

Annex 4 CACI's Spatial Modeller System

The Spatial Modeller tool enables CACI re-calibrate the Retail Footprint model enabling our clients to:

- Evaluate the impact of New Developments
- Undertake multiple impact analysis to develop Spatial Planning policy and inform investment decisions

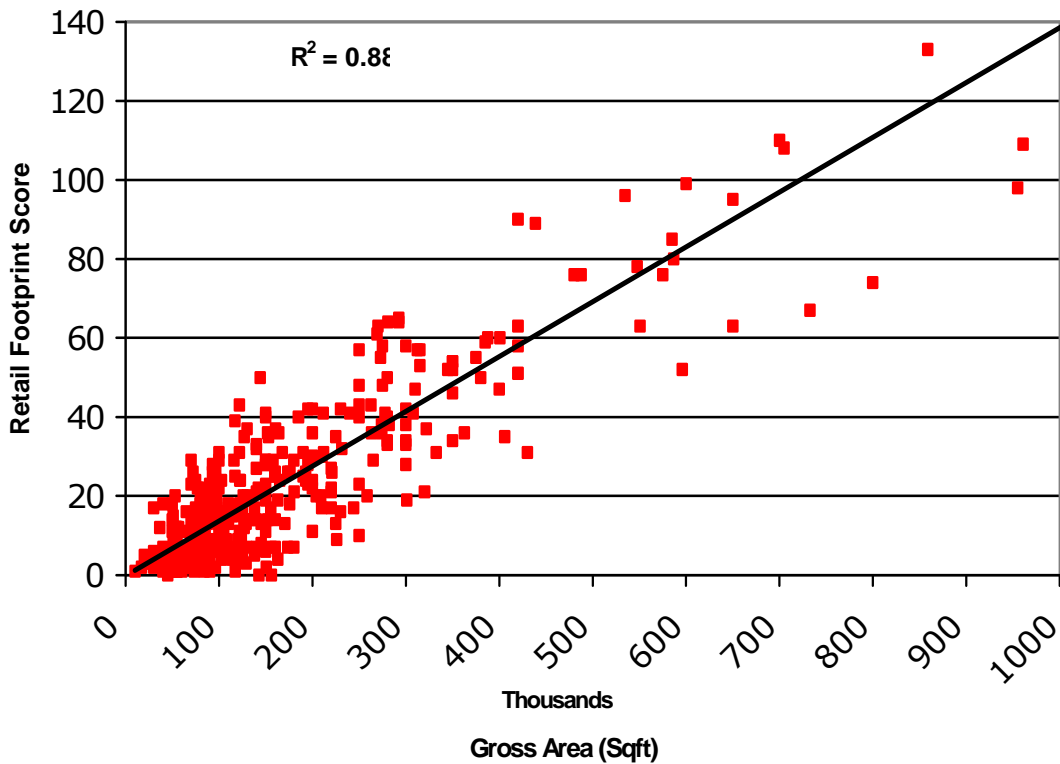
The most common use of Spatial Modeller is predicting how shopping patterns will change as a result of new development, either in existing centres or as new 'Greenfield sites'. The most problematic element in undertaking this type of analysis is determining how development proposals, which are often vaguely described in terms of floor area, translate into changes in the overall attractiveness score of the town or new site concerned. Since Spatial Modeller was first launched to the commercial sector in 2000, CACI have built up considerable expertise in modelling the effect of development on Retail Footprint scores and this experience is explained as two alternative approaches in the following sections. This expertise will be drawn upon in quantifying the retail capacity and identifying impacts upon centres within London.

Regression based approach

To support ongoing retail analysis activity, CACI have created a database of shopping centres and occupiers. This database links individual outlets in the Retail Locations' listings of multiple shop addresses to individual shopping centre locations and can be used to create Retail Footprint scores for individual centres by following the same methodology used to create the general Retail Footprint scores for town centres. The derived scores can be linked to other published data such as gross area or number of units, which allows the relationship between development size and Retail Footprint Score to be investigated.

