

Design Guideline for

# PORTABLE COVID- 19 TESTING BOOTH

May 2020

Prepared by



বাংলাদেশ স্থপতি ইনস্টিটিউট

INSTITUTE OF ARCHITECTS BANGLADESH



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# **PORTABLE COVID- 19 TESTING BOOTH**

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## Disclaimer

The design guidelines have been prepared following similar examples already in use internationally. Anyone using the guidelines to make a testing booth should consider the exact context of use and engage architects and healthcare professionals to prepare working drawings and specifications.

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# FOREWORD

With the Coronavirus [COVID-19] pandemic spreading rapidly in different parts of Bangladesh, the need to limit the transmission has become extremely crucial. The successful example of South Korea in this regard has been due to the importance given to testing as many people as possible. While in Bangladesh it is a reality that there is a shortage of testing kits and other facilities, it is encouraging that government has been successful in gradually increasing the number of test centers around the country.

In order to help such initiatives, the Institute of Architects Bangladesh (IAB) has taken a step to prepare a basic design guideline of a Covid-19 Testing and Sample Collection Booth. Such Booths will allow a quick and efficient facility for healthcare providers to efficiently carry out testing and collecting samples, while maintaining their own safety. The Booths ensures complete separation between the tester and the subject through a zero exposure, no touch system. The testers will not therefore need to don expensive and uncomfortable PPEs to do the job. Temperature can be measured from inside the Booth, throat swabs can be taken by the testers themselves by putting their hands in rubber gauntlet gloves, while lungs and heart can be checked from inside using the stethoscope outside.

The extensive use of such Testing Booths in localities will ensure that people will not require leaving their neighborhoods for getting tested, thereby avoiding the risk of getting infected and infecting others. As the process of lockdown is eased, such Testing Booths at appropriate installations like factories, educational institutions, terminals, large office buildings, hospitals etc. will help generate medical data and help in preventing a re-emergence of the pandemic.

While the design of similar Testing Booths have already been developed in many other countries during the past couple of months, IAB feels that having a ready guideline in Bangladesh will help government and non-government efforts to quickly set up such facilities. The design can be customized to suit special requirements like handicapped accessibility or adjusting heights for children-only use. Attention has been given on details like provision of the entire Booth structure supported on wheels to enable its mobility and providing elements like exhaust fan and air filter inside the Booth to ensure negative pressure and maintain air quality.

Ar. M. Arefeen Ibrahim, Secretary, Education & Research, IAB has been in charge of guiding and coordinating the process of preparing these design guidelines . The team consisted of –

1. Ar. Md. Rashed Hasan – Team Lead
2. Ar. Md. Tanvir – Team Member
3. Dr. Tanvir Ahmed Rasel – Technical Assistance
4. Dr. Samira Sayma – Technical Assistance

The members of the 23rd Executive Council of IAB have contributed by putting in their valuable comments and the document was edited by Ar. Mamnoon Murshed Chowdhury, Vice President [National Affairs], IAB.



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**Ar. Jalal Ahmed**  
President, Institute of Architects Bangladesh (IAB)

