community garden hackathon

In april 2017 são paulo lab has organized a collective marathon to design and prototype a pedal powered shreder machine. The idea to do it was inspired by a challenge proposed during open source for circular economy days berlin in 2016, but not accomplished during the event.

For organizing the hackathon we had the support from two grants in brazil and we choose to do it on a community garden (bons frutos) on the periphery of Santos.

We then mapped the local talents and got a great team of makers together: between students, engineers, and technicians. The group managed to build it by hacking an used electric shredder machine and combining it with a system of pulley and belt together with an used bicycle. It is already helping the local farmers and it works!

organization:

são paulo lab

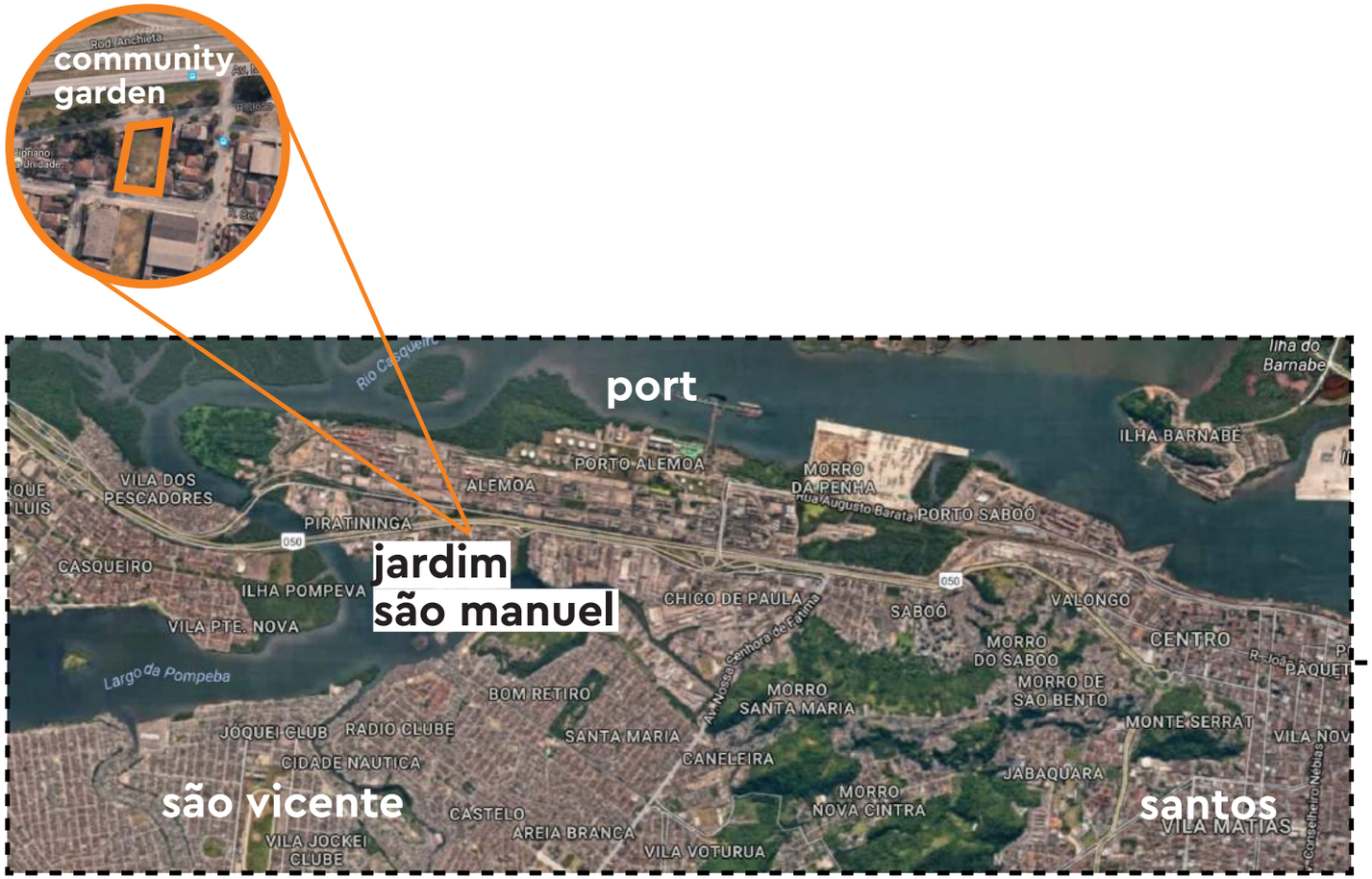
bons frutos
community garden

sustainable practices in place:
rainwater harvesting
aquaponics
organic fertilizer
composting
kitchen oil recycling

the problem:
composting takes too long