Figure 2 below plots the derived Retail Footprint scores against the gross lettable area for nearly 400 shopping centres developments. It can be seen that a clear relationship exists between size of schemes and their Retail Footprint scores and this suggests that it is possible to simply predict the likely attractiveness score for a proposed development if its gross lettable area is known.

Figure 2: Shopping Centre RF Scores against Gross Lettable Areas



CACI have created a model that predicts the Retail Footprint score for a shopping centre on the basis of its size. The basic relationship is to simply multiply the gross lettable area for a proposed scheme by 0.000138 in order to estimate its likely Retail Footprint Score. This can then be added onto the existing Retail Footprint score for the town in order to uplift its overall attractiveness.

For example, The 420,000 sqft Chimes centre in Uxbridge opened in August 2001. The estimated retail footprint Score for the development would be:

$$420,000 \quad * \quad 0.000138 \quad = \quad 58$$

This score can be added onto the existing Retail Footprint score for Uxbridge (104) to produce an updated Retail Footprint Score for the town:

$$104 \quad + \quad 58 \quad = \quad 162$$

It should be remembered that for some Retail Footprint Centres, adjustments may be required to take account of existing retail stock replacement (through redevelopment or relocations) in the town.

The table below shows predictions from the model for typical sizes of retail development.

Figure 3 – Predicted Shopping Centre Retail Footprint Scores by Size Band

Development GLA (ft ²)	Predicted RF Score
100,000	14
150,000	21
200,000	28
250,000	35
300,000	41
500,000	69

The simple model outlined above achieves a coefficient of regression of 0.88. This indicates that 88% of the variation in derived Shopping Centre scores can be explained by variations in the size or gross lettable area of schemes in the calibration dataset. While this is a relatively strong relationship for a simple one variable model, there is still some room for error as highlighted by the spread of observations around the trendline in Figure 2.

This spread is caused by various factors such as configuration, obsolescence and competition with rival shopping centres, and it is clear that additional factors such as retailer demand and location type may also have an impact upon the final score when it comes to new centres. It is therefore recommended that the regression model be used as a quick way of initially assessing the likely uplift that a new development may bring to a town however, for a more accurate view a more considered approach should be adopted and this is outlined below.

Systematic approach

The systematic approach for assessing shopping centre scores draws upon published information from Planning submissions, corporate or press sources to construct a score which reflects the mix of activities proposed for the scheme and the impact that the retail market, existing developments and retailer demand might have upon the eventual occupier line up. The advantage of this approach is that non-retail space, for example leisure, can be discounted from the score prediction, so that evolving formats such as mixed-use in-town retail/leisure malls can be more accurately predicted.

Once again, the approach uses supporting analysis from CACI's shopping centre database to determine assumptions such as the typical presence of scoring multiple retailers within the scheme. Analysis shows that in schemes opened during the last 10 years, scoring fascias typically account for 70% of occupiers, although this proportion ranges from 100% in dominant large town developments (e.g. Bon Accord, Aberdeen; Royal Priors, Leamington Spa) to less than 30% in schemes in smaller centres (e.g. Bethel Square, Brecon; The Cloisters, Ely), speciality developments (e.g. Princes Square, Glasgow; The Triangle, Manchester) and weak development in large towns (e.g. Drumond Place, Croydon; Queens West, Cardiff).

The process is as follows:

- Assimilate development information by reviewing planning submissions, property press articles (e.g. propertyweek.co.uk, egi.co.uk, Retail Week) and corporate websites.
- Establish the general outlet mix profile for the development by considering the split of floorspace between anchor stores, medium sized occupiers and standard unit shops. This information may be released as part of the detailed planning submission and consultation process, however; a reliable alternative source exists through letting agents' press releases. These can be intended to test initial market demand or to encourage uncommitted retailers to sign up during full letting of the scheme. As a third alternative, it should be possible to estimate the likely mix profile of a development from its size and broad description.

