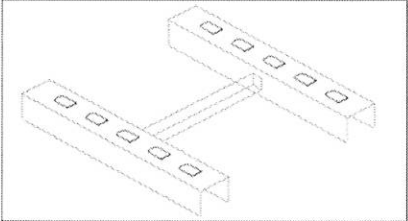
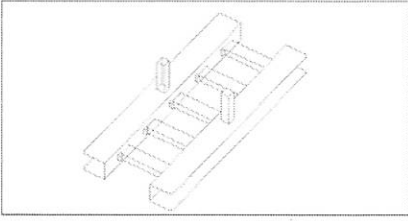
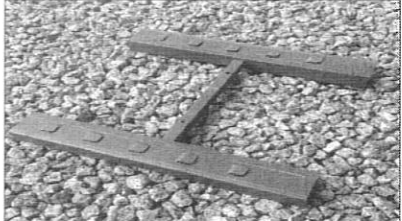
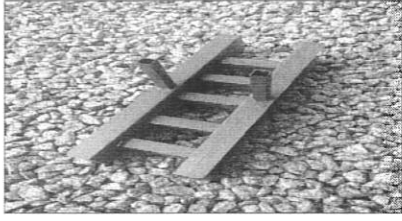


BORANG INVENTORI PROJEK PELAJAR

| PERKARA | MAKLUMAT INFORMATION | | | | | | | | | | | | | | | | |
|---|---|--------------------------|-------------------------------------|--------------------------|---|-------------------------------------|--|--------------------------|--|--------------------------|---|--------------------------|---|--------------------------|---|--------------------------|---|
| Program <i>Program</i> | DKA5C | | | | | | | | | | | | | | | | |
| Jabatan <i>Department</i> | Jabatan Kejuruteraan Awam | | | | | | | | | | | | | | | | |
| Semester/ Tahun <i>Semester/ Year</i> | 5 | | | | | | | | | | | | | | | | |
| Tajuk Projek <i>Project Title</i> | C-Channel Trusses Holder | | | | | | | | | | | | | | | | |
| Jenis Projek <i>Type of Project</i> | Inovasi / Rekabentuk / Penyelidikan | | | | | | | | | | | | | | | | |
| Kategori Kluster Penyelidikan <i>Category/ research Cluster</i> | <p>Tanda “ / ” pada yang berkenaan: Please tick “ / ” where applicable:</p> <table border="1"> <tbody> <tr> <td><input type="checkbox"/></td><td>Sains tulen (<i>Pure Science</i>)</td></tr> <tr> <td><input type="checkbox"/></td><td>Sains gunaan (<i>Applied Science</i>)</td></tr> <tr> <td><input checked="" type="checkbox"/></td><td>Teknologi dan kejuruteraan (<i>Technology and Engineering</i>)</td></tr> <tr> <td><input type="checkbox"/></td><td>Sains kesihatan dan klinikal (<i>Clinical and Health Sciences</i>)</td></tr> <tr> <td><input type="checkbox"/></td><td>Sains sosial (<i>Social Sciences</i>)</td></tr> <tr> <td><input type="checkbox"/></td><td>Sastera dan sastera ikhtisas (<i>Arts and Applied Arts</i>)</td></tr> <tr> <td><input type="checkbox"/></td><td>Warisan alam dan budaya (<i>Natural Sciences and National Heritage</i>)</td></tr> <tr> <td><input type="checkbox"/></td><td>Teknologi maklumat dan komunikasi (<i>Information and Communication Technology</i>)</td></tr> </tbody> </table> | <input type="checkbox"/> | Sains tulen (<i>Pure Science</i>) | <input type="checkbox"/> | Sains gunaan (<i>Applied Science</i>) | <input checked="" type="checkbox"/> | Teknologi dan kejuruteraan (<i>Technology and Engineering</i>) | <input type="checkbox"/> | Sains kesihatan dan klinikal (<i>Clinical and Health Sciences</i>) | <input type="checkbox"/> | Sains sosial (<i>Social Sciences</i>) | <input type="checkbox"/> | Sastera dan sastera ikhtisas (<i>Arts and Applied Arts</i>) | <input type="checkbox"/> | Warisan alam dan budaya (<i>Natural Sciences and National Heritage</i>) | <input type="checkbox"/> | Teknologi maklumat dan komunikasi (<i>Information and Communication Technology</i>) |
| <input type="checkbox"/> | Sains tulen (<i>Pure Science</i>) | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Sains gunaan (<i>Applied Science</i>) | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> | Teknologi dan kejuruteraan (<i>Technology and Engineering</i>) | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Sains kesihatan dan klinikal (<i>Clinical and Health Sciences</i>) | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Sains sosial (<i>Social Sciences</i>) | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Sastera dan sastera ikhtisas (<i>Arts and Applied Arts</i>) | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Warisan alam dan budaya (<i>Natural Sciences and National Heritage</i>) | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Teknologi maklumat dan komunikasi (<i>Information and Communication Technology</i>) | | | | | | | | | | | | | | | | |
| Ahli Kumpulan <i>Group member</i> | 1. Name: Muhammad Haziq Amin Bin Jasmi No. Identification card: 9701021-04-5331 2. Name: Muhammad Muzakkir Bin Abd Razak No. Identification card: 971224-01-7525 3. Name: Zairul Bin Zainal No. Identification card: 971106-01-6177 4. Name: Nursyamani Binti Mohamad Kambali No. Identification card: 970228-01-6090 | | | | | | | | | | | | | | | | |
| Penyelia <i>Supervisor</i> | Name: Ayu Wirdawati Binti Po'a No. Identification card: 780624-01-5172 | | | | | | | | | | | | | | | | |
| Penyelia Bersama <i>Co-Supervisor</i> | 1. Name: No. Identification card: | | | | | | | | | | | | | | | | |
| Abstrak <i>Abstract</i> | Roof is functioning to protect building and occupants from wind, rain, heat and etc. While roof truss is a structural framework which is to support roof. However, there | | | | | | | | | | | | | | | | |

