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With the growing worldwide demand for affordable housing and the importance of supporting and stimulating sustainable development, the need for sustainable solutions in the affordable housing sector is at a peak. The present paper screened about 75 construction technologies and assessed 46 of them. The present paper presents the first results of a step wise approach to identify, assess and recommend most promising technologies for affordable housing projects. A database was developed to store detailed technical information about each of the technologies. A grading and ranking scheme was developed to identify the most promising construction technologies from a sustainability perspective. The main challenges for affordable housing production and most relevant assessment indicators were identified from the literature, interviews and meetings with experts. An indicator based assessment system was developed by cross-referencing the identified eight challenges with ten selected indicators. The final ranking demonstrated that a wide variety of technologies perform strongly overall, and these range from bio-based materials, such as bamboo and timber, to industrialized technologies, such as concrete. Moreover, the possibilities for improvement are vast, and the option of combining different technologies seems to be the most promising approach.

Highlights

 The most promising technologies are closely connected to local production. The best performing technologies are associated with bio-based or industrialized products. A combination of technologies can provide an optimal solution to the affordable housing problem. Traditional technologies need to be developed to achieve standardized solutions. The environmental and socio-economic performance of the more industrial solutions needs to be improved while maintaining their competitive presence in the market.

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