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**BASIC ELEMENTS**

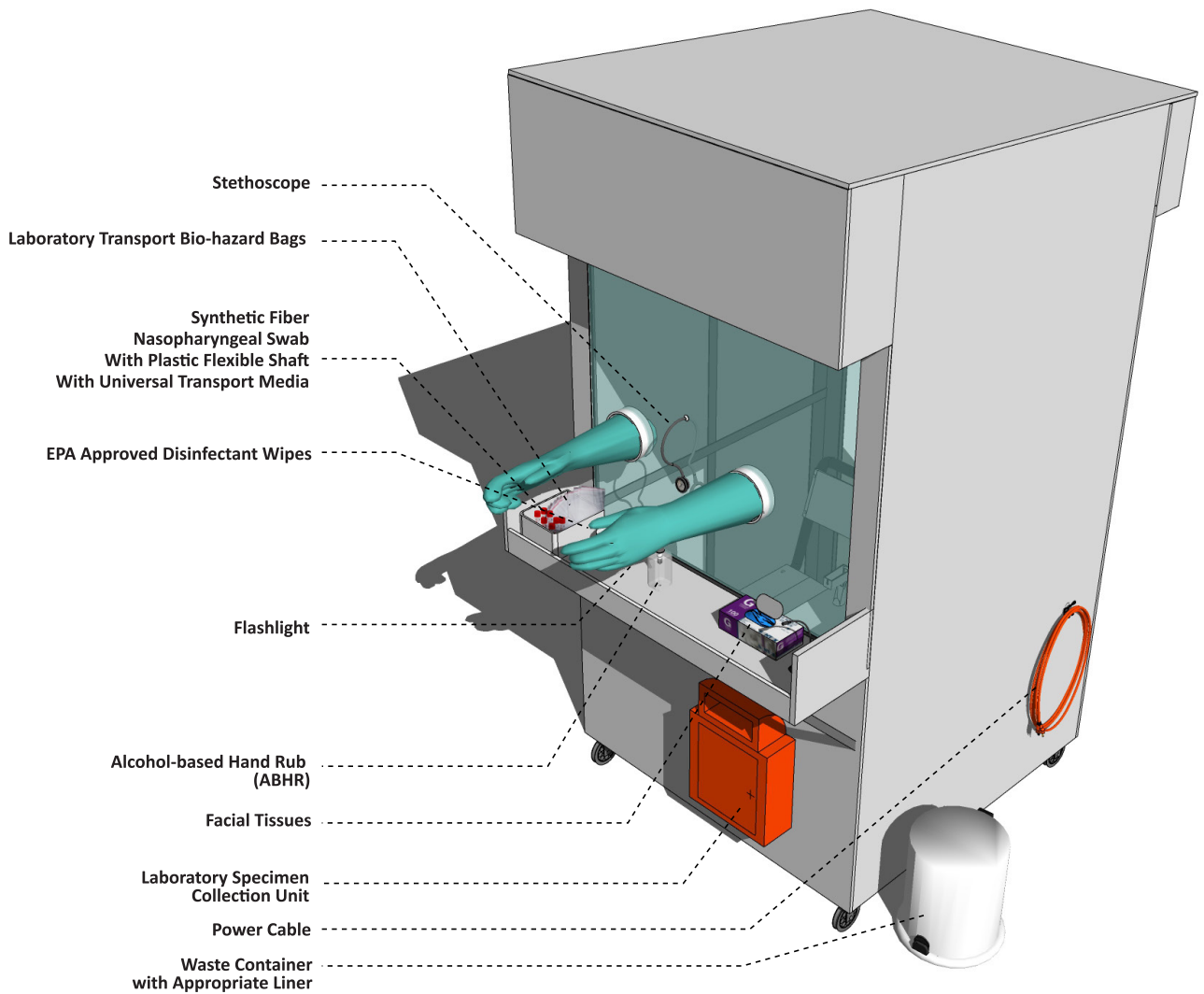


Figure 01 : Elements of covid 19 walk-in test booth

