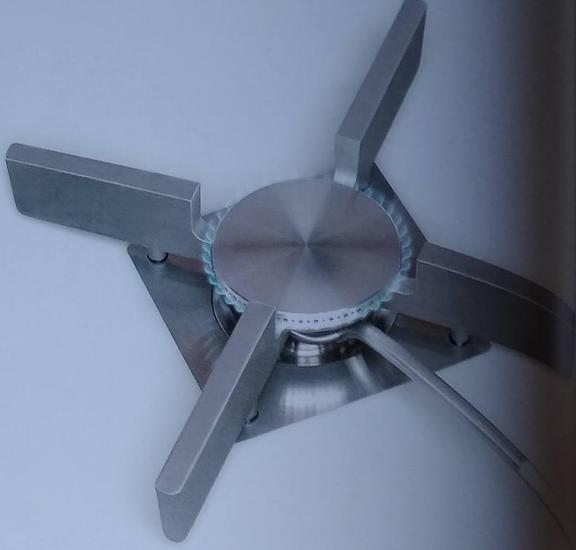
The Spindle table is a tribute to two opposing styles: minimalism and ornamentalism. The juxtaposition is not trying to be ironic or humoristic, but respectful to the history and the importance of both styles. Brad Ascalon Studio NYC considered dozens of possibilities and worked on a multitude of sketches, small models, and renderings before opting for the definitive model. The table has been made from glass, 0.39 inches thick, lacquered wood, and steel. Measurements are 14.6 inches high, 49.2 inches long, and 16.9 inches wide.



**Pensando a estrutura**

# GAS

Adrian and Jeremy Wright (2007)  
[www.designwright.co.uk](http://www.designwright.co.uk)  
[studio@designwright.co.uk](mailto:studio@designwright.co.uk)





**Comunicando a estrutura**

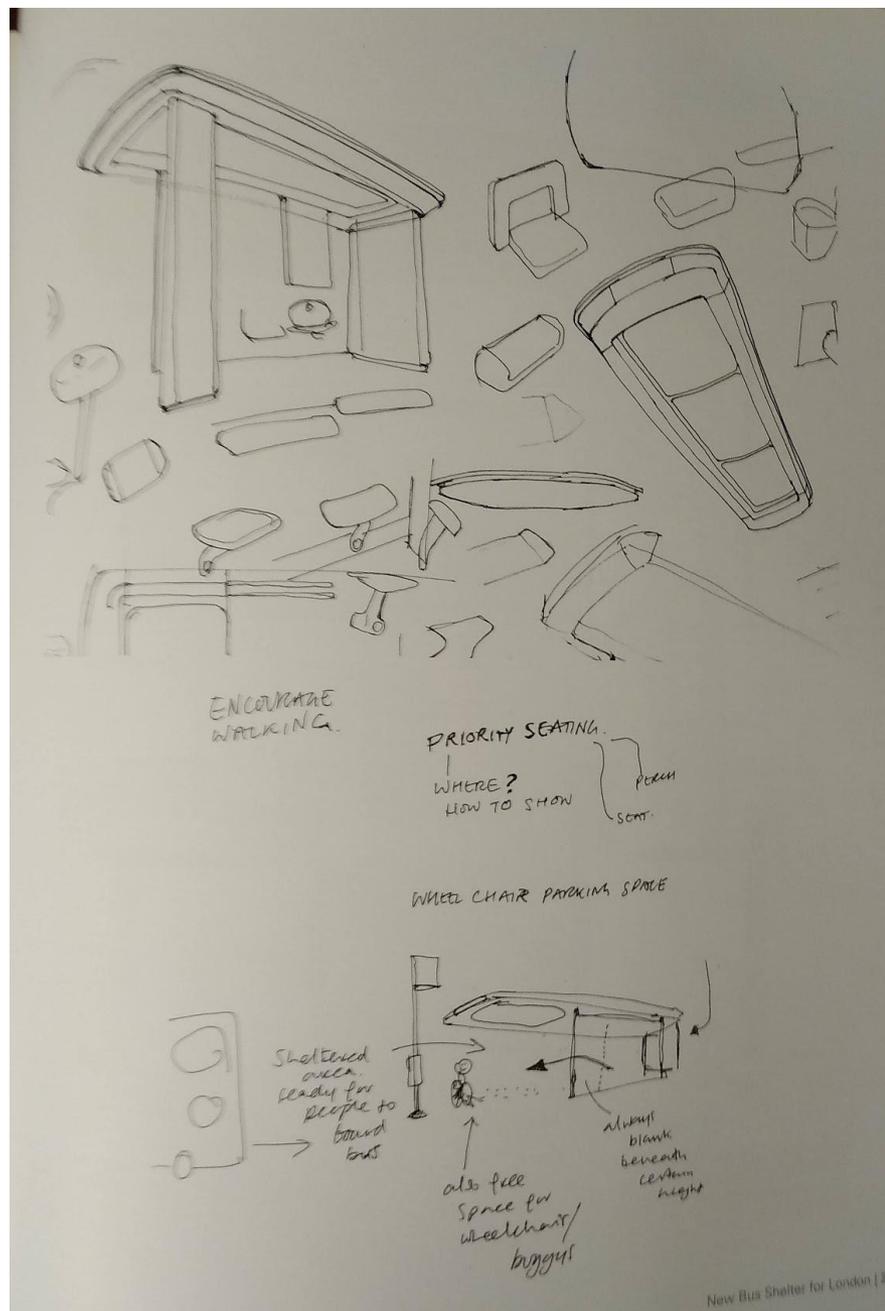
# New Bus Shelter for London

Jedco (2008)  
www.jedco.co.uk  
info@jedco.co.uk



When the coordinating London public transport company launched a contest for the design of a new bus stop, Jedco decided to enter. The shelter had to meet a series of requirements: it had to be secure, informative, and flexible. Jedco incorporated solar panels, ticket dispensers, and an independent lighting system

