

The Appliance of Dutch Cycle Experiences in Colombia. in the process of developing a bicycle infrastructure in Santa Fé de Bogotá

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Summary

This paper tries to give some insight in process of introducing elements of a highly developed bicycle culture in a society where the bicycle is mostly seen as a recreational means of transport. Considering the fact that the Netherlands have a long bicycle tradition it is logical to presume that there is a great variety of good and bad practises on how to design bicycle infrastructure. In the Bogota case making traffic designs was not the problem as well the lack of specific tools for developing an adequate high quality cycle infrastructure. Essential for efficient interchange of demand for and the offered expertise is to make a good working division between local and foreign expertise. Strength of local engineers is their knowledge of local habits, institutions involved and general criteria for traffic designs and studies. Also where to obtain necessary data is within their reach. To make foreign expertise input most efficient it is recommendable to put more emphasis on training and expertise building than on only the final products. However more intensive and costly on the short term it makes the input of expertise from abroad on the long term less. This ensures more continuity and durability for an autonomous process of integrating bicycle promotion programs. Experiences and high quality expertise of cycle expertise from countries as the Netherlands should be exploited to stimulate local visions and possibilities on cycling by handing over the tools to secure this vision by means of training, coaching and capacity building programs.

1. Introduction

Looking for solutions for its enormous traffic congestion the environmental problems, the local authorities of Santa Fe de Bogota choose promotion of bicycle use as one of the solutions for their traffic problem. The acknowledgement of limitations in local experiences for the autonomous development of a bicycle promotion program lead to the invitation of various foreign transport experts to assist in this process. Apart from developing a Bicycle Masterplan for Bogota, almost simultaneously a first pilot plan was started in developing a first cycle track as a part of the to be developed main cycle network of 150 kilometres. Dutch cycle expertise (i) was contracted to assist Colombian engineers in developing studies and designs for the first separated cycle route in one of the main (sixty metres width) corridors of the city. In the next part some insight is given in the process of introducing elements of a highly developed bicycle culture in a society where the bicycle is mostly seen as a recreational means of transport.



Cycling as part of Dutch culture, a painting on a front porch (Photo: Ton Daggers).

2. Starting point

In 1998 0.58% of all daily trips in Bogota were made on bicycle. As in most Latin American cities public transport took the largest share of all trips (56%) (ii). In the Terms of Reference for the design and studies of the cycle road in the 'Calle 80' criteria from the Dutch manual Sign up for the Bike (iii) for a cycle network were used. (safety, comfort, coherence, attractiveness, directness). Also great emphasis was given to the attractiveness of public space as in the overall prioritisation of improving the urban transport system pedestrians were # 1 on the list.

At the start of the process a team from Colombian and Dutch experts was formed to elaborate the following products:

- Study on alternative locations and type of cycle track
- Geometric design of the cycle track
- Traffic studies
- Economic cost benefit analysis
- Manual on parking facilities
- Design Manual
- Calculation of quantities and cost
- Study on environmental impact
- Manual on traffic signals
- Maintenance Manual

In the process of defining the definite location of the cycle track in the corridor of the Calle 80 it became clear there was a lack of communication between different institutions involved.

It became clear that the relatively simple fact of designing a cycle track was in reality a struggle for space between different modes of transport. Whereas in Dutch culture cycle infrastructure is mostly

integrated in urban road planning, in the Bogota case almost "every inch" had to be struggled for between public transport planners, pedestrians and defenders of car users interest. In this initial phase of the project cycling was more considered a competitive mode and not as a complementary means of transport to public transport and pedestrians.



3. Products , results and differentiated inputs

3.1 Study on alternative locations and type of cycle track

First of all the localisation and characteristics of the cycle track in the corridor had to be defined. Scenarios were shown with its consequences to local decision makers in order to obtain a preference. One way and two way variants were explained with their different dimensions and other implications. One of the variants included was even an elevated cycle track. According to the general criteria of safety, comfort, directness and attractiveness a methodology was introduced to balance the different criteria in order to get a value for every possibility. Results were presented to a broad forum of interested people and institutions with the objective to stimulate an active participation for the ongoing project. It was estimated that this participation in the initial phase would lead to more co-operation with this project and in the future would lead to easier integration and reservation of space for future plans for cycle infrastructure.