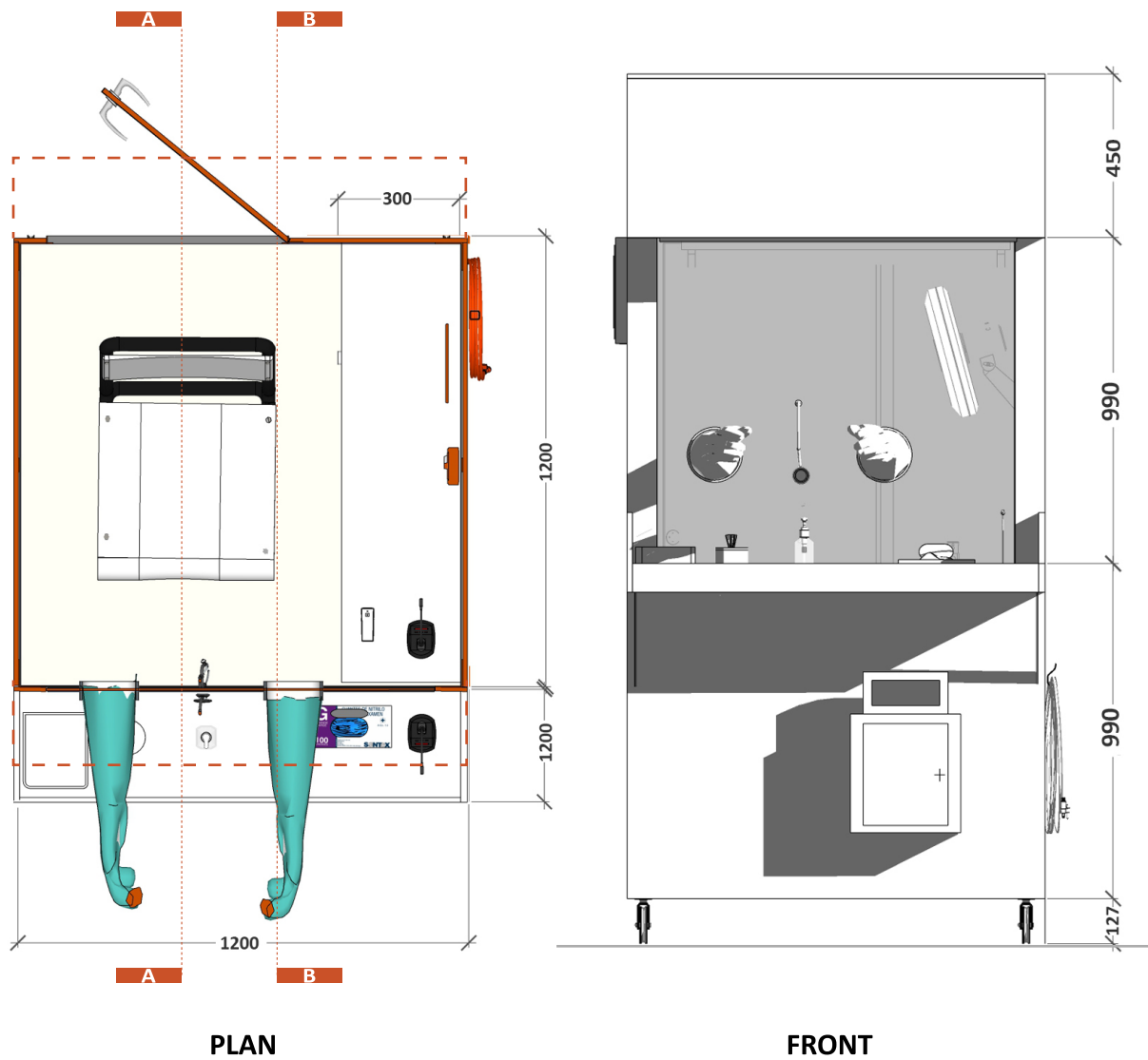


Figure 02 : Architectural drawings of covid 19 test booth

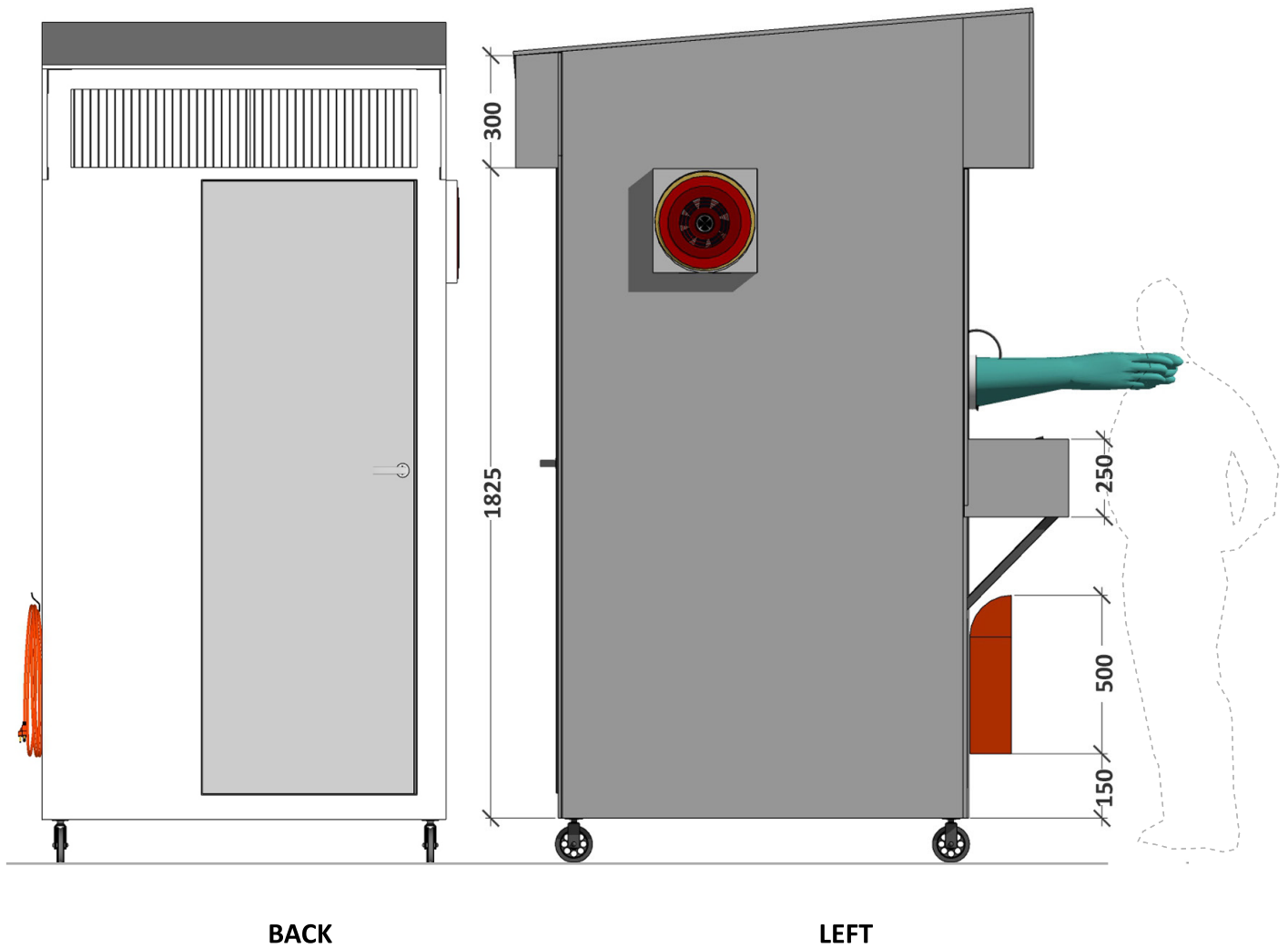
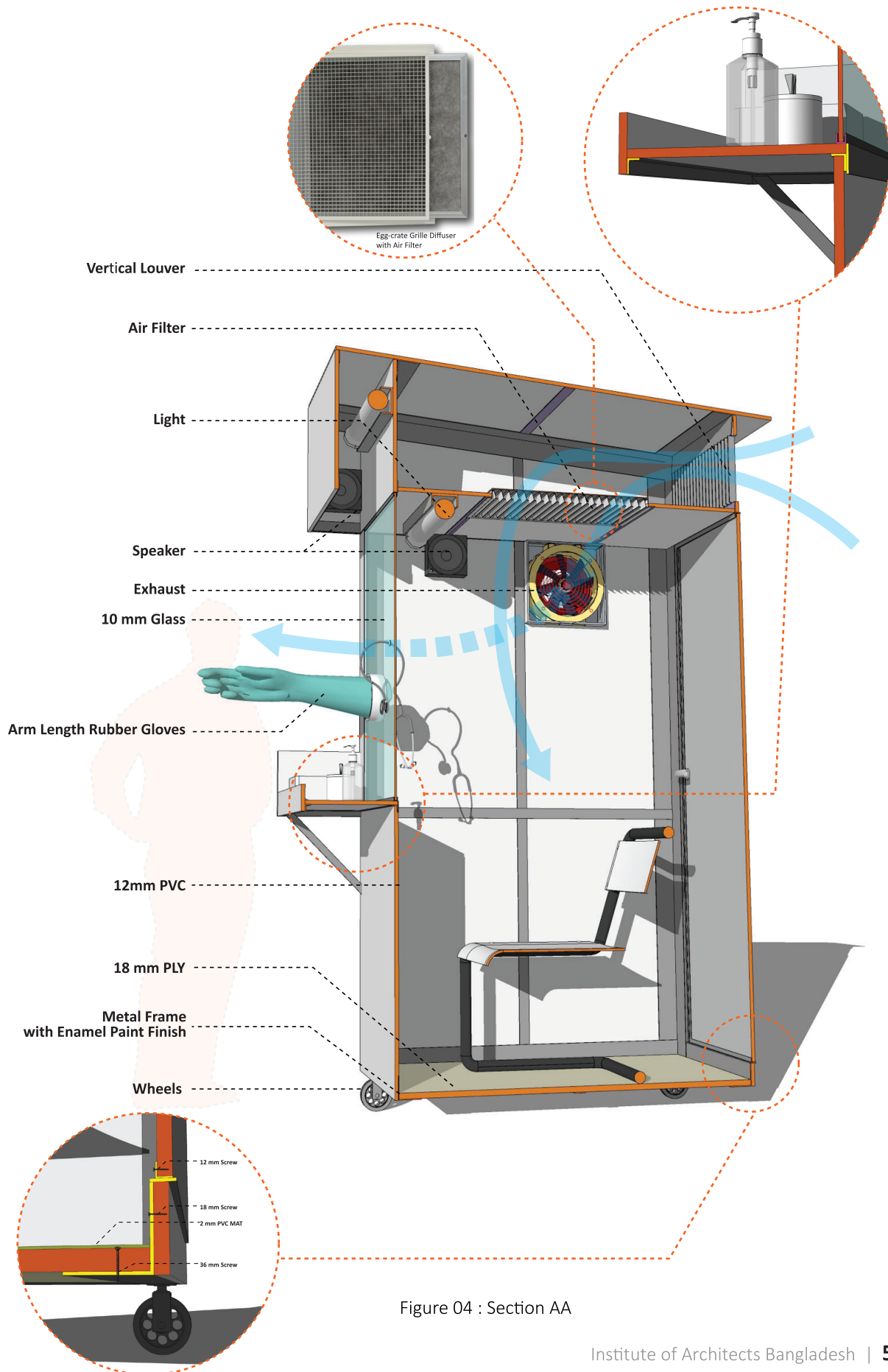


