



*International **F**ederation of **M**unicipal **E**ngineering
Fédération **I**nternationale des **I**ngénieries **M**unicipales*

Technical Brief No.4

The urban evolution of Etten-Leur, The Netherlands

This report focuses on the changing evolution of an established community, Etten-Leur, focusing on relevant transportation and economic development issues over the recent 60 years at a local level, offering a view of best practice with providing highways that by-pass communities and developing economic sustainability to these communities, and finally, questions current technical highway design details examines the role of the engineer in arriving at acceptable solutions under competing complex interests.

Background

Etten-Leur, a town with a population of about 42,000 is located in the North Brabant, near Breda and south of Rotterdam. It is an amalgamation of 2 separate towns, which have expanded to form a single community and evolved primarily due to its strategic cross road location which provided a trading position and the resultant economic reason for its existence. The town has an additional claim to fame in that it is the birthplace of the artist Vincent Van-Gough where his father was a local church minister, thus adding to its tourist value as a destination.

The surrounding land is flat and is predominantly a rural setting with scattered villages, individual dwellings and farms. The underlying soils are typical of the Netherlands consisting of sand with a constant height water table of approximately 1.3 metres below ground level.

Around the 1940's the community expanded as did transport and economic development links in relation to the highway crossroads. The developed such that in the 1960's a major highway, on line with the main route through, was constructed. This Highway, assisted by a newly developed shopping centre, enhanced the economic vibrancy to the community. Average traffic volumes on this upgraded highway consisted of 60,000 vehicles per day with traffic and pedestrians crossing the highway using traffic light controls at a series of junctions, especially at the shopping centre.



This Highway, whilst being recognised as a key enabler, through the vibrant shopping centre, in providing a good economy to the community also acted as a major barrier in segregating the community.

In 1986, a new highway to bypass Etten-Leur was planned to remove traffic and re-join the community once again. This new Highway was constructed and opened in December 1999 and is considered an asset by expanding economic development through additional industrial developments.

Providing this by-pass raised a number of questions and concerns with the community. The key issue surrounded the expected detrimental economic impact would have by reducing customer footfall and what action could be undertaken to mitigate this anticipated loss of trade and affecting the shopping center's relevance.

Other issues to be resolved were how do you remove the old highway as a barrier, but balance this against maintaining its access function, and best address the need to make new and integrated connections across the old highway?



As a result of careful consideration and community concerns a range of firm undertakings were included within the development strategy.

The town's rural setting and limited access and development opportunities to Public Transport recognised that the car as a form of transport needed to be accommodated but without retaining the previous dominant factor. It is worthwhile pointing out that, as throughout the low countries, cycleway's are provided as a routine but the decision to accommodate the car was in recognition of the surrounding low urban density, forming the larger shopping catchment area.

The historic public space of Etten-Leur is clearly a pleasant environment worthy of enhancement with a strong emphasis on developing the centre as an improved place. A commitment by the Municipality that maintenance of the resultant public realm was to be given the highest consideration into the future, thus enhancing not only its sustainability but accentuating the place as a desirable destination.

The key municipal consideration was to maintain the town's economic vitality and retain its relevance as a shopping centre through developing a new multi-functional town centre based on community needs.

The Plan

A major advantage in controlling the proposed development design was that the Municipality had ownership of the land over which the original highway ran. This, together with the adjoining shopping centre provided sufficient space to make the envisaged development attractive to as a commercial opportunity to a private Developer.

Funding was raised through a combination of National Government grants as compensation for the old Highway, local Municipality contributions and the sale of the old Highway land to Developers to build on provided sufficient funds and made a viable case to proceed with a realistic commercial development project.



The Municipality set out a range of development requirements in return for land and opened the overall project up a competitive design under European tender conditions.