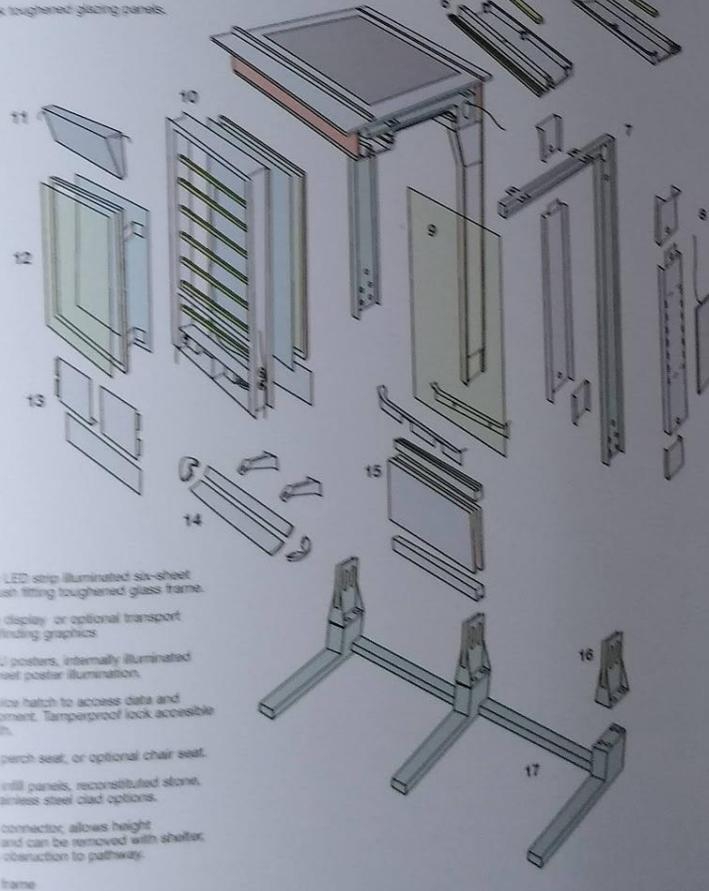
into its design. The selected building materials were chosen because they were durable, much less susceptible to being destroyed by theft and vandalism. Many of Jedco's innovations have been incorporated into the city's bus