Figure 03 : Architectural drawings of covid 19 test booth





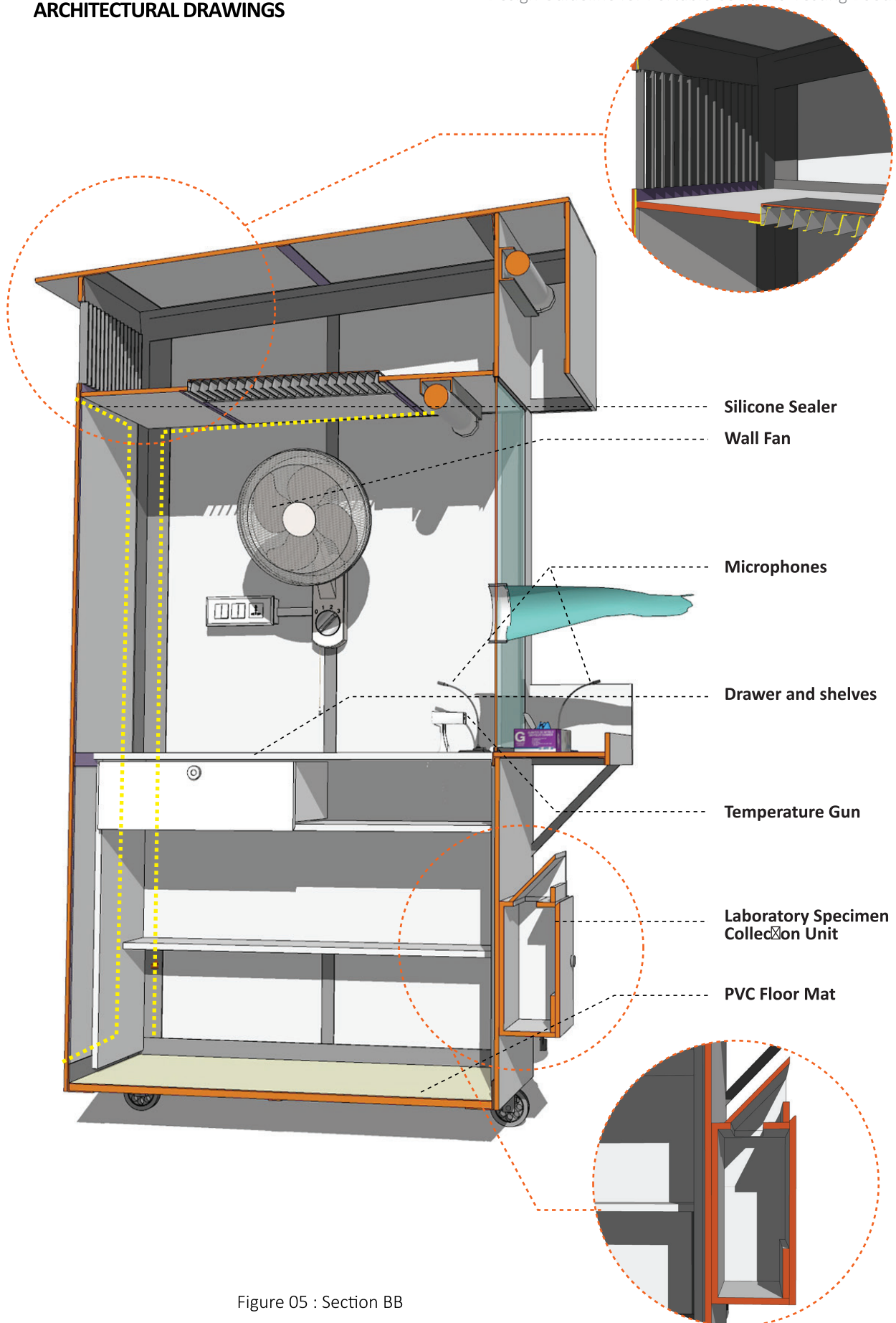


Figure 05 : Section BB

**LABORATORY SPECIMEN COLLECTION : NASOPHARYNGEAL OR OROPHARYNGEAL SWAB**

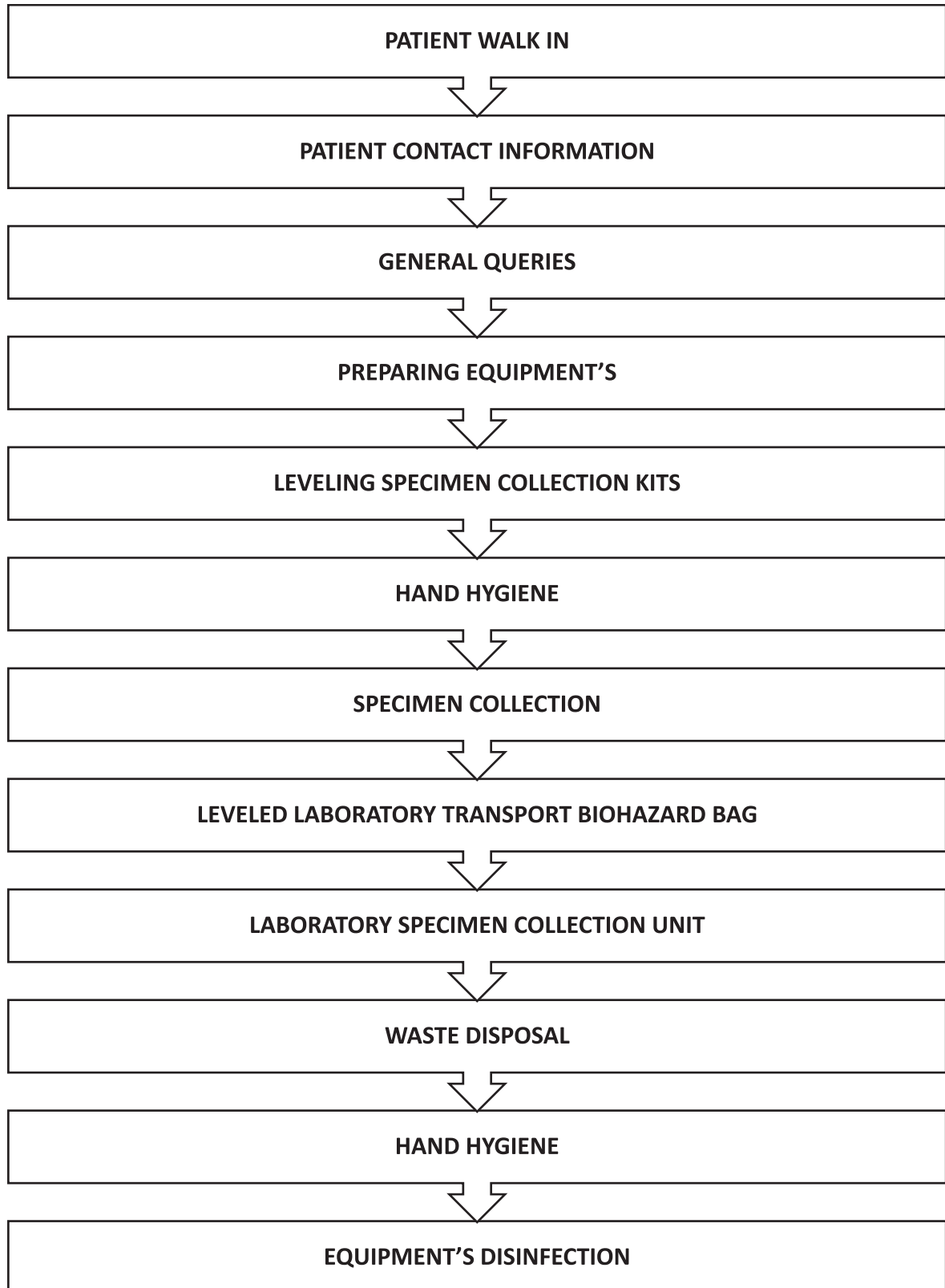