It can be useful to construct an outlet mix matrix with which to test any assumptions regarding the nature of outlets in a proposed scheme. This matrix simply incorporates known footages for different elements of a development in a table designed to aggregate these elements to the total space announced for the development (it is rare that this figure at least is not in the public domain). By identifying the space available in the proposal for unknown elements, it is possible to test assumptions on their likely nature. For instance, if a 250,000 ft² development contains a 100,000 ft² department store, two 40,000 ft² and one 20,000 ft² medium sized units, the likely number of standard shop units can be calculated by dividing the remaining space (50,000 ft²) by the typical area of a standard unit shop (2,500 ft²). In this case the likely number of standard units would be 20.

Having identified or arrived at assumptions on the breakdown of large and small units in the scheme, the next step is to construct Retail Footprint scores for department and variety stores. At this point, CACI construct a Retail Footprint Score Matrix with which to estimate the overall score for the development and its incremental impact upon the Retail Footprint Score of the town concerned.

It is very rare for department and variety store occupiers to be 'independent' as the financial need for strong covenants to guarantee rental income means that developers favour established blue chip retailers such as Marks and Spencer, Next, Boots, the main grocers and most department store groups. It is also important that all the available anchor store and medium size units are let prior to construction, as this is normally a precondition of funding. This means that the Retail Footprint score can simply match the number of outlets for the medium sized units (as CACI do not weight variety stores) however, department stores must be weighted to reflect the presence of concessions (i.e. stores within stores). CACI have investigated the presence of concessions within various department stores. It should be remembered that further adjustments may be required to reflect the particular size of the department store proposed for a new shopping centre as these can vary according to the size of retail footprint centre concerned.

Create a Retail Footprint Score for the entire development by assuming that every shop unit is occupied by a scoring multiple occupier, adding this to the anchor and medium size unit scores. Create alternative scores by introducing adjustments to reflect different proportions of key scoring multiples amongst the unit shops (Anchor and medium size units are almost always multiples and do not require adjustment). As discussed in the introduction to this approach the presence of scoring multiple retailers in recent developments is approximately 70% of standard unit shop occupiers and it is logical to base assumptions around this level. Where retailer demand is likely to be high, for instance a significant new shopping centre in a major city centre with weak shopping centre provision (e.g. West Quay, Southampton; Bull Ring, Birmingham or Buchanan Galleries, Glasgow), the proportion of multiples should be increased to 80%. Where retailer demand is likely to be weak, for instance a minor development in a town where the existing shopping centre provision is strong (e.g. Prince Bishops, Durham; The Triangle, Manchester) or smaller centre outside the top 50 British retail locations (e.g. Elephant Yard, Kendal; Borough Parade, Chippenham; The Cloisters, Ely), the proportion of multiples should be reduced to 60% or lower. Once again, a matrix approach is useful in testing alternative assumptions.

- Having settled upon a comfortable estimate of the presence of multiple outlets, the Retail Footprint score for the proposed development can be arrived at by aggregating the number of unit shop multiples to the count of medium sized shops and the weighted score for department stores.
- Finally it is important to consider the impact that the new development is likely to have upon existing retailing within the town. It is rare for new centres to enhance towns without changing some aspect of the existing environment, pitch or retailer line up, as developments often replace existing obsolete stock and retailers may relocate from elsewhere in the town, causing sections of the existing retail area (normally peripheral areas) to decline and convert to non retail uses such as offices or residences. To reflect this change it is important to adjust the Retail Footprint score for the proposed development to arrive at the incremental uplift to the Retail Footprint score for the town. Where a scheme is large relative to other developments in the town and located in a new trading location then potential for relocations is high. The impact of relocations in Southampton for instance (particularly Tyrell and Green and Marks and Spencer), means that while the West Quay development has a Retail Footprint Score of 72, the city's Retail Footprint score has only seen an incremental uplift of about 50.

As a basic rule, CACI, down weight centre scores by up to 20% where schemes replace existing stock or where the potential for retailer migration appears high (a dominant scheme in a new location in the town). Adjustments can also be made for relocating department stores to reflect only their relative increase in trading area. Generally, smaller schemes will not require such significant adjustments.