too much organic waste from triming
no electric power source

1000 m2
40 beds
3 farmers
4 volunteers
4000 beneficiaries

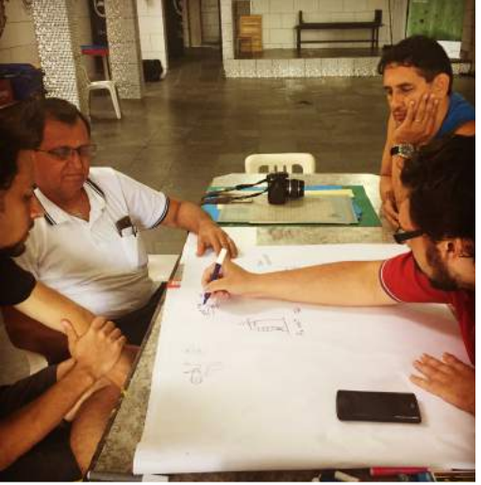
location


community garden
port
jardim são manuel
são vicente
santos
ILHA BARNABÉ
PORTO ALEMOA
ALEMOA
MORRO DA PENHA
PORTO SABOÓ
VILA DOS PESCADORES
PIRATININGA
CASQUEIRO
ILHA POMPEVA
VILA PTE. NOVA
CHICO DE PAULA
SABOÓ
VALONGO
CENTRO
MORRO DO SABOO
MORRO DE SÃO BENTO
MORRO SANTA MARIA
BOM RETIRO
JÓQUEI CLUB
RADIO CLUBE
CIDADE NAUTICA
SANTA MARIA
CANELEIRA
JABAQUARA
MONTE SERRAT
VILA NOV
CASTELO
AREIA BRANCA
VILA VOTURUA
MORRO NOVA CINTRA
VILA MATIAS
VILA JOCKEI CLUBE
Largo da Pompeba

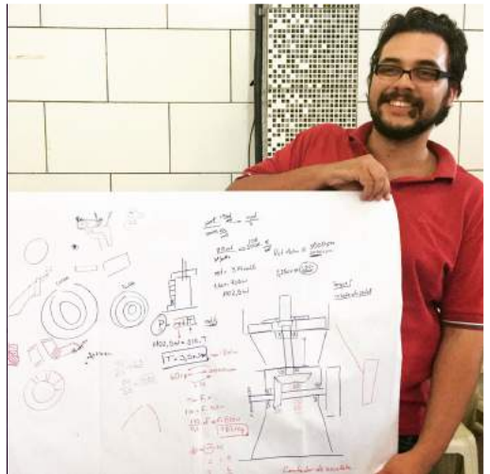
brazil
sao paulo
rio
santos
Brazil
Bolivia
Paraguay
Suriname
Boa Vista
Macapá
Belém
São Luis
Manaus
Fortaleza
Teresina
Recife
João Pessoa
Aracaju
Salvador
Brasília
Goiânia
Belo Horizonte
Ribeirão Preto
Rio de Janeiro
Curitiba
Florianópolis
Porto Alegre
Asunción
Córdoba
Santa Fe
La Paz
Cochabamba
Santa Cruz de la Sierra
Salta
San Miguel de Tucumán

