

ASSESSMENT OF URBAN GREEN SPACE BASED ON LANDSCAPE  
ECOLOGICAL PRINCIPLES

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## ABSTRACT

Ecological factor has not always been the main factor to be concerned with when planning a city, thus a city has always been forgotten to be regarded as an ecosystem. If the city is treated as an ecosystem, there is a need to conserve adequate green space to fulfill the ecosystem services. Although the Malaysian statutory planning system through its development plan provides allocation of open space, the contribution of these open spaces towards urban ecosystem is still questionable. Therefore, this research is done to evaluate the ability of the planned urban green space of Johor Bahru City Council (MBJB) in two levels: neighbourhood and city to perform other function than just as a recreational space. By using GIS as a tool, assessment is done by using landscape ecological principles such as landscape element (urban green space), landscape structure (size, connectivity, shape and distribution) and landscape function (recreational and habitat for biodiversity) to assess whether the urban green space is able to function as a recreational space and habitat for biodiversity. The research finds that the urban green space is hard to become a habitat for biodiversity in terms of the connectivity. Nevertheless, in terms of the size of green space on the city level, it has a good potential to become a habitat compared to the size of green space in the neighbourhood level. Finally, the research concludes with recommendations for future research and recommendations to improve the green space condition to be able to perform another landscape function which is to become a habitat for biodiversity.

## ABSTRAK

Faktor ekologi jarang dijadikan sebagai faktor utama dalam perancangan bandar, lalu menjadikan sebuah bandar tidak dianggap sebagai sebuah ekosistem. Keperluan untuk mengekalkan kawasan hijau akan wujud jika sebuah bandar dilihat sebagai sebuah ekosistem untuk memastikan bandar tersebut dapat menerima kesan-kesan positif kawasan hijau tersebut. Walaupun dalam aspek perundangan perancangan telah menetapkan penyediaan kemudahan kawasan lapang di dalam pelan perancangan, namun, sumbangannya terhadap ekosistem bandar masih tidak jelas dan kurang dirasai. Oleh itu, kajian ini dijalankan untuk melihat sama ada kawasan hijau yang dirancang di dalam kawasan Majlis Bandaraya Johor Bahru di dua peringkat: kejiranan dan bandar mampu untuk memberi servis kepada ekosistem bandar Johor Bahru selain daripada menjadi tempat rekreasi untuk orang awam. Penilaian kawasan hijau dijalankan melalui prinsip ekologi landskap seperti element landskap ( kawasan hijau bandar), struktur landskap (saiz, perhubungan, bentuk dan taburan) dan fungsi landskap (tempat rekreasi dan habitat untuk biodiversiti) dengan menggunakan bantuan perisian GIS. Kajian ini mendapati kawasan hijau yang dirancang sukar untuk menjadi habitat untuk biodiversiti jika dilihat dari segi perhubungan antara kawasan-kawasan hijau tersebut. Walaubagaimanapun, saiz kawasan hijau di peringkat bandar mampu untuk menjalankan fungsi sebagai habitat jika dibandingkan dengan kawasan hijau di peringkat kejiranan. Akhir sekali, langkah-langkah untuk memperbaiki struktur landskap kawasan hijau dan skop untuk penyelidikan di masa hadapan bagi kawasan hijau bandar menjalankan fungsi selain daripada fungsi rekreasi dicadangkan sebagai kesimpulan kajian ini.