



BIJI BIJI DESIGN SDN BHD (1050659-D)
MEREKA INNOVATIVE EDUCATION (1239397-T)
TAYLOR'S ME.REKA MAKERSPACE
Lot 1-3, Level G1 Publika Shopping Gallery,
Solaris Dutamas, Jalan Dutamas 1, Kuala Lumpur 50480
HQ Phone: +603 6419 4755 | +603 6419 4756

24th March 2020

Press & Public Statement:

Open Source Collaborative Effort On Decentralized Production Of Face Shield For Covid-19 Front Liners

Based on input from front liners, a critical shortage of Personal Protective Equipment (PPE) has been identified, with one of the items being the face shield. The face shield is used mainly by front liners, especially the police, military, volunteering personnel, doctors, nurses, hospital staff, screening officials, cleaners and many others. The face shields are used along with N95 or surgical masks by front liners for full-face protection. The estimated need for this equipment is up to 40,000 units per month per hospital alone.

The following partners are coming together to organize a decentralized production effort, in line with open source principles, in order to aid with the supply of the face shields:

- Me.reka
- Taylors University
- Taylor's University Me.reka Makerspace (TUMM)
- Biji-biji Initiative

The decentralized production plan is based upon the initial designs of the 3D printing community led by Nurfaiz and Cheng Huat from 3D Printing Malaysia and MRO. Subsequently, Mak Kwan Wuey from Makerzone & Fabspace KL, and She Tze Jin from Taylor's University ME.REKA Makerspace worked on improving the 3D printed design to evolve into a laser-cut version that is able to reduce the production time.

The production is happening at the following 4 locations as of 2pm, 23rd March 2020.

- ME.REKA, Publika
- Taylor's University Lakeside Campus
- Spectrum Laser Studio, Kepong
- Jinta Enterprise, Kepong

Our partners at Impact Malaysia and GoGet are helping to coordinate and cover the cost of our first-mile and last-mile delivery for all products being manufactured.

A small laser cutter/laser engraver is able to produce 8 pieces of face shields per hour, making a 100 units per day, and a large machine can produce 40 pieces per hour, making 500 units per



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day. We are actively seeking other larger production partners that are able to mobilize immediately and increase the production volume. Our target is to mobilize up to 10 machines around KL & Selangor area, and a further 10 machines across Malaysia to produce up to 15,000 units this week, and ramping up production further next week. As of date, we have received requests from 5 public hospitals for **50,000 pieces** of Face Shields.

The open-source design files and the steps to create the product are found on Instructables link:

For laser cutters/engravers:

<https://www.instructables.com/id/Protective-Face-Shields-for-Covid-19/>

For 3D printers:

<https://www.instructables.com/id/COVID-19-Coronavirus-Face-Shield/>

Here's how you can help:

1. Help to provide direct contacts of face shield manufacturers that we can source face shields from
2. Provide a laser engraver/laser cutter / 3D printers / CNC Milling / CNC or production facility that can help with production
3. Have contacts with plastic mold makers who can mobilize to create large scale mask holders immediately
4. Provide direct contacts of those who can provide/supply 0.2mm transparent A4 plastic sheets. We need 30,000 pieces over the next week.
5. Provide direct contacts of those who can provide/supply 4mm - 8mm acrylic sheets. We need 190 pieces of (4ft x 8ft) over the next week.
6. Connect us to a frontline organization/coordinator in need of face shields (hospitals, clinics, police force, etc)
7. Public and corporate cash donations are welcomed, this can be done by purchasing the materials directly and sending it over to our production centers, or transferring the money over to us to purchase the materials. All funds received will be disclosed publicly and



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accounted for. Please make a public post of all funds transferred into the account, and tag the Biji-biji Initiative Facebook page and email to finance@biji-biji.com. We have incurred RM5,000 of our personal money to get the first 2,000 pieces going, any help and support is greatly appreciated. As an accredited Social Enterprise, we are able to offer Corporate Tax Deductions for these donations. Contact Lee Kar Zhing (+6012 2908877) for more details on this.

- Bank: Alliance Bank
 - Account No: 140820011062492
 - Account Name: Biji Biji Design Sdn Bhd
8. We are also not taking any public volunteers to help manufacture the products, to ensure the production is optimized and there is no further risk of spreading the virus.
 9. Any other partnership proposals are welcomed.