the challenge

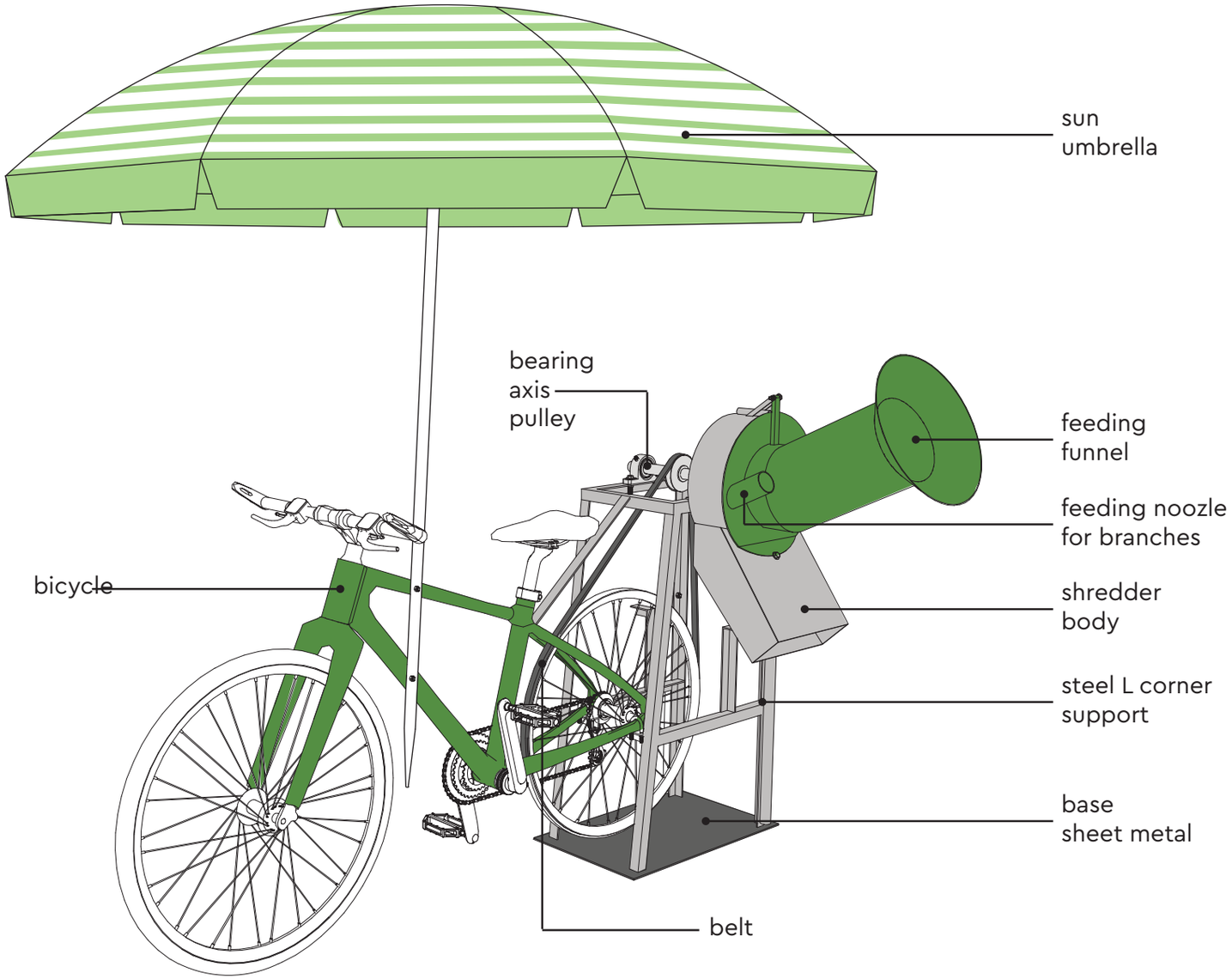
2 weekends
9 makers
18 hands
2 mentors =
1 pedal powered shredder machine



process



outcomes: 1. papa-galhos > zweigfresser



sustainable urban agriculture tool for circular economy

- **built from scraps (upcycling)**
- **zero energy consumption**
- **carbon free emission**
- **composting boost**
- **stimulates exercising**
- **easy to use, playful & fun**