The study on the location of alternatives was almost completely based on foreign expertise. Criteria were developed to analyse the consequences of different locations (middle verge, side verges), consequences of different types of cycle tracks (traffic in both directions, one direction or combination of both) and the consequences related to general criteria as safety, directness, comfort etc)

3.2 Geometric design of the cycle track

Items included here were design models and aspects of crossings and tracks, type of surface, measures to reduce car speed in order to guarantee safety of cyclists. Different types of existing crossings were analysed and models developed to adapt different crossing for cyclists. Where Dutch input of expertise was focussed on introducing innovating models and concepts, the Colombian input was based on knowledge related to traffic flows and intensities which were included to the new introduced concepts. The input for design principles and models came 100%

from Dutch expertise. However discussions how to integrate this principles in the Bogota situation took place in various workshops and other working sessions during the total process of designing.

3.3 Traffic studies

In theory it would have been possible to execute the traffic studies completely with Colombian input. The biggest problem here was mostly the lack of available data which created some problems. In reality Dutch expertise was based on data delivered by the Colombian counterpart.

3.4 Manual on traffic signals

The fact that cycling is not a substantial part of the traffic in Bogota made it necessary to develop a complete new system of horizontal and vertical signals, including traffic lights, related to cyclists. Sign to advertise other road users for cyclists, approaching speed humps and other speed restrictions as well as giving right of way to cyclist are only few of the examples which are completely new in Colombian traffic culture. Latin American standardisation is on its way but as far as traffic signals cycling are considered a long road is laying ahead. Dutch input though presenting manifold of examples of traffic signals, was limited due to the fact that introducing new traffic sign has to be legislated on national level . Campaigns for traffic education on schools, radio and television have to be developed by local experts and institutions involved.

3.5 Manual on parking facilities

As there were no facilities for bicycle parking , standards had to be developed. Calculations on locations and demand for bicycle parking facilities could have been done with Colombian input. Assistance on technical data related to the parking facilities was the limited foreign contribution.

3.6 Design Manual

Standards for designing a high quality cycle track, and models to be applied were a 100% foreign contribution. The design manual can be seen as the main tool for local traffic engineers in realising new cycle road designs in the future. However it must be realised that it is based on Dutch experiences and therefore cannot simply be copied. An important feature of designing cycle infrastructure is that it is characterised merely by the need for detail. It is of utmost importance to develop a set of design tools adapted to the local and micro scale. Further expertise building and dissemination of the already existing expertise is recommended.

3.7 Maintenance Manual

In this document a 50% input from each nationality could have been possible. Technical aspects of different types of maintenance and the criteria to be introduced were developed by Dutch experts as Colombian experts executed the calculations of relevant costs.

3.8 Study on environmental impact

As this is merely obliged by local conditions and standards, Colombian experts for 100% elaborated the content of this document.

3.9 Calculation of quantities and cost

It seems obvious that local experts have the best knowledge about cost and prices of materials and equipment, so on the moment there was a mutual agreement about the design and the choice of materials to be used, calculations on quantities and costs are best done with local expertise.

3.10 Economic cost benefit analysis

The Bicycle Project being financed with a loan of the World Bank could not do without a cost benefit analysis. Because of lack of data on substitution effects of motorised traffic by cyclist,

data from other countries had to be used. Dutch expertise developed a model to estimate possible benefits of potential cycling in different scenarios.

4. The value of the Dutch experience

Considering the fact that in the Netherlands there is a long bicycle tradition it is logical to presume there is a great variety of good and bad experiences on how to design bicycle infrastructure. In the Bogota situation making traffic designs was not the problem as well the lack of specific tools for developing an adequate high quality cycle infrastructure.

The lack of specific tools and considering the fact that developing a high quality cycle infrastructure in an urban area is merely a matter of details, makes it logically that only a very intensive co-operation between experts from different countries could be productive. Key factors for success apart from good communication include the use of the participants strengths without neglecting the respective weaknesses. In the Bogota case this means that efficient use of local knowledge has been made. Which means the existence of a team of well trained experts. Also availability of necessary data is to be considered a component for success, which in the actual case was of more complex matter..

As Dutch expertise is considered it should be realised that the expertise offered should be acceptable in local circumstances: "Dutch experts coming from a bicycle paradise" should put their feet on the earth and open their well filled toolbox to give a realistic scenario of possible changes for cycling in the future.

Bicycle culture and tradition is an essential part of the Dutch culture. The status of cycling is one of the essential items to be taken into account when initiating a promotion campaign. Therefore a plan for cycling should be developed during the long term of the whole process.

Notes

- i. Ice (Interface for cycling Expertise) was invited to execute the contract and subcontracted IBC to do the project management.
- ii. Plan Maestro de Ciclorutas para Santa Fe de Bogota, Alcaldia Mayor de Santa Fe de Bogota 1999
- iii. Sign Up for the Bike, CROW, Ede, 1993
- iv. for further information contact:
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References

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