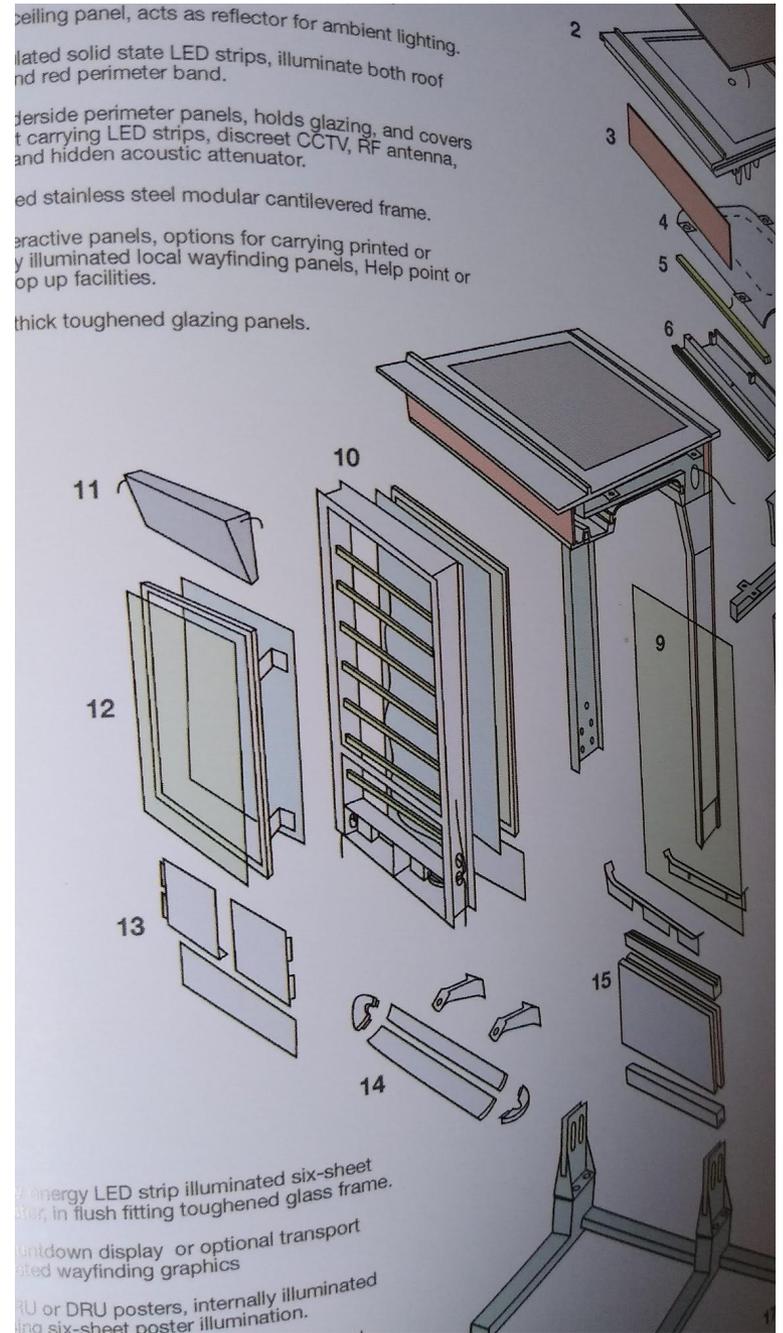
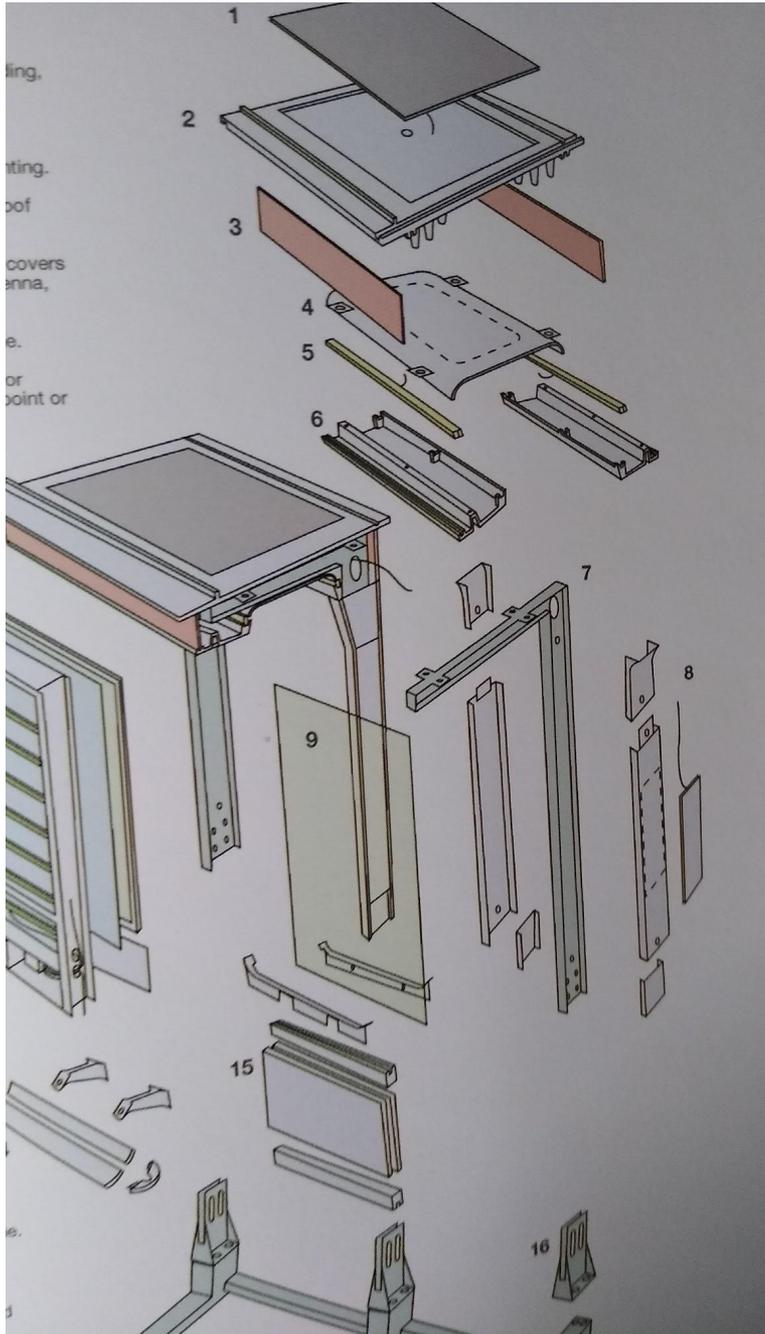
# Construction - Sketch Details

## Typical 2 Bay BTK Shelter

- 1 Mono-crystalline photovoltaic panel, 180 Wp, flush fitting to roof for ease of cleaning.
- 2 Modular roof carcass, recycled structural HDPE moulding, with facility for glass panel, and rain deflector strips.
- 3 Translucent illuminated red perimeter band panels.
- 4 Internal ceiling panel, acts as reflector for ambient lighting.
- 5 Encapsulated solid state LED strips, illuminate both roof ceiling and red perimeter band.
- 6 Roof underside perimeter panels, holds glazing, and covers roof duct carrying LED strips, discreet CCTV, RF antenna, cabling and hidden acoustic attenuator.
- 7 Fabricated stainless steel modular cantilevered frame.
- 8 Side interactive panels, options for carrying printed or internally illuminated local wayfinding panels, Help point or QR code top up facilities.
- 9 6.0mm thick toughened glazing panels.



