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Climate Variation as One of the Source of a Building Defects

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Abstract

Malaysia is the country that experienced hot, humid weather. Sun and rain are the two elements with the potential for destroying the beauty of buildings and various other negative effects. Such as building design in this area need special care, especially to overcome the negative effects of climate elements, especially the intake of water or humidity is very dangerous. Beautiful buildings will become dull in a short time. Damansara Utama city also part of Malaysia. So it's showing Damansara Utama city also facing the same problem such as climate variation problem on building wall. One of the solutions to improve performance on the facade of the building systems is to provide in line with all the advanced age of this growth. Using aluminum cladding as wall cladding materials for the building is one step to prevent the walls from the stale and broken. Installation and maintenance of the system is easily and quickly. Most buildings built now widely adopted this technology because it can reduce maintenance costs for the paint finish on the walls. Most architects use this method to design the installation of aluminum cladding on buildings. It`s also could give the impression of the beauty aspect of the building through a variety of designs issued by the employer. Installation of cladding systems are able to save time in terms of maintenance and the ability to provide protection to the buildings provide a huge interest in the construction industry.

Key-word: - defect, climate variation and cladding

1. Introduction

In the building trade, the term 'cladding' refers to applying one of many types of materials to the external walls of a house to increase protection from the elements. Cladding protects a home by reducing the infiltration of rain or damage caused by frost for example. As well as increasing the protection of your home, it can also add a stylish and modern touch to homes and commercial buildings. Cladding is an all-encompassing term for the external skin of a building which keeps out the weather and provides the building's aesthetic effect. In low-rise construction it may support its own weight but self-weight and wind loading are normally transferred to the structural building frame. It may form the full thickness of the vertical envelope of the building but can simply be the outer layer with additional layers providing insulation and the internal lining. Copper, brass, bronze are uniquely suited for wall cladding applications. These materials are strong, light weight highly corrosion resistant and are available in numerous factory applied and alloy finishes and colors.

2. Aim

To apply the usage of cladding systems for the management of a building on the commercial & business area at Damansara Utama to reducing climate variation problem on building wall.

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3. List of Issues

- wall color fading
- bacterial infections
- crack
- high maintenance of wall finishing
- siding diagnosing surface problem
- fixing paint problem
- vinyl & metal repair maintenance

4. Objectives

- To reduce the cost of maintenance building wall.
- To reduce the usage of energy and chemical product on building wall.
- To increase the awareness of, new technology of type of wall, such as cladding wall.
- cladding system can reduce absorber of heat by building wall

5. Methodology

- The first stage is the stage of preliminary studies to be made. Aim and objectives of the study will be formed. Reference of the review will be conducted through secondary data obtained from the books related to the cladding system. The development of theories of cladding system will be reviewed with a view to establishing the continuity of the studies carried out with the development of cladding system at present.

- The second method is method of data collection on the issues and problems identified and the goals and objective as a reference during the production process of this journal.

6. Analysis.

Knowledge about Cladding System

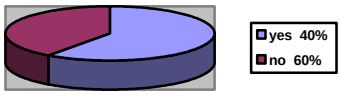


Figure 1

According to the survey that was conducted on 50 public around Bandar Utama, 40% of them already have the knowledge about cladding system. Therefore, another 60% are has no knowledge about this.

To Prevent Damage on the Surface of the Building, We Need to Develop Using Cladding System

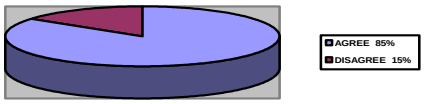


Figure 2

Basically, almost of them are agree if cladding system were develop because there is more positive instead of negative factors such as reduce maintenance of building & will give a new look for the building. Another 15% are disagreeing because of the poor knowledge about cladding system & fear to step on new era.

The Presence of Cladding System Can Help the Building Owner

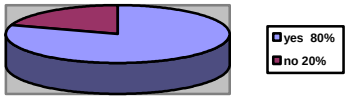


Figure 3

According to the survey, 80% per cent of 10 owner of shop are agree that cladding system can help them via good looking & installation wise. They are believed that cladding system can reduce their maintenance fees. And the others believe that it will be expensive.

Cladding System Helps to Reduce the Absorber of Heat by Building Wall. So It Can Help Reduce the Usage of Air Condition

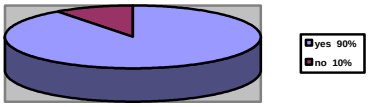


Figure 4

90% of 50 person are agreed because the cladding system easily can reduce the building heat problem because the cladding are designed with hardy proof covered and will having a gap between wall & cladding on fixing process. So the gap will help to reduce the absorber of heat by building wall. In other word, cladding system can help to create green building.

- Next method is collect and analyses all information obtained from the study site. Analysis will be conducted according to the purposes and objectives of the study. Determine the relationship between the cladding system and environment research in the area. In addition, to determine the relationship of theoretical terms with the discovery of the available data from the study area.
- The other method is make recommendations for the proposed use of cladding system on building in the future. Create alternatives to ensure that the cladding system will be more easy & better during apply. Provide more effective guidelines to be used in the preparation of cladding system around urban areas.

6. Case study of urban Damansara Utama *(*building are using & not using cladding system*)*

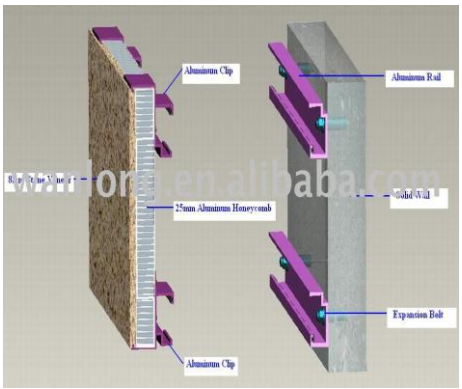
- This case study was made by with my own. For complete this case study i using photograph & oral method. The case study result is, around 35% building only using cladding system at Damansara Utama area. Balance of 65 % is a normal building with plaster finishing wall. So it's giving a good opportunity to promote & increase of usage cladding system on upcoming or existing building in Damasara Utama city.

sample of the building are using cladding system at damansara utama city

plaster finishing wall buiding at damansara utama

7. Aluminium Cladding

Among the principal uses are aluminum cladding in the aircraft industry, lead and cadmium sheathing for cables, lead-sheathed sheets for architectural applications and composite extruded tubes for heat exchangers. The thickness of the cladding is usually between 2% and 5% of the total sheet or plate thickness, and since the cladding is usually a softer and lower strength alloy, the presence of the cladding can lower the fatigue strength and abrasion resistance of the product. In the case of thick plate where substantial amounts of material may be removed from one side by machining so that the cladding becomes a larger fraction of the total thickness, the decrease in strength of the product may be substantial. A clad finish being soft in nature is subject to damage during manufacturing and while in service. Caution must be exercised while polishing or cleaning, since it is sensitive to harsh chemicals and abrasive materials.



Conclusion

In terms of assembly the cladding system is very straightforward. The grid is prepared and controlled easily, accepting any alternations required during the job in the local work space assuring the leverage of any heat expansions causing possible movements, and any alteration regarding the fitting and positioning. The quality of the work could most probably be secured regardless of the constructor`s experience, due to the possibility of corrective interventions and adjustments at the site. Cladding is a very premium process and is now being turned to for more modernized construction and wide ranged flexibility in work.

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