- The Municipal City Plan, consisting of 8,5 hectare, set requirements consisting of:-
- **Underground car parking with 1000 places**
- **14.000 m2 shops**
- **2000 m2 catering (to assist disabled people into meaningful work)**
- **350 apartments**
- **59 houses**
- **New city office 7500 m2**

The 5 years construction period reflected the site scale whilst maintaining the city centre function.

To address the underlying sandy soils and high water table interlocking sheet piling was required to facilitate the car park's construction.

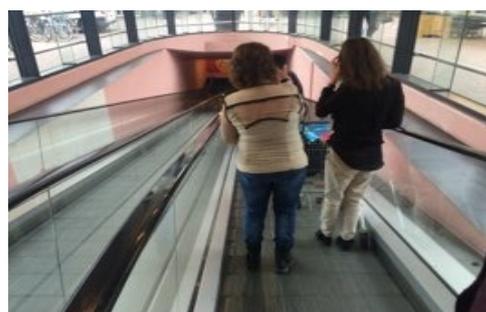
The sandy soil type lends itself to good compaction and therefore more suitable for achieving a durable modular block surfacing finish common in the Netherlands. This detail also has a positive impact for installing utility apparatus unobtrusively and reducing the visual impact of reinstatements.

The redesigned road was to accommodate pedestrians, cycles and vehicles. The community encouraged the use of lots of trees to soften the impact of the original highway and enhance green space, also the use of narrow trafficked lanes emphasis a change in infrastructure nature.

To emphasis the place making aspect, a range of Art details are included into the overall design.



The car park is a key “public space” to enable vitality and as such it must be an attractive, safe, clear and bright area. To assist this and as the car park is large, a range of coloured areas are included in the design to both provide a pleasant atmosphere and assist in locating parked cars.



Pedestrian access to the car park is via covered ramped escalators that can accommodate shopping trolleys, directly from a pedestrianised area above.

Vehicular access to the underground car park uses the route of the old highway. In conjunction with these new access points, provision is made for a public transport stop.

The Developments central pedestrianised area created a clear public space, where street furniture obstacles were minimised to assist disabled or visually challenged users.



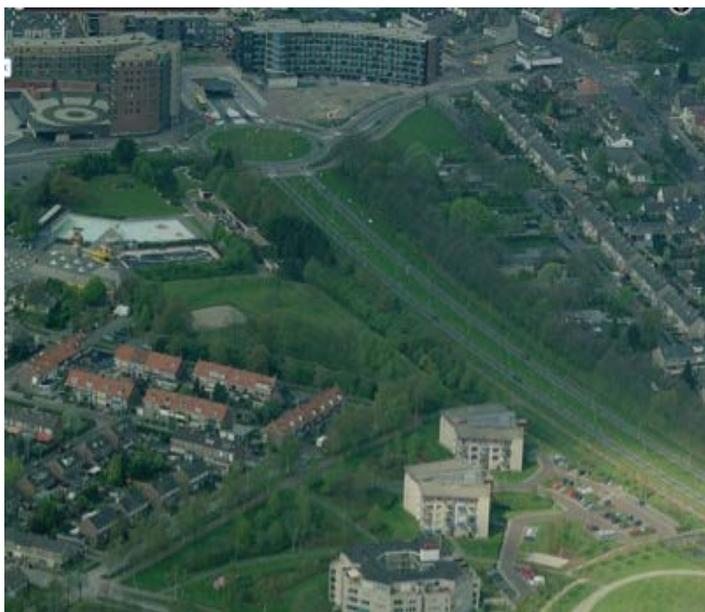
To encourage a mix of occupancy types in the town centre a range of housing and accommodation is incorporated in the final plan. The Municipality made clear that they have had no discernible social issues with mixing this range of occupancy types.

In addition, what is termed “proportionate care buildings” are incorporated to the housing mix. This provision is predominantly focused on those who are considered disabled, which ranges from traditional understanding of disabled people needs to older people who are coping with decreasing abilities. These buildings provide a range of function from eating-only facilities to meeting a more demanding medical function.