2. step by step DIY

informações gerais

peso aprox. 53 kg

dimensões L170 x P90 x H126 cm

nível avançado

tempo estimado de construção 3 dias

custo estimado R$ 803*

ferramentas
martelo, chave peugeot (alicate), chave inglesa, chaves allen, chave de boca, chave catraca, chave de fenda, chave phillips, nível manual, paquímetro, trena, esquadro, régua, riscador com ponta (ou lápis), caneta para marcador permanente, máquina de solda, máscara de solda, picadeira de solda, lixadeira elétrica, furadeira, morsa de bancada, lima, talhadeira, punção de bico, chapéu e óculos proteção

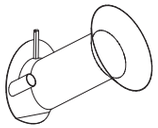
materiais
01 bicicleta usada
01 triturador TR 200 Trapp usado (ferro velho)
01 guarda sol 1.80m diâmetro
6m cantoneiras 1" de abas iguais esp. 1/8" (ferro velho)
1,5m tubo galvanizado 3/4" (ferro velho)
1m² chapa xadrez aço carbono esp. 1/8" (ferro velho)
04 ponteiras de borracha para o tubo de 3/4"
02 rolos de grip para raquete de tênis
10 lixa de metal 100 e 150
04 tinta spray para metal
10 discos de corte p/ lixadeira
02 discos desbaste p/lixadeira
1,5kg de eletrodo 6013 x 2,5mm
01 lubrificante multiuso WD-40
01 fluido p/ usinagem machão
01 lata de primer automotivo

peças e elementos

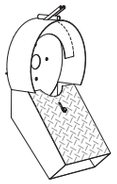
01 bicicleta usada

01 guarda-sol 180 cm diâmetro

01 funil de alimentação reaproveitado de trituradora trapp tr200

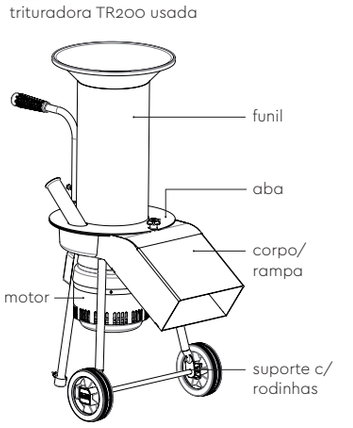


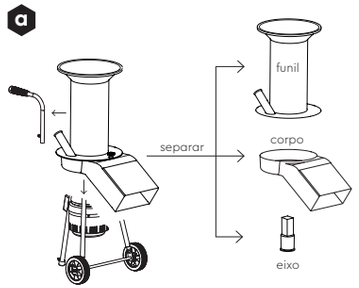
01 corpo reaproveitado de trituradora trapp tr200



Papa-Galhos

adaptação trituradora trapp





a desmontar a trituradora TR 200: desparafusar e guardar o funil de alimentação, o corpo do triturador e o eixo.

b fazer consertos e reparos necessários na carcaça com primer automotivo.