- 10 Low energy LED strip illuminated six-sheet posts, in flush fitting toughened glass frame.
- 11 Countdown display or optional transport related wayfinding graphics.
- 12 DRU or DRU posters, internally illuminated using six-sheet poster illumination.
- 13 Height service hatch to access data and other equipment. Tamperproof lock accessible from beneath.
- 14 Adjustable perch seat, or optional chair seat.
- 15 Recycled steel grill panels, reconstituted stone, or stainless steel clad options.
- 16 Height adjuster, allows height adjustment and can be removed with shelter, leaving no obstruction to pathway.
- 17 Stainless steel frame.



# Dyson vacuum cleaners



The Dyson DC01 vacuum cleaner featuring Cyclone™ technology.

## Introduction

In 1978, designer and manufacturer James Dyson noticed how the air filter in his spray-finishing room was constantly clogging with powder particles (just like a vacuum cleaner bag clogs with dust). So he designed and built an industrial cyclone tower, which removed the powder particles by exerting centrifugal forces 100,000 times greater than gravity.

## Objective

Having produced this innovative solution, Dyson began to consider other applications for it. He settled on exploring whether the same principle might work in a vacuum cleaner.

## Methods

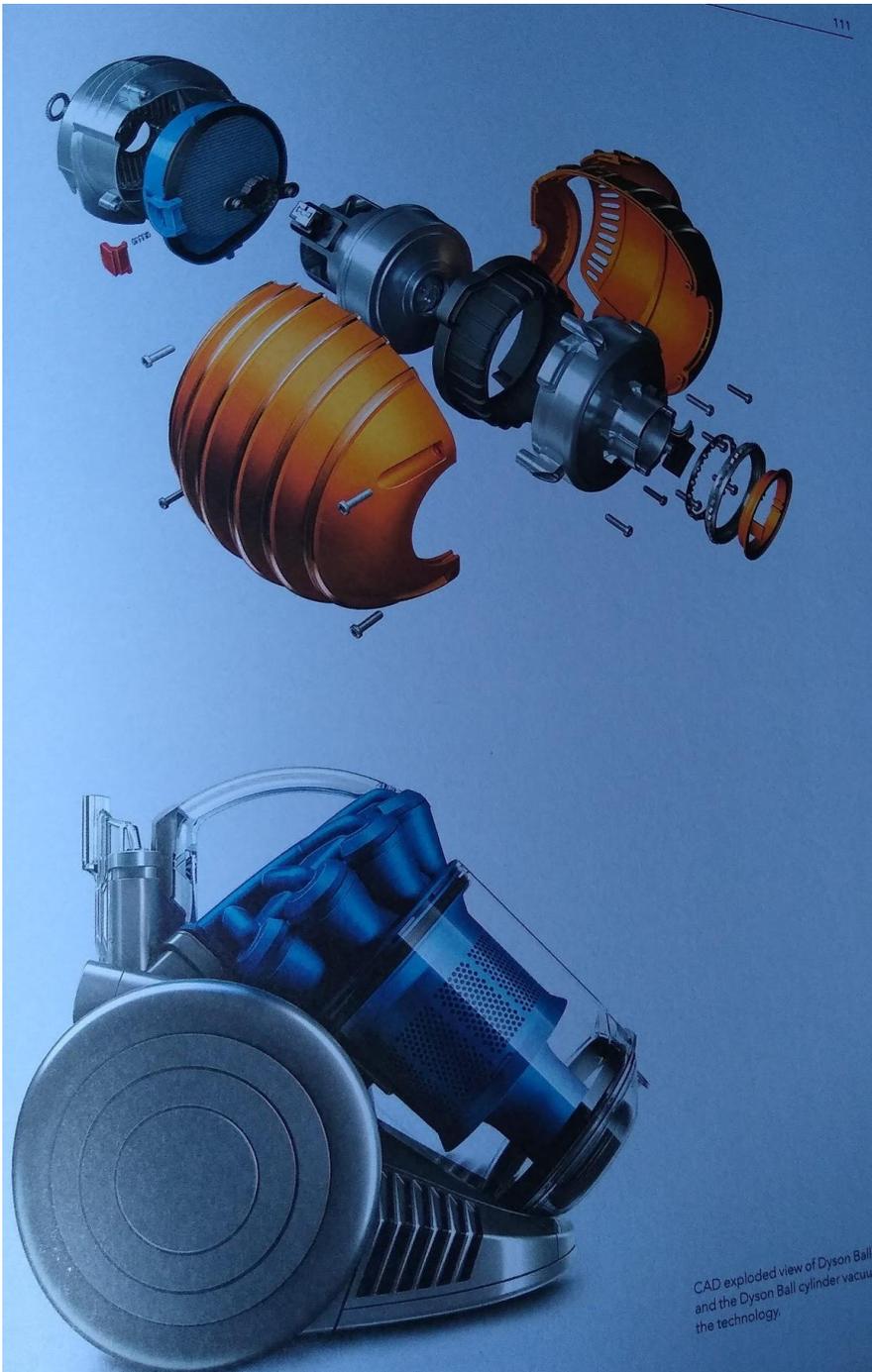
Five years and 5,127 iterative models later – quick-and-dirty prototypes, mock-ups, sketch and appearance models – the world's first bag-less vacuum cleaner arrived. Uninterested in new technology and wedded to vacuum bags (worth £250 million every year), major manufacturers turned Dyson and his invention away. Dyson eventually licensed his design in Japan, the home of high-tech. The Japanese loved the pink G-Force and, in 1993, the royalties allowed Dyson to manufacture a machine under his own name, the DCO1.

