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Interactive comment on "Constructed Technosols are key to the sustainable development of urban green infrastructure" *by* Maha Deeb et al.

Anonymous Referee #2

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The authors present a review on constructed Technosols to fulfill specific ecological functions in urban environments. This is a trending topic and is of international interest, since many cities need to recycle different kinds of waste materials in order to diminish landfill area and to avoid using natural soils to construct soils on disturbed terrains. Urban planners are also demanding much more specific advice than currently available in the literature, on which wastes can be used, in which mixtures, how thick the different constructed horizons should be, according to which land use, etc. In this sense I consider that the manuscript could well fill this gap and provide a good overview of the existing experiences.

The authors present an overview of the kinds of waste materials, which have been used so far to construct Technosols, and also show in a first Figure a general diagram of the

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steps of the construction process, and another Figure with five different examples, on how substrates can be organized to construct a Technosol depending of the substrate characteristics and the aimed functions. Yet, another Figure (2), with "Key fertility characteristics of constructed Technosols to be considered", is misleading and should be improved. The selection of urban land uses should coincide with the ones stated in Table 1, and the column of "Maintenance" should be moved to the right end, if not deleted (I do not understand what the purpose is of including this information...). The Tables are adequate, however I missed a third Table or Figure that integrates specific characteristics of the different waste materials, which help to achieve the key parameters needed for the different functions. It would be also useful to pinpoint limitations, as for instance ranges of concentrations of heavy metals or other pollutants of the different waste materials, which might counteract the achievement of the desired properties. The review could also include which were the mean physical, chemical and biological properties of the constructed Technosols described in the reviewed papers. Such a list could provide a reference for urban planners, on which values they should be expecting for the mentioned key parameters, when they use different waste materials. A question which was not sufficiently discussed is the proportions in which the different materials should be mixed, or the optimum thickness of the different layers, according to the different land uses. In general I missed more quantitative information or guidance, which I think the review of the different manuscript allows to do.

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