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INQUIRY INTO LAND VALUATION SYSTEM

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Inquiry into the Land Valuation System

Introduction

The majority of residential properties in New South Wales that require valuation are located in large to very large urban areas. In these areas very little land remains as "cleared land that is ready for development" as may have been the case in 1916, and so the use of a comparative valuation method to value only the land component becomes very difficult, because in essence the improvements must be valued first to then arrive at the unimproved land value. It is suggested that, for residential properties at least, this is one contributor to inequity in the valuation system and volatility in land valuations.

It is suggested for residential properties that the valuation, on which rates are based, should be based on the land plus improvements, which would be similar to the system in Singapore where rates are based on the annual amount of rent that could be levied from the property. Most owners understand property value and its variation. There are now Apps that even allow a person to determine the last sale value of any residential property via their mobile phone (and GPS locational information). In addition with advances in cloud computing, with vast storage capacity and light speed calculations, and the readily available spatial technologies of remote sensing, GIS, GPS, and DTMs, the tools are now available to have a virtually online, real time valuation system.

In the following I outline an approach that could be used to accurately and rapidly acquire such data. For practical application a more detailed study would be required.

Suggested Valuation Method

Since the beginning of the computer age many attempts have been made to have a computer based property valuation system based on multivariate statistical programs, such as multiple regression analysis. Here relatively simple regression equations, that attempted to model the variables that added (or subtracted) to a property's value, such as number of bedrooms, floor area, construction material etc, were derived from historical sales data and some limited property details. Some of the major problems with this approach were –

(a) the lack of computer storage and power, and high cost.

(b) the limited information on the property's "variables".

(c) the simplicity of the regression models.

The first of these is well and truly overcome with the new technology of cloud computing, where vast arrays of data can be stored and analysed very rapidly. With high resolution satellite remote sensing, obtained on a regular basis, variables such as the size, height, building material (to some extent), garden quality, presence or absence of swimming pool, and environmental quality of the surrounding area, can be determined. A DTM (digital terrain model or better a surface model) allows aspect, light and views to be relatively easily obtained for a property, which is in addition to the data normally provided at the time of a sale, such as number of bedrooms. Geological, water table or other natural impediments, can be determined, if these were required, from geographic information systems or map data. However the main problem with regression models has been the model itself.

Variables such as house size and number of bedrooms, do not add to a property's value in a constant way over an urban area. If sale data from across a large urban area, such as Sydney, is captured and then used to calculate the coefficients of the variables in a simple linear regression equation of the form –

Property Value = A_0 + A_1xBed + A_2xArea + A_3xStories + etc,

,then the statistically calculated coefficients (A_0, A_1…) will only represent average values across the whole of the city for a particular point in time, and will not incorporate any locational or temporal variability. It is fairly obvious that increase in value of an additional bedroom in Vaucluse is much more than for a similar size bedroom in Bankstown, due to the underlying value of the area, which one could call base value (BV). Thus a better regression model would include this base value, for example as -

Property Value = BV (A_0 + A_1xBed + A_2xArea + A_3xStories + etc)

And so the additive value (or negative value) of the property variables will change depending on the underlying base value. The base value can be determined using a trend surface fitting algorithm of all property sales across the area of interest (for example the whole of Sydney), weighted by date of sale, and updated in real time. Thus, inputting the location of a property, plus its variable values, would automatically allow the calculation of the property value at that location and at that point in time. This calculated value may be above, equal to or below the base value depending on the building quality. A similar model could also be developed for strata apartments.

Summary and Conclusions

The base value regression approach proposed would allow the calculated value to closely approach most owners' expectation of what their property is worth. Hopefully this would lead to fewer contested valuations. However it would mean that for two parcels of land with similar qualities, that the property with the more expensive building would have a higher valuation and thus pay more tax and council rates. At the extreme of vacant land being compared to a similar block with a house, which with the current system would be valued equally, it could be said that the vacant block would normally generate much less traffic, have no power requirements, and would not need the provision of any health facilities or rubbish collection. Thus it would not seem illogical for the vacant allotment to pay less tax and rates.

An additional benefit of such an approach would be the online sale of valuation information. A potential seller (or agent) could quickly get a real time estimate of the value and likely sale price of their property, while a buyer could easily determine the likely sale price of a property up for auction or the reasonableness of a listed sale price. At a cost of say $50 per valuation, this could be an additional source of revenue for the government. Another important benefit of this approach would be the importance of the data for historical analysis.

The approach suggested would require legislative change and the statutory modification of the definition of land value, and in particular operational changes to current valuation methods.

I can provide further explanation of this approach if required.

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