## Results

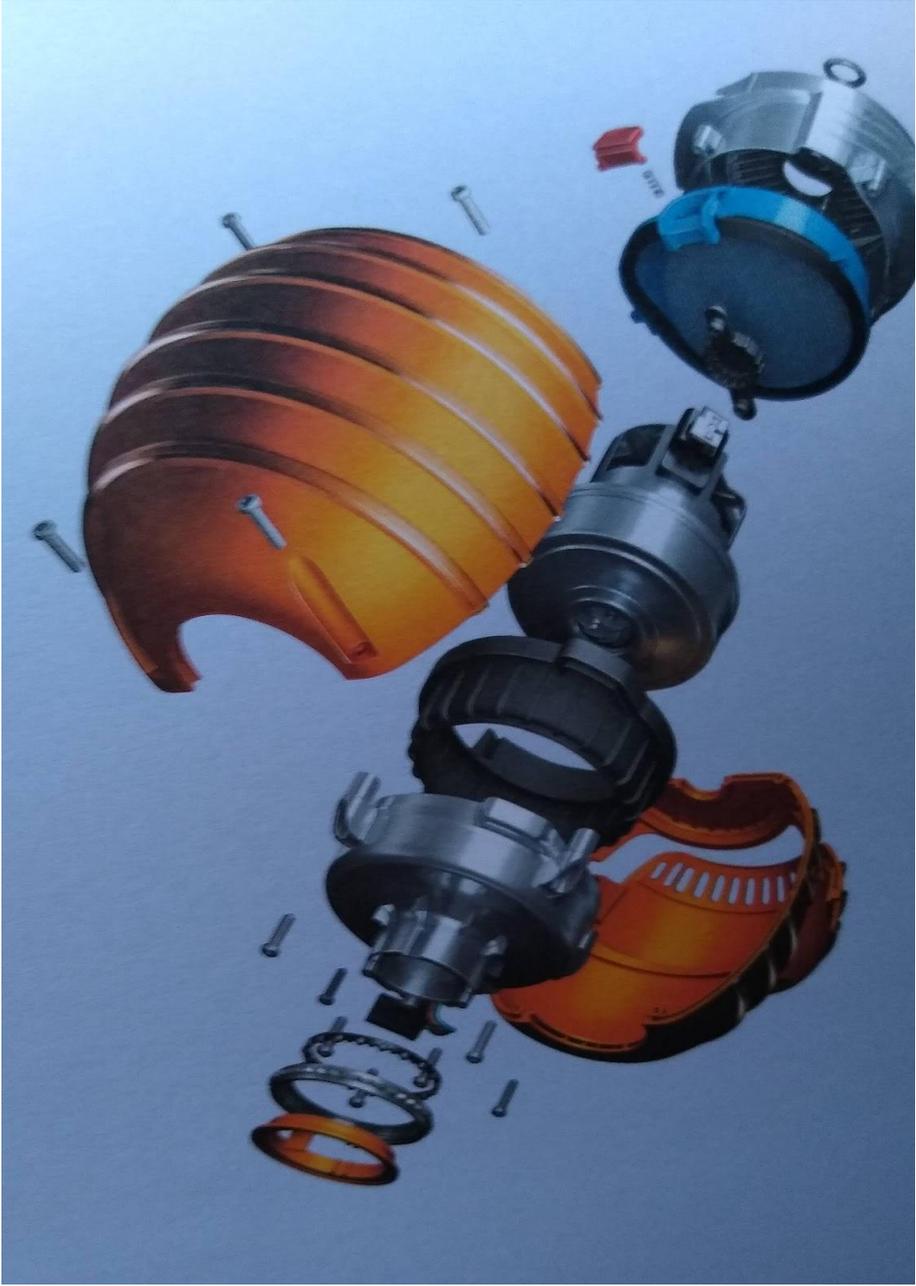
An inventor pays substantial fees to renew patents every year. Though Dyson brushed with bankruptcy during the development years, it was money well spent. In 1999, after a lengthy court battle, Hoover was found guilty of infringing Dyson's patent. Other manufacturers, unable or unwilling to develop their own vacuum cleaners, still try to copy Dyson technology, to no avail.

James Dyson and his engineers continue to improve existing Dyson technology through extensive user trials and materials testing. Their machines now have smaller multiple cyclones, which create greater centrifugal forces, capturing more microscopic dust. After observing that the wheels on a normal upright vacuum cleaner run on a fixed axle and so can only move in straight lines, Dyson decided to address this problem too.

The resulting design, developed through numerous models and prototypes, was a vacuum cleaner that rides on a single large ball, pivoting on a single point, and allowing it to go in any direction. The Dyson Ball successfully eliminates the struggle of manoeuvring a vacuum around furniture and other obstacles, allowing the user to control the movement – the other way around.



CAD exploded view of Dyson Ball™ and the Dyson Ball cylinder vacuum the technology.



