LV design is based on statistical methods of diversity and unbalance, ie Diversity Factors and Unbalance Factors, in association with variations in maximum demands which can be influenced by the effects of space cooling and heating, hot water heaters, alternative energy sources etc. ENERGEX's URD system is based on a fully ducted system with above ground terminations in pillars. This approach simplifies testing and fault finding with a relative low cost of augmentation to overcome adverse voltage conditions.

It is therefore important that emphasis is applied to the optimum selection of ADMD. The influencing factors, as listed above, should be evaluated for each individual estate to assist in the selection of optimum ADMD or maximum load condition for voltage drop calculations.

**ADMD Design Values**

Recent years have seen significant growth in residential electricity loads due to a range of factors including; dwelling size, style and density and increased customer reliance on whitegoods and air conditioning. These factors (particularly air conditioning) have significantly increased demand on the electricity network. Accordingly, After Diversity Maximum Demand (ADMD) has been revised as is shown in Table 3.3.2 below.

There is no longer a requirement to perform contingency analysis (eg. for an ADMD of 1.0 kV.A greater than the ADMD used in base calculations)

New developments may occur within or adjacent to areas designed with 'old' ADMD values.

ADMD for the existing area shall be determined (by measurement) and a 1.3 loading factor applied. The measured value shall be added to the new development ADMD to determine the total design ADMD.

<table>
<thead>
<tr>
<th>Design ADMD kV.A</th>
<th>Estate Category</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
<td>Retirement Village Units, Cluster Housing, Duplex Units, Relocatable Homes, Units/Townhouses, Low Cost Housing</td>
<td>Applies to 2 or 3 bedroom houses, eg small low-set.</td>
</tr>
<tr>
<td>4.5</td>
<td>Middle/Upper income housing, High rise residential</td>
<td>Applies to 3 or 4 bedroom homes. THIS IS THE MAJORITY OF NEW ESTATES.</td>
</tr>
<tr>
<td>7.0</td>
<td>Prestige Housing/Units/Townhouses</td>
<td>Applies to large prestige type housing and cluster developments</td>
</tr>
</tbody>
</table>

Notes:
1. Where gas cooking and water heating is used, values may be reduced by 1 kV.A. A written request and supporting documentation shall be submitted to ENERGEX. Approval for such shall be solely at ENERGEX's discretion.
2. Where continuous electric hot water heating is used, increase the ADMD by 0.5 kV.A.

**TABLE 3.3.3**

*Maximum Number of Customers per Transformer Versus Design ADMD (Transformer 125% Loaded)*