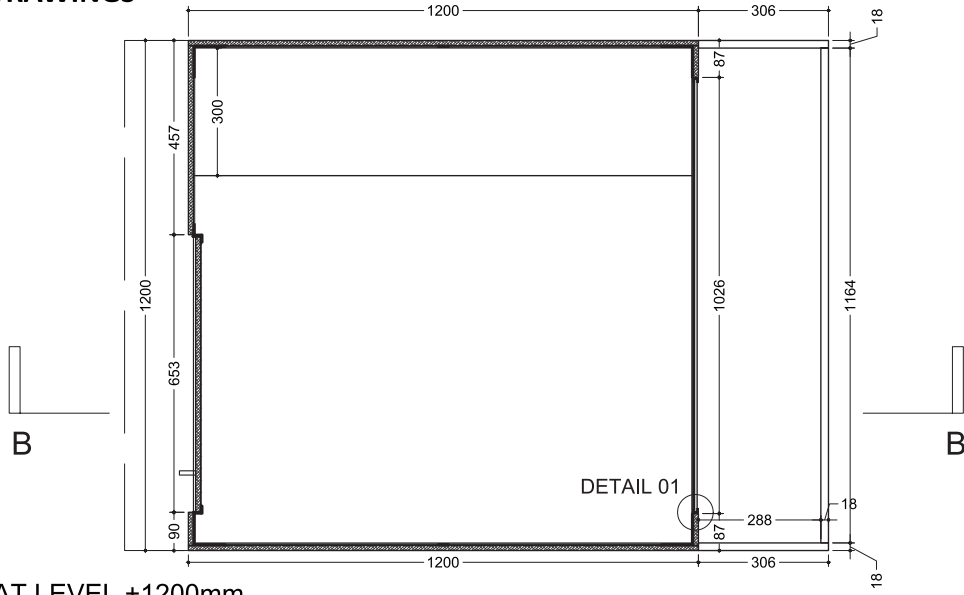


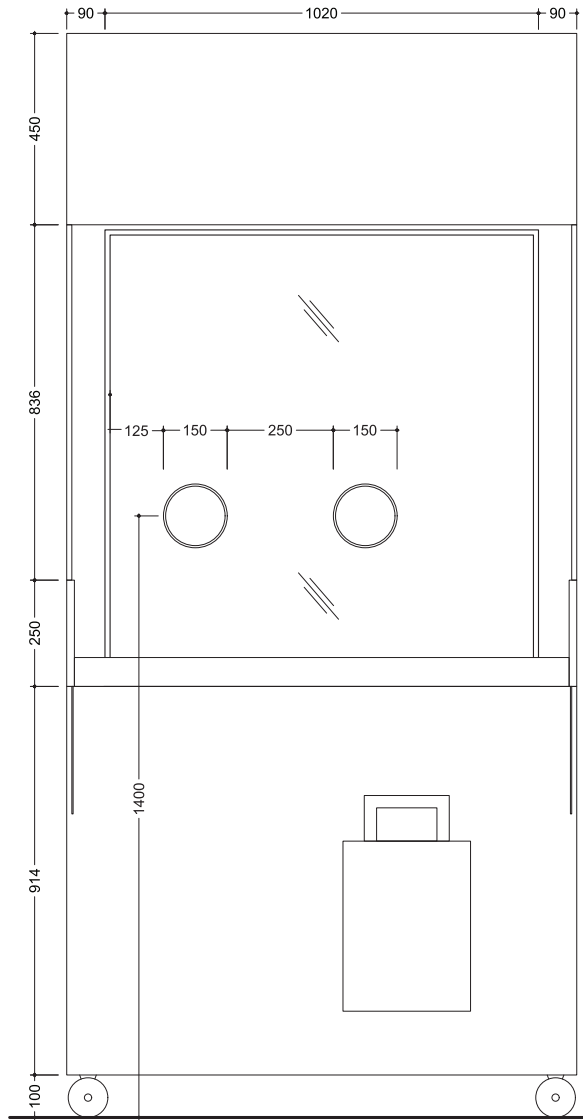
Figure 06 : Flow diagram of Laboratory Specimen Collection : Nasopharyngeal Or Oropharyngeal Swab