# Partes do produto

- **Estrutura**
- **Vedação**
- **Elementos de fixação**
- **Sistemas**

## **Estrutura**

Suportam, orientam e dissipam a carga aplicada ao produto em uso ou em repouso

## **Vedação**

Não tem função estrutural, serve apenas para separar as partes do produto do meio externo ou entre si (pode haver peças de vedação que também são estruturais)

## **Elementos de fixação**

responsáveis pela união provisória ou permanente das partes do produto ou seus sistemas

## **Sistemas**

Partes que executam o funcionamento do produto (elétrico/eletrônico, hidráulico, mecânico, pneumático)

# Jawbone

Fuseproject (2008)

[www.fuseproject.com](http://www.fuseproject.com)

[info@fuseproject.com](mailto:info@fuseproject.com)

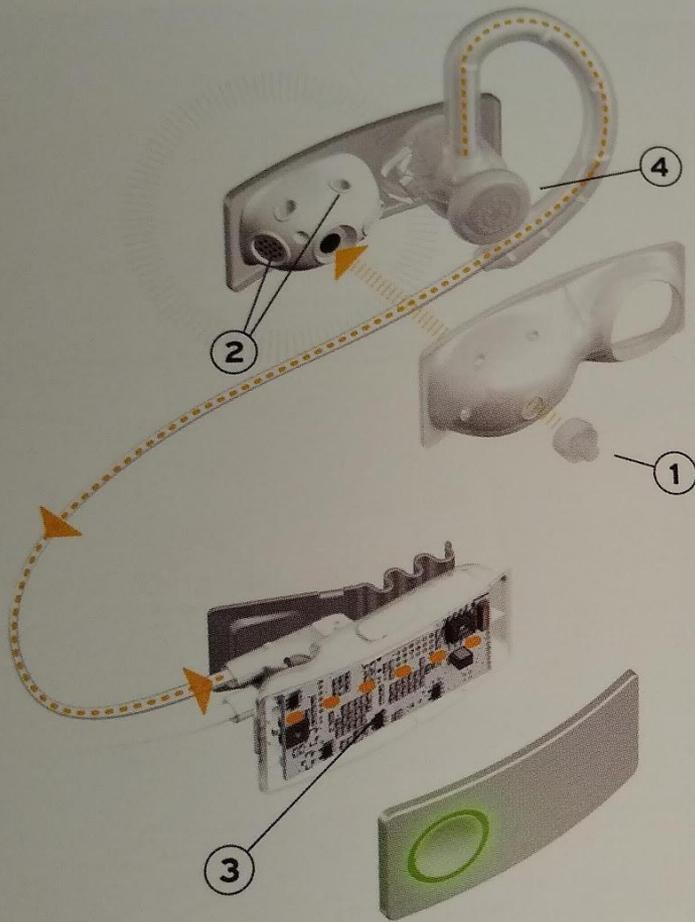


Because of its noise suppression technology, the Jawbone earphones can be used in the noisiest environments. Comfortable and lightweight, the Jawbone has a stylish design that transforms it from a technological device and into a fashion accessory. Directed at a market sector interested in new technology,

but also in avant-garde design, Jawbone was a benchmark in the high technology market. Jawbone was awarded in 2008 by the iF Product Design Award of the Sparks Awards, and was named Best Bluetooth Headset by the iF Product Design Award the same year.

**Process**

- press on cheek when speaking
- cancel out background sounds
- (clip) subtract unwanted
- speech, allowing it to stand out from background



Two streamlined buttons control all the functions of the headset and are discretely hidden underneath the outside shield. The shield itself is textured in a sound reflective relief.

*Aussor*

# Elementos de fixação

## **União Provisória**

parafusos, anéis, engates, encaixes

## **União Permanente**

cola, rebite, prego, solda

## **Em brinquedos**

Pensar nas partes que não devem ser acessadas pelas crianças, tais como sistemas mecânicos, pilhas, componentes internos.

Para produtos que devem ser montados/desmontados pela criança: pensar na força necessária para montar/desmontar e no sistema adequado para as habilidades motoras para a idade.