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| | <p>are few issues and problems that occur in the installation working process. The objectives of this study are to produce C-Channel Trusses Holder for roof installation works, to determine the workability of C-Channel Trusses Holder in term of time saving factor and to test compression strength on the joint of C-Channel Trusses Holder. However, C- Channel Trusses Holder can be used during the construction of small scale buildings and it consists of dual function which is a batten holder and as a form-work for roof trusses setup process. As the batten holder, it is suitable for both batten distances whether zinc and tiled roofs. It also only can use for the batten which its spacing does not exceeding 30 inches and not less than 10 inches and only for the manual installation of roof trusses that made at the ground. Besides, it also use for triangular spans which is not exceed 15ft or 5m and 1.5m height. It help the workers install the battens and roof trusses setup easier as it's ensure that all the batten have a uniform distance and increase the speed of operation, working comfort and also avoid wastage in terms of materials uses and worker wages. This product was very well suited with the roof truss setup work and the batten installation because it has been proven that the time taken was reduce by using the product compare to the conventional method. The product also has been proven its load capacity to accommodate the weight of the truss by strength test. For future improvements, there are some suggestions for this product that we founded out. Among others are increase the level and size of C-Channel Trusses holder, make it lightweight and increase the distance of batten rod.</p> |
| <p>Keyword Keyword (max 5 word)</p> | <p>C-Channel Trusses Holder, Roof Trusses Installation, Roof</p> |
| <p>Objektif Projek Project Objectives</p> | <p>The objectives of study are:</p> <ol style="list-style-type: none"> i. To produce C-Channel Trusses Holder for roof installation works. ii. To determine the workability of C-Channel Trusses Holder in term of time saving factor. iii. To test compression strength on the joint of C-Channel Trusses Holder. |
| <p>Skop Projek Project scope</p> | <p>C-Channel Trusses Holder is use in building construction site. This product can be used during the construction of small scale buildings such as houses. It is use for the construction workers to minimize the time taken for work to be done and change the working method from conventional to new using the C-Channel Trusses Holder which is easier. This product consists of dual function which is a batten holder and as a form-work for roof trusses setup process and made from c-channel, square hollow steel and batten steel. As the batten holder, it is suitable for both batten</p> |

