The Challenges of Space Management in Higher Education Institution

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Abstract. Space management is a process to determine efficiency, allocation of space, problems and issues including monitoring the current usage of space. Space Management in Higher Education is an important subject as providing a space is expensive and university itself should be able to provide the best service to support the core business of the universities. However, university commonly faced problem of limited space to cater universities programs and some spaces are not fully utilized. The challenges during implementation of space management in higher education institution are availability of information, personnel experience, availability of space, different interest and objective, lack of research and ineffective systems implemented. Thus aim for this paper to highlight the barriers and challenges faced on the space management implementation. A thorough literature review conducted to gauge potential of space management in Higher Education. The questionnaire distributed among academic staff of Higher Education in Sarawak to determine the challenges towards the space management. The finding revealed that space limitation in the higher education institution is the main challenges towards efficient implementation of space management. The outcome of this study will help to provide some insight for Higher Education in Sarawak to plan a better space management.

1. Introduction
Increase in Malaysian population creates demands for facilities especially the space for education institution and it leads to growth of number of universities each and every year in order to cater the enrolment of new students. Universities expected to be able to provide the best facilities in term of space to support universities' core business. For universities, it is crucial to provide space which enlisted as among of the important element in related for the activities to take place on the specific work to be held [14]. Teaching and learning including research activities take place and it is proven that space is one of the important elements to accommodate the needs of education system [13]. In addition, scarcity in term providing excellent space in higher education institution all over the world become one of the top ten issues faced by system [12]. University should be able to provide an efficient and excellent of the space resources [10]. According to Space Management Project [1], space utilization being defined as how rooms and spaces are being used in term of how they are in use and how the in use. In addition, space within its organization is the most expensive assets own [4].
1.1. Space management
Space management is one of the multi-disciplinary elements in facilities management and the concept of space management is to deliver service and how to manage the sources effectively. Space management includes alternative officing, free addressing, group addressing, virtual office, space sharing and on and of premises management [5]. The effectiveness of space management must be emphasized by the top management itself and according to NAO [5], there are three essential elements that must be well addressed which area to develop management committee members, model or technique to manage space and knowledge of people responsible for the space management. Space considers as valuable and expensive as it cost a lot of money to create proper and suitable spaces and it also possible to generate income for universities. [3, 4, 6]. Thus, spaces and rooms must be fully utilized to prevent problems in space management and if not been managed properly, it will cause waste of space. Expenditure cost and level of productivity affected by efficiency and effectiveness of space usage [5]. When space is not fully utilized, it will induce cost of operation, energy, cleaning and maintenance [2]. Despite or providing new spaces for teaching and learning, existing space resources must be fully utilized as to address new ways of teaching and learning adopted in higher education institutions. Government itself invested billions of ringgit in order to provide facilities for education as an efficient and effective space usage will be control and expenditure cost and level of productivity [9].

1.2. Challenges of Space management
There are several constraints in effective space management such as the lack of information on the predicted and observed is not being identify at early stage during strategic planning regarding types spaces and hours of activity going to be conducted [1, 7]. If the utilisation of space is not optimize, it is possible to reconfigure by means of redesign spaces, rooms sizes but restricted by cost. The utilisation space can be measured on frequency and occupancy rates, but the frequency rate is easier to address compared to occupancy rate. Frequency can be measured on how many times a space or room being use but occupancy more to the numbers of occupant vs capacity of the space itself. The second challenges are partial information on the spaces going to be used for how many hours and size of group [1, 3, 7]. The person in charge for the timetabling does not have full information on the room capacities, exact number of occupants (size of group), types of rooms, available equipment, hours of spaces going to be used and others. The third challenges are different interest and objectives for the institution, academic staff, administrator and students will become one of constraints, [1]. Top management interest more to financial health for its institution as space can generate income for university. Although space considered as assets that can generate income, the interest for the academic staff, and students itself might be differ. For example, academic staff promote flexible course as to attract enrolment of students but is care less on the utilisation of the space itself. The fourth challenges are lack of research on space management. Previous researchers found that researching in space management area was quit difficult [6]. Lack of research on space management or space utilization become one of the constraints in which the data collected can be used as a guideline [7]. This statement supported by [4] although lacking in term of research, it is balanced by numerous technical reports throughout the world. The fifth challenges are person in charge is not an expert in space management and optimization of space was restricted due to too many parties involve but there is no centre specializes in managing space [2]. These statement supports by [7] that the person in charges in space is have no background of this field. The sixth challengers are limited space where as the limitation of space restricted the space management system to be implemented efficiently [8] as the space itself is not being well equipped in accordance with the teaching and learning requirements [7]. HEIs facing common space management problems such as low utilization rate for teaching space and usage of space mismatch with its design [4]. The limited space mention by previous researcher is not mainly on limitation on the space but it includes restriction of spaces to be used by occupants. The seventh challenges are top management support. According to [10], top management support gives
significant impact towards effectiveness of space management implementation. As a result, lack of top management support contributes to low utilization of space even though best planned and technique been applied on managing space. Top management may establish space management committee [5]. The eight challenges are data from the survey that been collected does not apply to the space management policy. This scenario happened due to the difficulties to interrogate and analyse data to apply it into information management system. Furthermore, it is proven to be costly and time consuming [1].

