The importance of good quality geo-environmental information is becoming increasingly accepted as new guidance and legislative changes force developers, planning authorities and regulators to consider the environmental implications and potential impacts of proposed developments. Nowhere are these issues more relevant than in the urban environment. Geoscientists at BGS have learnt that it is essential to understand their clients‘ individual needs in order to provide appropriately customised data outputs. It is only in this way that geoscientists can ensure their data will be used fully and effectively within the planning process, and adequately support urban development.. Therefore, new and innovative ways of communicating and visualising geoscientific information are being exploited. Advances in the use of Geographical Information Systems and 3D modelling software are enabling geo-environmental information systems, which take full account of the third dimension, to be constructed for several of the UK’s main urban areas, The geoscientific information are provided within regional and detailed 3D geological models, which are attributed with physical, chemical or hydrogeological property data. These models can be used to predict not only the rock and soil type but also variations in properties within any particular unit or formation. The 3D geological models can therefore help to provide solutions to many geoenvironmental issues raised during the planning process. By using the 3D geological model in this manner, it will be demonstrated that geoscientists are now moving from conceptual ground models towards more realistic ground models based on actual ground investigation data. There are three main issues which still need to be resolved if large-scale up-take of 3D models in urban planning is to be achieved. Firstly, all users of digital geoscience data must understand the limitations of the data on which their assessments are based. This is becoming critical as improvements in 3D modelling techniques are allowing geoscientists to introduce a far greater level of realism to their models. The second issue is the ability to represent easily the variability within geological units. The attributed models presented in this paper largely display the bulk attributes for a particular unit. The level of resolution is limited by the amount of data available on which to model a particular geological formation or member.. Finally, there must be an efficient dissemination of data, which depends largely on the continued development of the Internet as a medium for data transfer. However, a future is within reach where a virtual site can be generated on a web based platform using a site’s characteristics e.g. its geology, geography, and past land-use, which will enable developers, planners and regulators to visualise the impact of proposed projects from the comfort of their desk-top PC.