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| | <p>distances whether zinc and tiled roofs. The product can only use for the batten which its spacing do not exceeding 30 inches and not less than 10 inches because it is a standard used and to make it short so it will be easy to handle.</p> <p>Next is, as a form-work for roof trusses setup. It only for the manual installation of roof trusses that made at the ground. It also use for triangular spans which is not exceed 15ft or 5m and 1.5m height. This product will run several tests, test run time and questionnaire at three different sites, Sg Rambai, Taman Pulau and Serkam Darat while strength test at Faculty of Manufacturing in UTeM. Test run will be conduct by 9 respondents which 3 respondents per site and questionnaire will be distribute to 15 respondents.</p> |
| IP No | |
| Dapatan Finding (500 words max) | <p>The conclusion from the project were carried out on the product “C-Channel Trusses Holder” founded that the product has been produced has its own advantages and disadvantages. C-Channel Trusses Holder were produced to help workers in roof installation works. Among the methods that have been carried out to identify the advantages and disadvantages of the product is run test. Through data received, the first objective is to produce C-Channel Trusses Holder for roof installation works has been achieved.</p> <p>For the second objective which is to compare between the conventional methods with C-Channel Trusses Holder in term of time saving factor also has been achieved from the time data that we get from test run data. Data shows that using C-Channel Trusses Holder can reduce 19% of time in roof truss setup process compare to the conventional method. In the batten installation work, the product helps workers to reduce 8.2% of time compared to the conventional method. The second objective is clearly achieved.</p> <p>Besides, questionnaire method, through a questionnaire survey forms, data can be recorded and analyzed to find out the objectives that have been made has been achieved or otherwise. Based on the result, there were several different view or response were given from respondents for each category. For the first category, time saving factor, most of the respondents agreed that the product helps in term of time saving factor during roof trusses setup and batten installation work.</p> <p>Same things goes to the second and third category which is the product helps in energy usage and safety factor. Even though some disagree but the majority was agree</p> |

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| | <p>based on the data analyzed. Last objective also been achieved that is to test compression strength on the joint of C-Channel Trusses Holder. Compression strength test on the joint of C-Channel Trusses Holder was conducted in UTeM using 4 samples as in Appendix B. Lab data shows that the joints can accommodate 6.39kN the average force applied on it. Overall, our products successfully achieve the stated objectives.</p> | |
| <p>Cadangan untuk kerja-kerja akan datang <i>Suggestion for future work</i> (500words)</p> | <ol style="list-style-type: none"> Increase the length of C-Channel Trusses Holder for the roof trusses setup process so it can be used to produce more sets Increase the size of the holder and make it lightweight so that workers can hold it comfortably and easier to handle it Increase the diversity for batten distances so it is suitable for different types of roof because the roof has various sizes and distances. | |
| <p>Gambar berkaitan projek <i>Picture related to project</i> (700kb)</p> |   <p><i>Figure 1</i></p> |   <p><i>Figure 2</i></p> |
| Rating/Level | <p>Jabatan/ Politeknik/ Kebangsaan/ Antarabangsa <i>Departments / Institutes / National / International</i></p> | |

* Borang ini perlu diisi oleh pelajar dan dihantar kepada penyelia/ penyelarass projek dalam bentuk hardcopy dan softcopy (borang LAMPIRAN J dan gambar hasil projek dalam format jpeg/bitmap) bersama laporan akhir dan hasil projek.