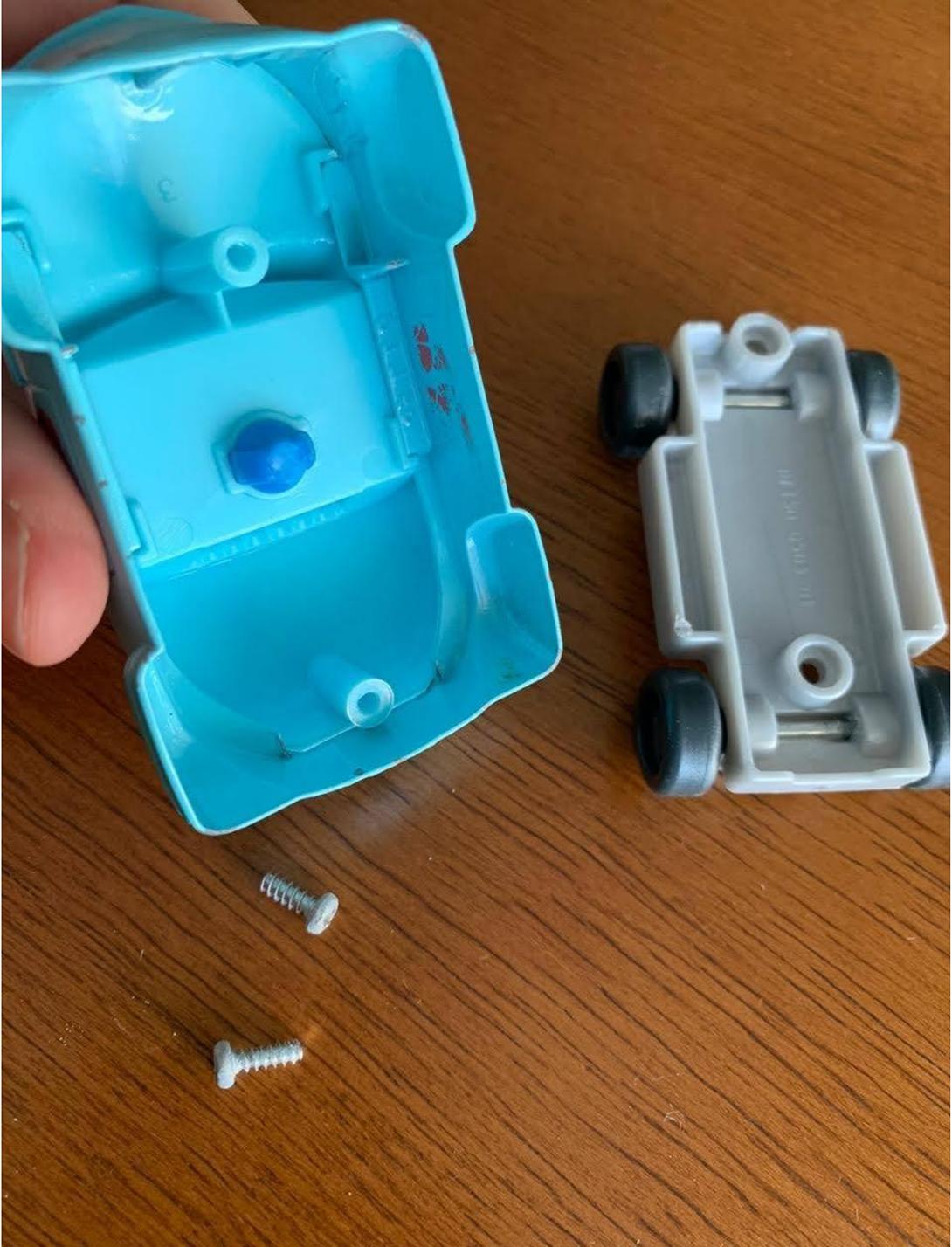
Pensar no produto em uso e para guardar (se necessário) e na manutenção e troca de sistemas (como pilhas e baterias)