**DETAIL DRAWINGS**



**PLAN AT LEVEL +1200mm**

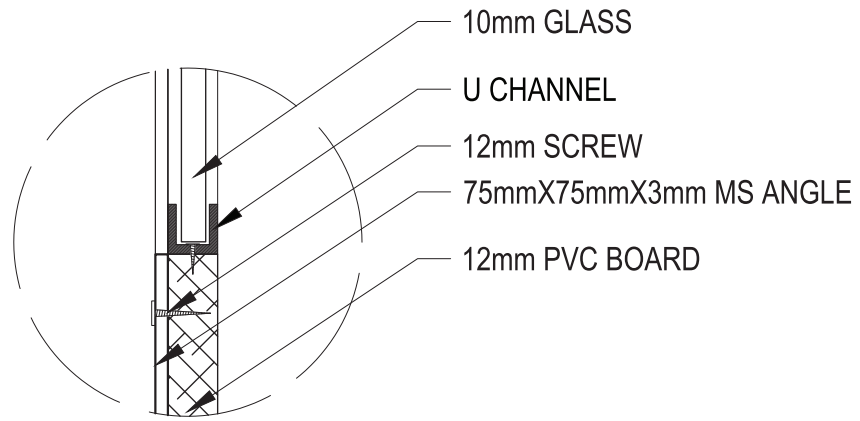
SCALE: 1:400



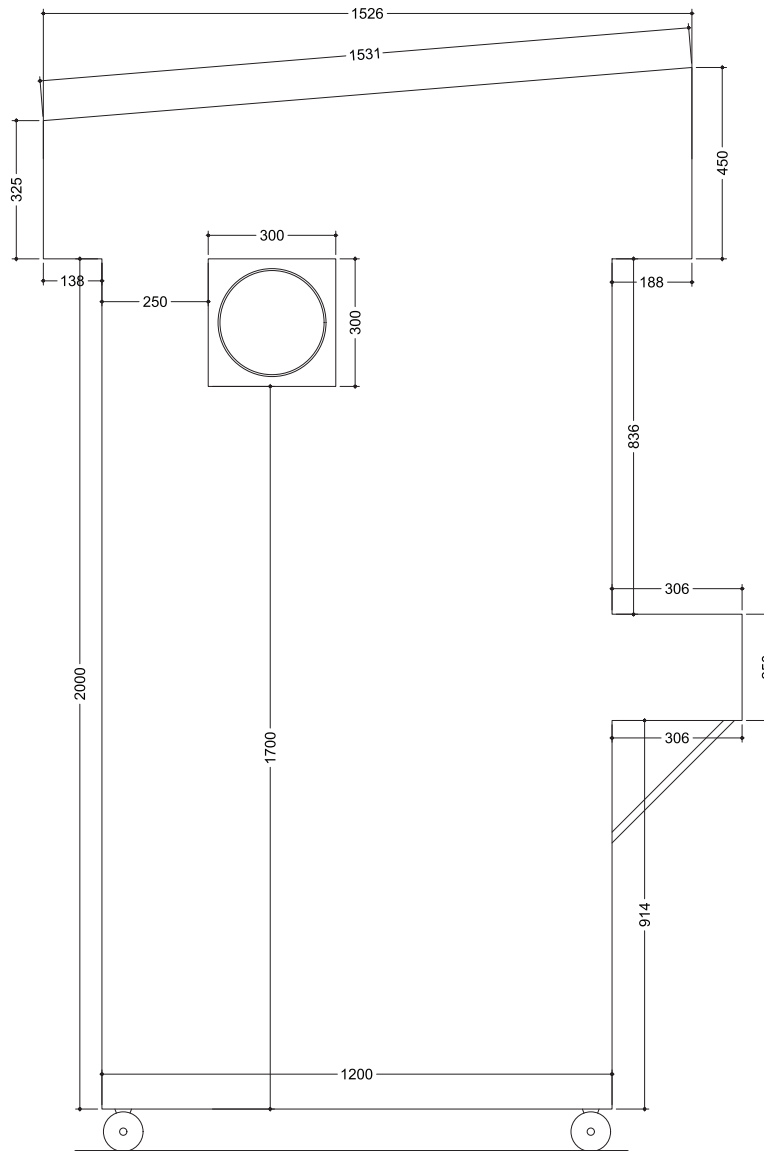
**FRONT ELEVATION**

SCALE: 1:400

DETAIL DRAWINGS



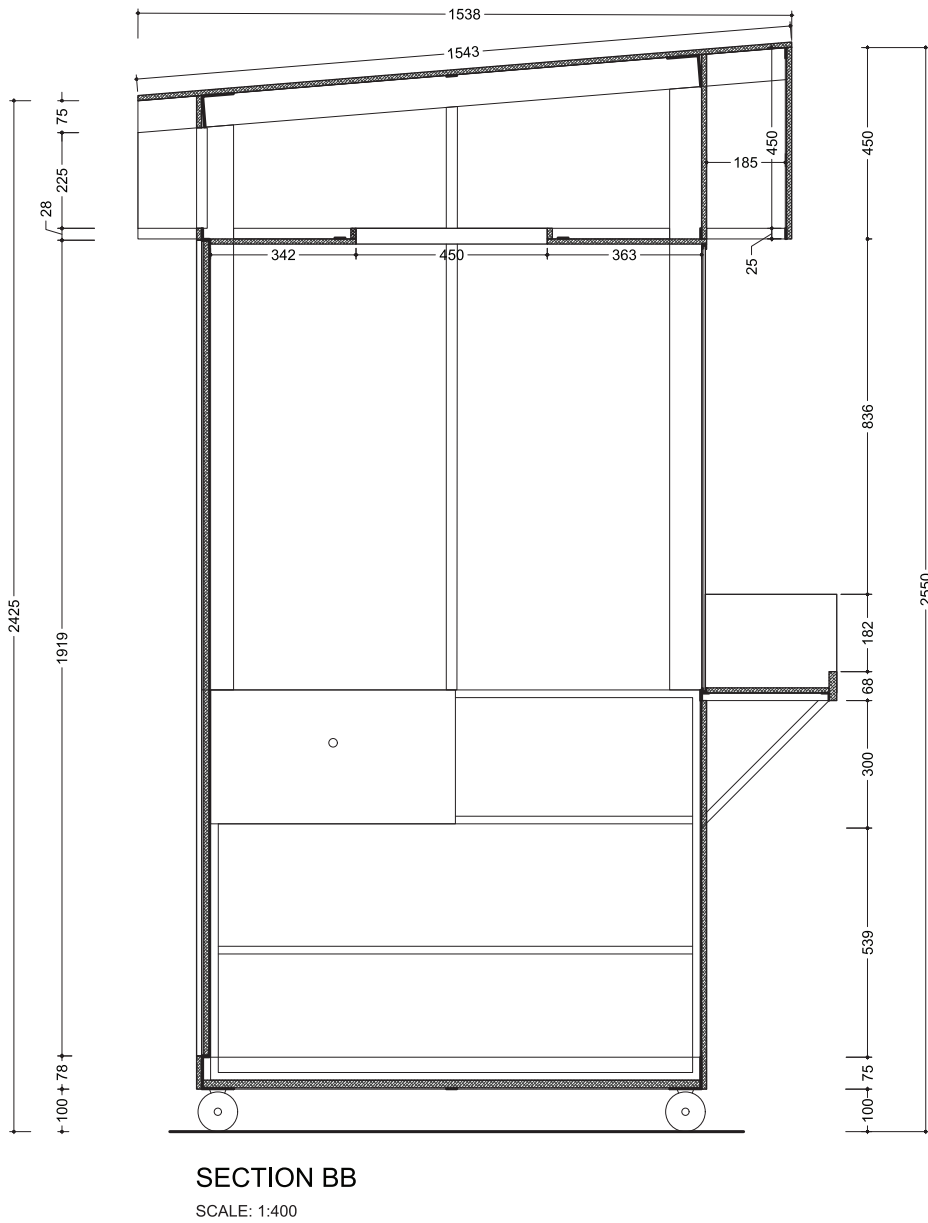
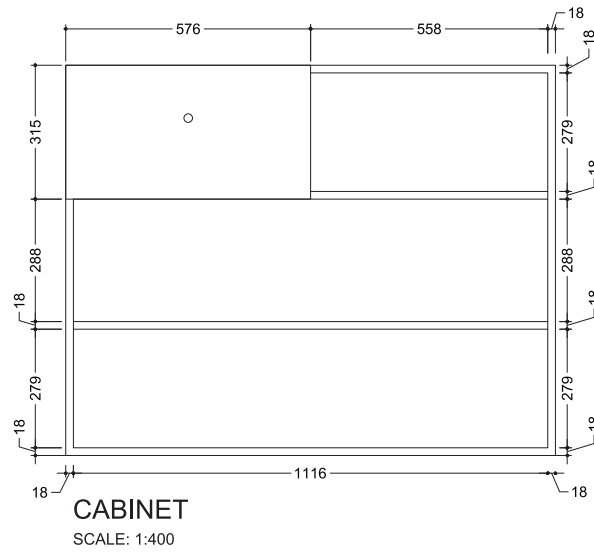
DETAIL 01