2. Research Methodology
This paper is to identify the challenges of space management implementation at UiTM Kota Samarahan and two blocks has been selected as the case study (Block M and Blok G). The methods used for this paper is based on both primary and secondary data collection. To achieve the objective, researchers provided sets of questionnaires among academic staff in related to space management. Sets of questionnaires distributed among the academic staff that occupy these 2 blocks. This paper was using Likert scale as 1 indicated as “Strongly Disagree” until 5 which indicated as “Strongly Agree”.

3. Results and Discussion
This paper is to identify the challenges of space management implementation at UiTM Kota Samarahan and two blocks has been selected as the case study (Block M and Blok G). The methods used for this paper is based on both primary and secondary data collection. To achieve the objective, researchers provided sets of questionnaires among academic staff in related to space management. Sets of questionnaires distributed among the academic staff that occupy these 2 blocks. This paper was using Likert scale as 1 indicated as “Strongly Disagree” until 5 which indicated as “Strongly Agree”.

| No | Challenges                                      | Mean |
|----|------------------------------------------------|------|
| 1  | Limited Space                                  | 4.35 |
| 2  | Person in charge have no background in space management | 4.20 |
| 3  | Lack of research                               | 3.95 |
| 4  | Lack top management support                    | 3.80 |
| 5  | Different interest and objective               | 3.75 |
| 6  | Data collected not utilized                    | 3.75 |
| 7  | Partial information on spaces                  | 3.70 |
| 8  | Predicted and observed                         | 3.70 |

From the Table 1 as mentioned above, it shows that the highest rate of challenges in space management is limited space. limitation of space restricted the space management to be implemented efficiently. 40% of respondents answered strongly agree and 55% answered agree that limited space is one of the challenges in space management due to every faculty has been allocated with designated spaces or rooms and its quite difficult to used undesignated space. For example, Faculty of Architecture, Planning and Surveying has been allocated with 2 blocks academic which are block M and Block G, but in these two (2) blocks, there are certain room for the use of faculty. Limited space is
not only on the number of spaces can be used but it includes the suitability of the spaces for teaching and learning, for example big theatre hall must be equip with speaker, projector, very big white board and ventilation system. Low utilisation rate of space be affected by limitation of space. According to [7, 8] limited space is not only on the spaces or rooms, but it includes restriction to use the spaces and rooms be used. Thus, limited space means restriction to use another space even though it is unused. The lowest challenges are share by 2 which are predicted and observed and partial information. 50% of respondents answered Agree there is gap between predicted and observed as one of the challenges in space management. During strategic planning, it must be set up how many rooms, students inducing suitable equipment for the room to be used during teaching and learning but normally it is inevitable to predict exact number of rooms, capacity of the room including size of groups going to use the rooms. According to [1, 7], it is not being identified at the early stages of strategic planning in term of types of spaces, hours of activity including size of group. While for the partial information, 60% answered Agree and supported by [1, 3, 7] that the person in charge have incomplete information regarding room capacity, functionality, exact number of occupants, available equipment, intended hour of usage become one of the setback to do timetabling and schedule.

4. Conclusion
In conclusion, space management is one of the significant element in facilities management. Space are considered as valuable assets that can give direct impact to financial health of higher education institution. Abundance of unused space lead toward waste of money as space need to be operate, maintaining, energy and cleaning. If it is not being manage effectively and efficiently, it will create extra expenses at the end. Therefore, the need of finding solution to counter the setbacks are required and it involved a lot of parties to play their roles as to create sustainability in space management. This paper is helpful to highlight challenges in enhancing the quality of space management in higher education institution. Based on the results, there are eight challenges obtain from the questionnaire which are limited space ranked highest and predicted and observed and partial information ranked lowest.

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