In addition to the road improvements there is more and varied housing within the centre of the community all of which is within a walkable distance, the combination of all these aspects has generated a very noticeable increased with the on-street community. To further generate and encourage footfall, assisting a recognised and vibrant community centre, the Municipality arrange a weekly series of events, markets and marathons etc.

Municipal Waste Management is considered at the design stage such that by being built into the buildings or underground in the street it becomes routinely un-noticeable. Also, strong emphasis is given to maintaining clean public areas that function well.



Etten-Leure is very proud of its Environmental responsibility, generally there is a lot of green space and this is accentuated on the land the old highway occupied. Also include within the development are a range of green technologies consisting of wind turbines and ground source heating to name some. Sustainable Urban Drainage Systems (SUDS) are incorporated to produce “swimming pool” quality ponds for public space. SUDS’s, consisting mainly of rainwater is filtered naturally to achieve swimming quality water.

The final project addressed major issues associated with the highway such as an urban barrier, traffic noise, air quality and other related issues with a major urban highway. The care taken with the final design resulted in a change in perception by the population. Locally the transformed road is now referred to as the Champs-Elysees of Etten Laur. Clearly there is a great deal of civic pride in the transformation resulting consequently in adjacent house values increasing as the local setting is increasingly appreciated.

From a traffic management aspect the transformation has been a success. The Municipality has reduced the number of traffic light controlled junctions with only 4 set of lights remaining now, enabling easier travel around the town. On enquiry the Municipality reported that accident statistics have dramatically reduced, along with improved journey times, perhaps understandably,

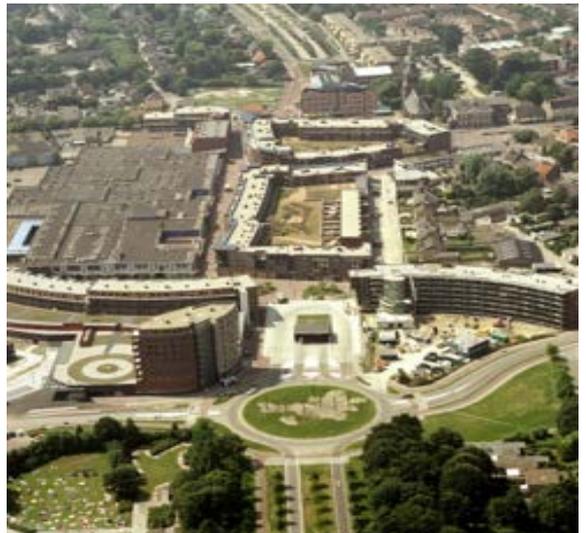
Observations and Conclusions

There are a range of decisions that, surprisingly for the Netherlands and its relationship with cycling, recognises the function of the car in relation to economic vibrancy. These decisions were influenced by other considerations such as a low population density hinterland associated with a rural catchment area.

In addition the decision to provide underground car parking and integrate this within a city centre development was a key move in gaining added land value to the project. Indeed, without this decision it is questionable if the economic outcome would have been successfully delivered. The inclusion of a traditional large surface car park to meet parking provision would not have generated the same enthusiasm for the town centre as a destination.



The transformation of removing the scar of the original Highway was always going to be a challenge but this is successfully achieved in this case. From ground level the wide road boundary is not apparent and together with the use of extensive green space and narrow trafficked lanes the perception clearly indicates a changed urban priority with traffic speeds being noticeably lower.



The concept that building a by-pass has grave negative economic impacts on a community has been proven wrong if key decisions are made as demonstrated in this case study. However, the key relationship between transport and economic development is clearly demonstrated here.

In addition and fundamental to this study case was that the Municipality had ownership and control over much of the land to enable this project to proceed as they and the community intended.

John Thomson C.Eng. C.Env. FICE FIAT

Vice-President of the International Federation of Municipal Engineering.

ICE Municipal Expert Panel