LEFT ELEVATION

SCALE: 1:400

DETAIL DRAWINGS



## STRUCTURAL DETAIL

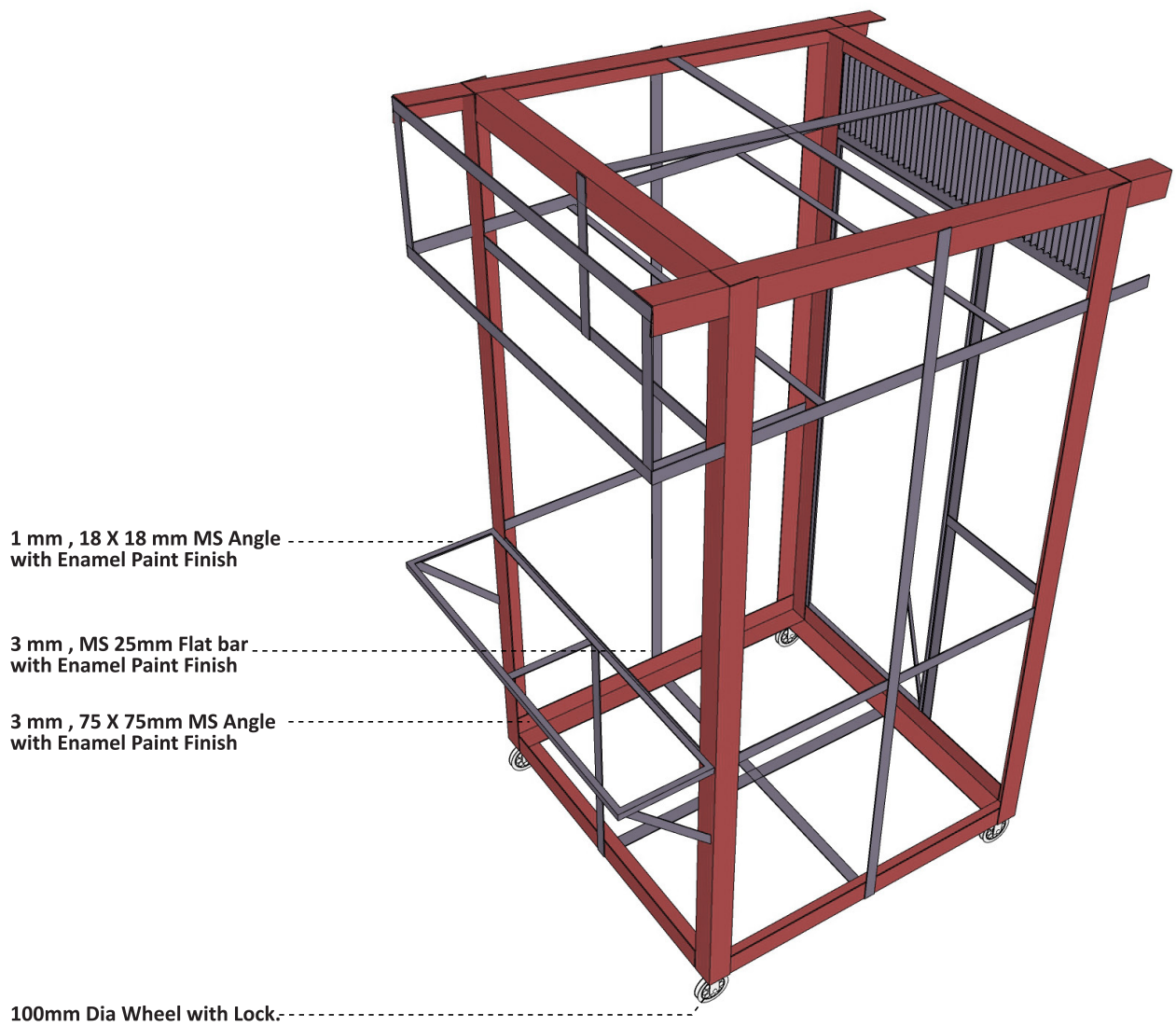


Figure 07 : Structural Detail

**STRUCTURAL DETAIL**

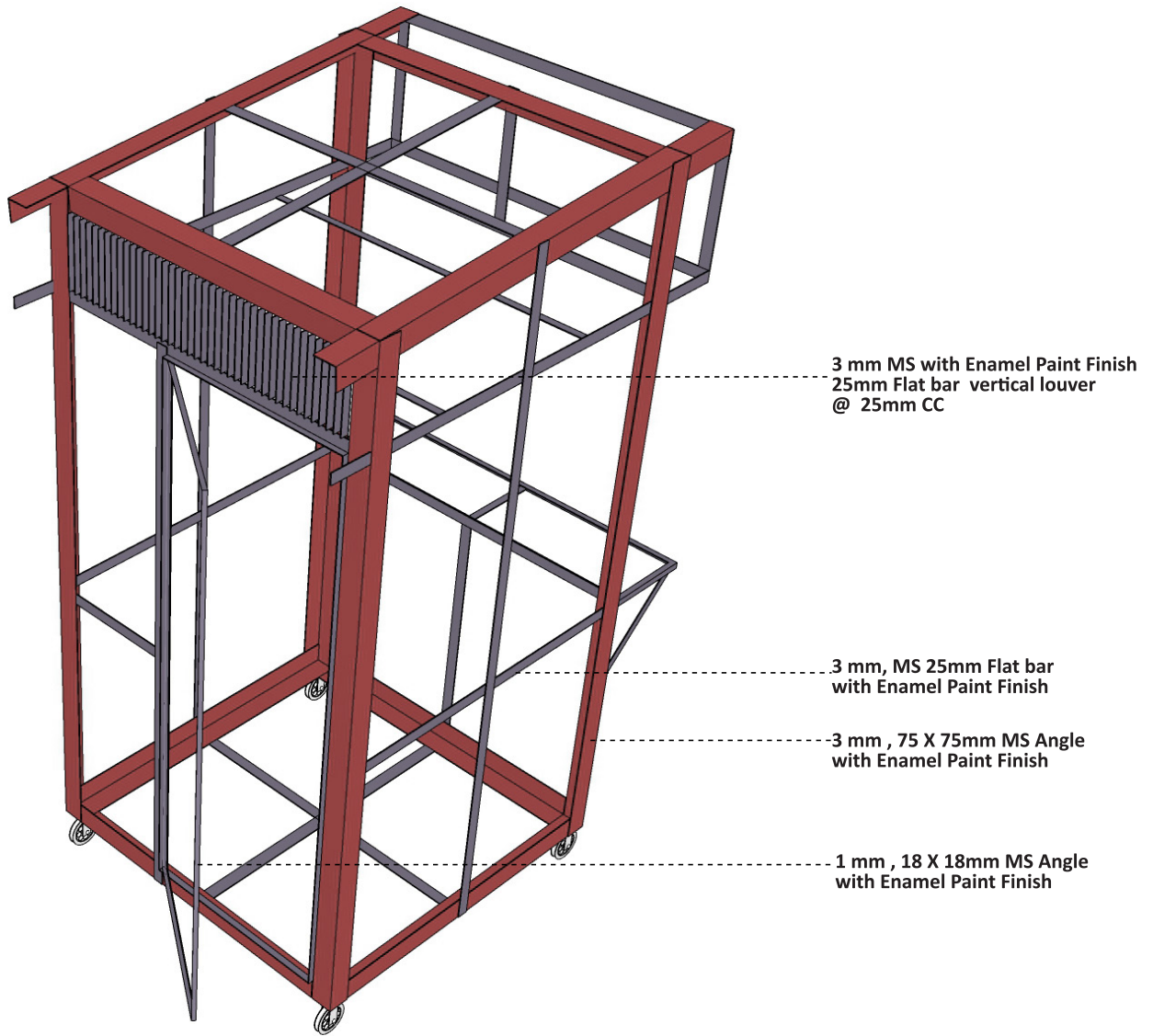
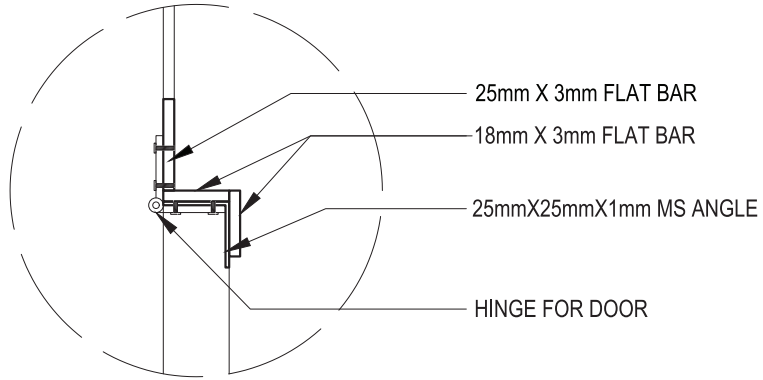
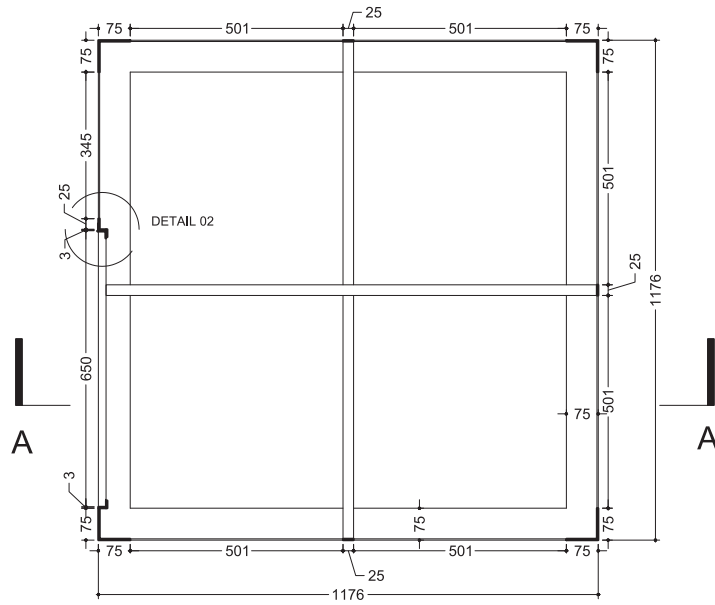