# Desmontando brinquedos

## Contribuição da Cris Brondani e do Rogério Wittmann

























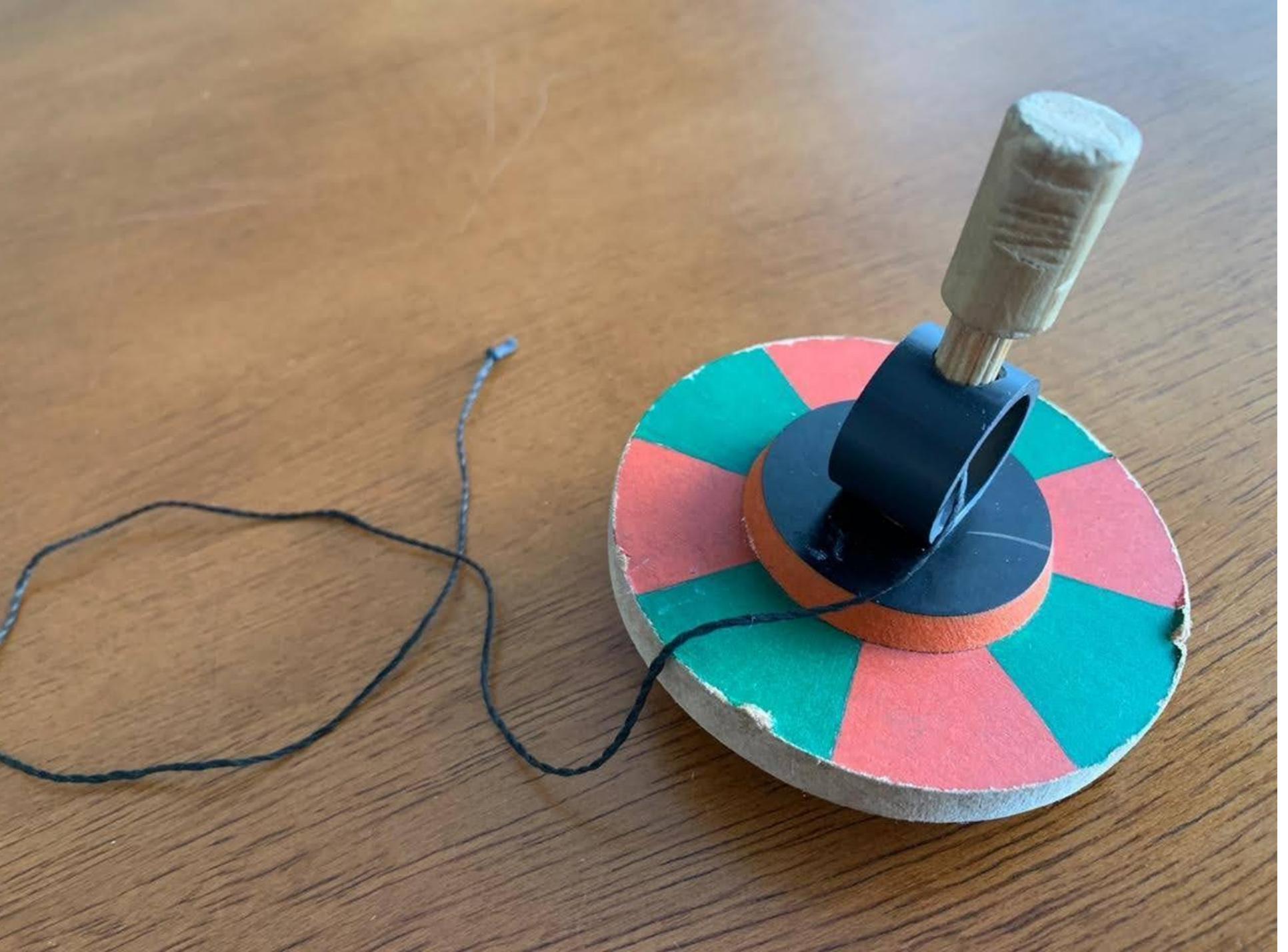






























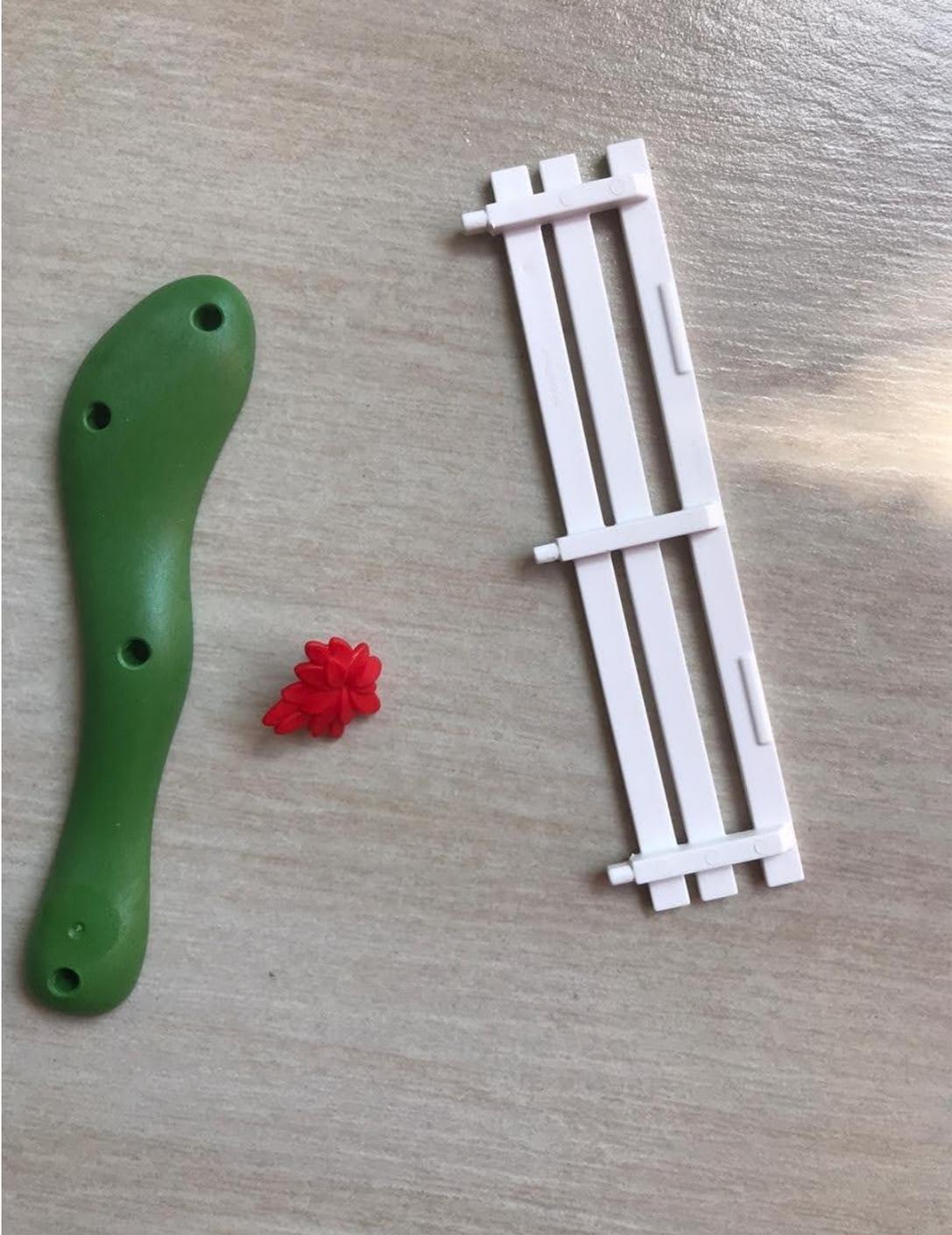


















Hello Kitty



BRANKY















NewArt TOYS®

# Atividade de hoje

- Pensar as partes e materiais do produto
- Desenhar o produto desmontado (sketch)
- Pensar nos elementos de fixação
- Pensar na linguagem do produto e aplicação de cor/acabamentos