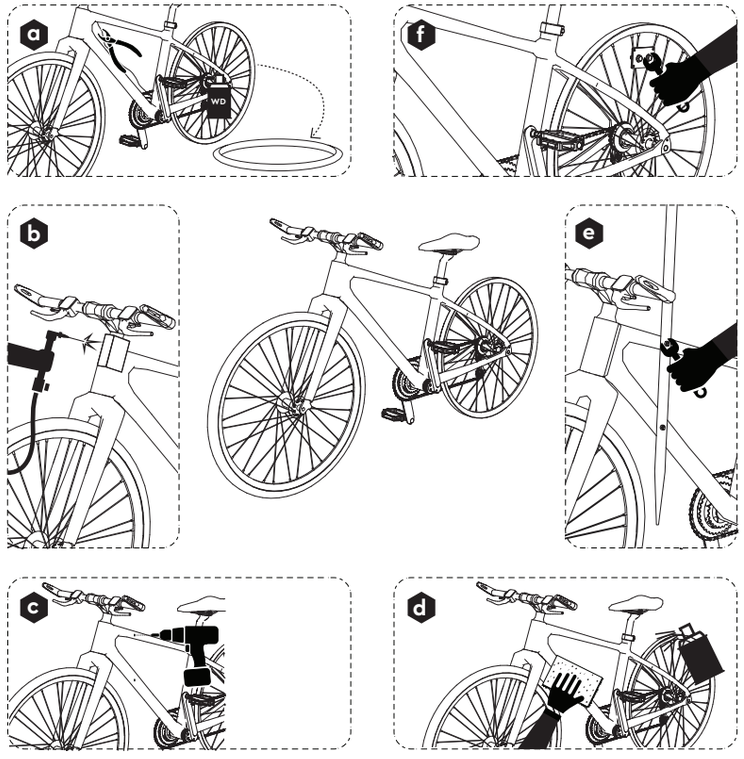
c cortar a rampa de dejetos do triturador e soldar no corpo novamente girando 180°. Refazer a tampa com chapa.

d lixar e pintar com tinta spray para metal prateada.

e adaptar a aba do funil para o ângulo do corpo

f cortar o funil de alimentação a 45°: fazer um molde de cartolina (traçado de caldeiraria) riscar a peça e serrar. soldar o funil novamente na aba, lixar e dar acabamento pintando com tinta spray para metal.

adaptação da bicicleta



a recauchutagem necessária na engrenagem (passar lubrificante WD-40, retirar o pneu traseiro, remover freios)

b travar guidão com cantoneira soldada no encaixe

c furar o quadro da bicicleta e o tubo do guarda sol

d lixar o quadro, pintar com tinta spray e deixar secar

e instalar o cabo do guarda sol, fixando com parafusos m6 x 70mm

f fixar chapas contra-peso na roda traseira com parafusos m5 x 10mm

Papa-Galhos

3. user's manual & sign

4. logo designed by local children

results: huge sucess with children!
potential educational tool

results: 3 empowered urban farmers!

makers team

credits:

original challenge proposition:
dax (zero waste lab)
osce days 2016

design co-authors and construction team:
cesar branco
claudio jardim
ocelmo barros
bruno matinata
juliana braz
henrique machado e silva
diego rizzo vieira
gabriela ortega
maria augusta bueno

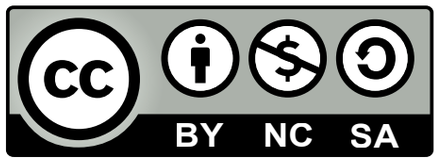
mentors:
cesar branco
(mechanics)
diego rizzo
(composting)

tips and cues:
manolo lousada
(jabuca junkyard)
nivaldo ursini
(najatec workshop)
kalenin (crie aqui
makerspace)

cutting and welding:
claudio jardim
ocelmo barros

bons frutos community garden:
vilma
cleusa
ilda

support:
grant from labx santista/
instituto procomum
community innovation prize
brazil foundation



who we are

• São Paulo Lab is an incubator for civic innovation

• we bring together citizens, students and designers to co-create and build collective sollutions to urban challenges

• we promote experimentation with high and low maker's techniques and a learn by doing education

• we share the results on our open source platform, so others can implement them in their own communities anywhere around the brazil and other parts of the world

• our projects are adaptable and beta, so people can improve it, build upon it and share it again

• we aim at creating a common repertoire of ideas and procedures for those who wish to become agents of change

• our moto is: do it yourself or do it with others, getting our hands dirty for the commom good is above all a lot of fun!

to learn more:

são paulo lab

www.saopaulolab.cc

open source collaborative design