Figure 08 : Structural Detail

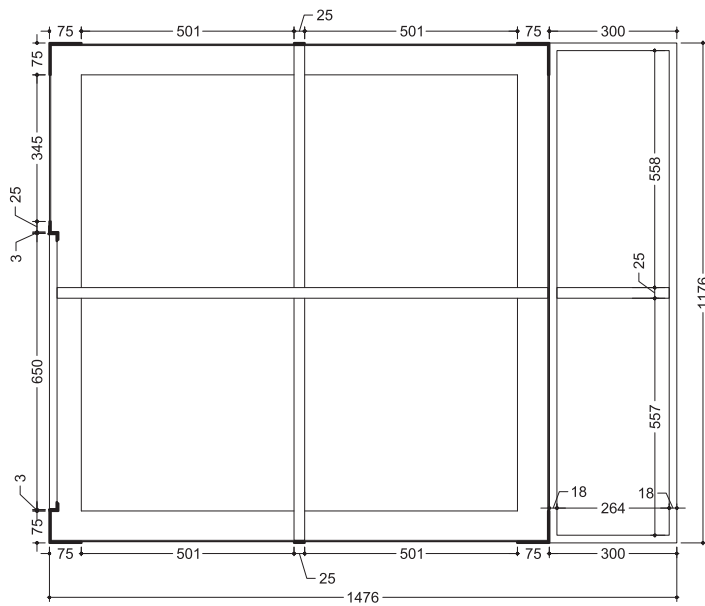
**STRUCTURAL DETAIL DRAWINGS**



**DETAIL 02**



**PLAN AT LEVEL +450mm**  
SCALE: 1:400

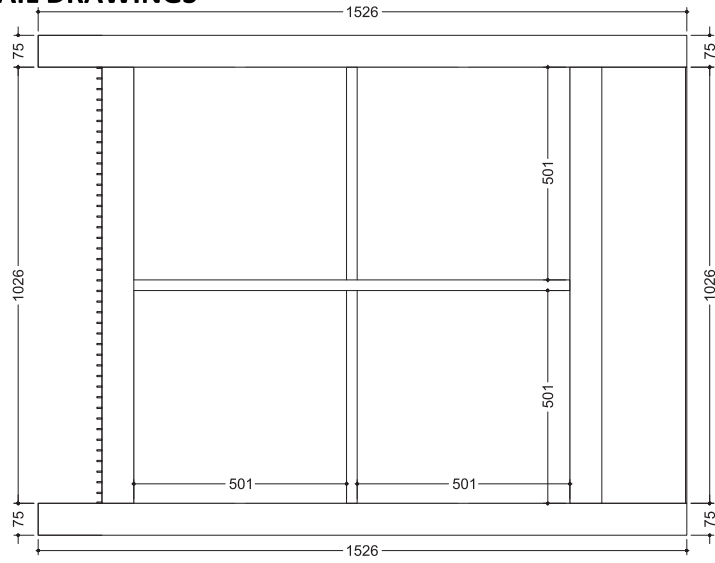


**PLAN AT LEVEL +1200mm**  
SCALE: 1:400



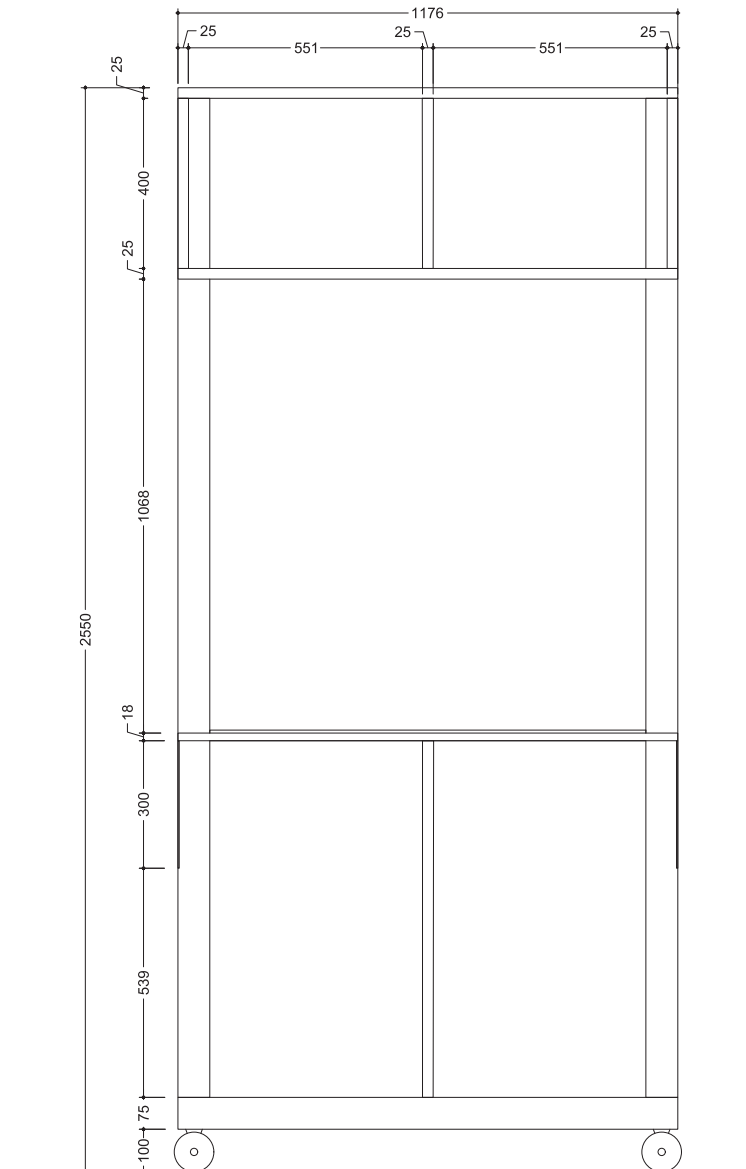


**STRUCTURAL DETAIL DRAWINGS**



**PLAN AT LEVEL TOP**

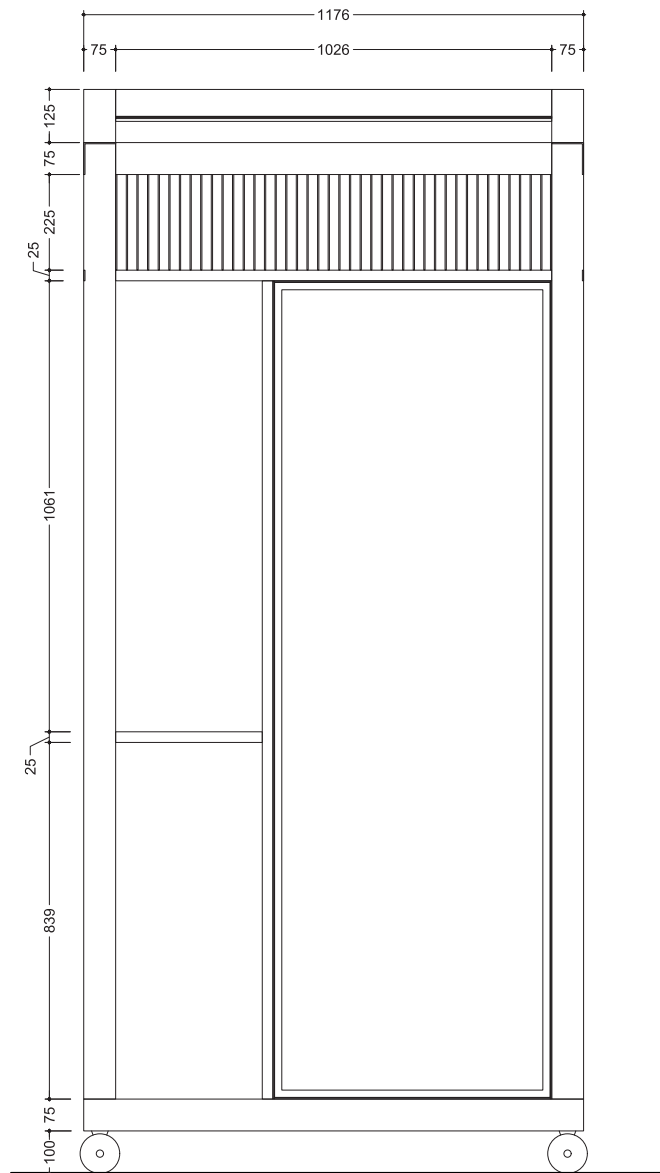
SCALE: 1:400



**FRAME FRONT ELEVATION**

SCALE: 1:400

**STRUCTURAL DETAIL DRAWINGS**



**FRAME BACK ELEVATION**

SCALE: 1:400

**APPROXIMATE COST ESTIMATION**

As On May 2020

| SN | MATERIALS | AMOUNT | COST [TAKA] |
|----|-----------|--------|-------------|
|----|-----------|--------|-------------|

|    |  |          |        |
|----|--|----------|--------|
| 1  | 18 Mm Ply  | 2 Nos    | 4,600  |
| 2  | 12 Mm PVC  | 6 Nos    | 11,000 |
| 3  | 10 Mm Glass & Channel*   | 15 Sft   | 3,000  |
| 4  | Ms Frame Of 3 Mm (3"x3" Angle) &<br>3mm Flat Bar Of 1"<br>with enamel Painting * | Lump Sum | 15,000 |
| 5  | 4" Dia Wheels With Lock  | 4 Nos    | 2,000  |
| 6  | Hardwares  | Lump Sum | 2,000  |
| 7  | Silicone Sealer Tube   | 12 Nos   | 3,000  |
| 8  | Carpenter & Electrician Cost   | Lump Sum | 12,000 |
| 9  | Exhaust Fan  | 1 Nos    | 1,500  |
| 10 | Air Filter   | 1 Nos    | 400    |
| 11 | Speaker  | 2 Nos    | 800    |
| 12 | Microphone   | 2 Nos    | 600    |
| 13 | Arm Length Rubber Gloves   | 2 Nos    | 600    |
| 14 | Electrical Fittings & Wiring   | Lump Sum | 2,000  |
| 15 | Light  | 2 Nos    | 400    |
| 16 | Wall Fan   | 1 Nos    | 1,500  |
| 17 | Miscellaneous  | Lump Sum | 1,100  |

\* Labor cost included

|  |              |               |
|--|--------------|---------------|
|  | <b>TOTAL</b> | <b>61,500</b> |
|--|--------------|---------------|

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- \_ <http://koreakiyon.co.kr/new/img/main/e-Catalogue.pdf>
- \_ <https://www.copanusa.com/covid-19-sample-collection-kits-for-upper-respiratory-tract-specimens/>
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- \_ [http://koreakiyon.co.kr/new/product/m05\\_01.html](http://koreakiyon.co.kr/new/product/m05_01.html)
- \_ <http://platform-med.org>
- \_ <http://www.scmp.com>
- \_ <https://www.copanusa.com/covid-19-sample-collection-kits-for-upper-respiratory-tract-specimens/>
- \_ <https://go.amboss.com/covid-swab>
- \_ <https://netec.org/>