[For donation and other inquires please visit our campaign website at https://mereka.my/protecting-our-frontliners/](https://mereka.my/protecting-our-frontliners/)

Hospital needs:

Public Hospital Name	Face Shield in Need
Hospital Selayang	1350 pieces
Hospital Serdang	500 pieces
Hospital Kuala Lumpur	10,000 pieces
Pusat Perubatan Universiti Kebangsaan Malaysia	10,000 pieces
Hospital Ampang	10,000 pieces
Hospital Sungai Buloh	10,000 pieces
Pusat Perubatan Universiti Malaya	10,000 pieces
ESTIMATED TOTAL	51,850 pieces



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Budget breakdown:

Costing/piece	Mask Design 1 (10 X use)	Mask Design 2 (single use)	Misc Hospital Design Fabrication
Acrylic	RM3.00	-	RM5,000.00
Machine cost (external partners 1)	RM3.50	-	RM7,000.00
3D Printer Filament (for individual makers)			RM5,100.00
Elastic band	RM1.00	RM0.10	
Foam		RM0.50	
Plastic film (sponsored)			
Labour cost (absorbed by makers)	-	-	-
Total	RM7.50	RM0.60	RM17,100.00
Cost per use for design 1	RM0.75		
Hospital delivery target pieces next 2 weeks	15,320	2,000	TBC
Total cost per design	RM114,900	RM1,200	RM17,100
Total cost	RM133,200		
Funds raised internally	RM5,000		
Fundraising target	RM128,200		

Please note the increase in budget from RM110,200 to RM128,200 as of 24th March. This is to accommodate the number of products we need to make, from 15,000 to 17,320 pieces. Furthermore, additional materials are needed to support the rapid prototyping of other medical necessities such as the Intube-bator boxes for treating 'positive tested' patients. Do note that we will be updating our costing sheet daily, as we secure cheaper and more efficient partners. All the funds will go towards creating more Face Shields and fulfilling the special request from hospitals.

Please **send a Whatsapp message** to the following personnel if you are able to assist:

Juliana: +6014 366 6286

Ambika: +6014 925 7203



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We are currently not able to supply to private companies, as the products are prioritized for hospital and security personnel.

This initiative is a small effort in comparison to what the real on-ground heroes are going through, we deeply thank all members of the public and organizations that are playing a part to contribute.

The following are links to media outlets that have covered our story:

1. <https://says.com/my/news/these-social-enterprises-are-giving-hand-sanitisers-face-masks-shields-to-front-liners>
2. <https://www.thestar.com.my/tech/tech-news/2020/03/23/malaysian-3d-printers-produce-face-shields-to-aid-frontliners-in-the-fight-against-covid-19#.XniZ7leiko.facebook>
3. <https://www.malysiakini.com/news/516112>
4. <http://www.dailyexpress.com.my/news/149375/3d-printers-produce-face-shields-to-aid-frontliners/>

Best Regards,

RASHVIN PAL SINGH

Group CEO, Biji Biji Design Sdn Bhd (1050659-D),
Me.reka Innovative Education Sdn Bhd (1239397-T),
Taylor's Me.reka Makerspac

APPENDIX 1
Prototype of Face Shield

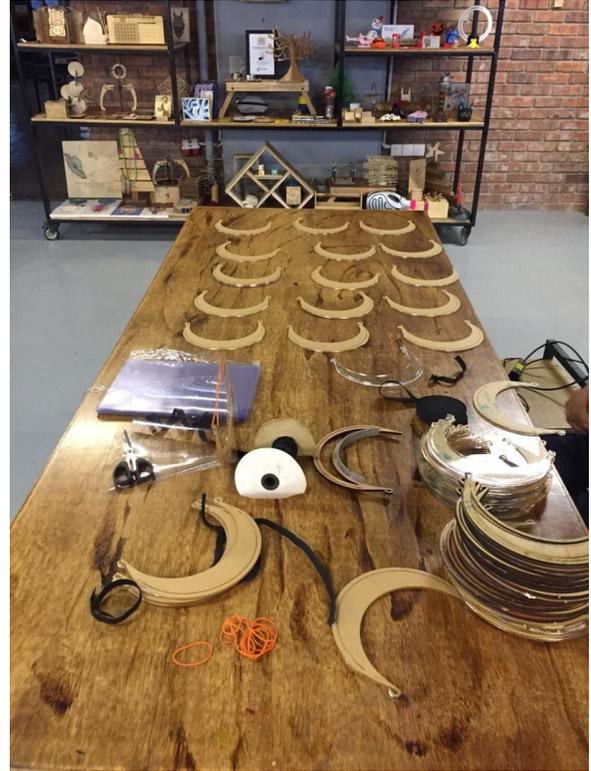


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