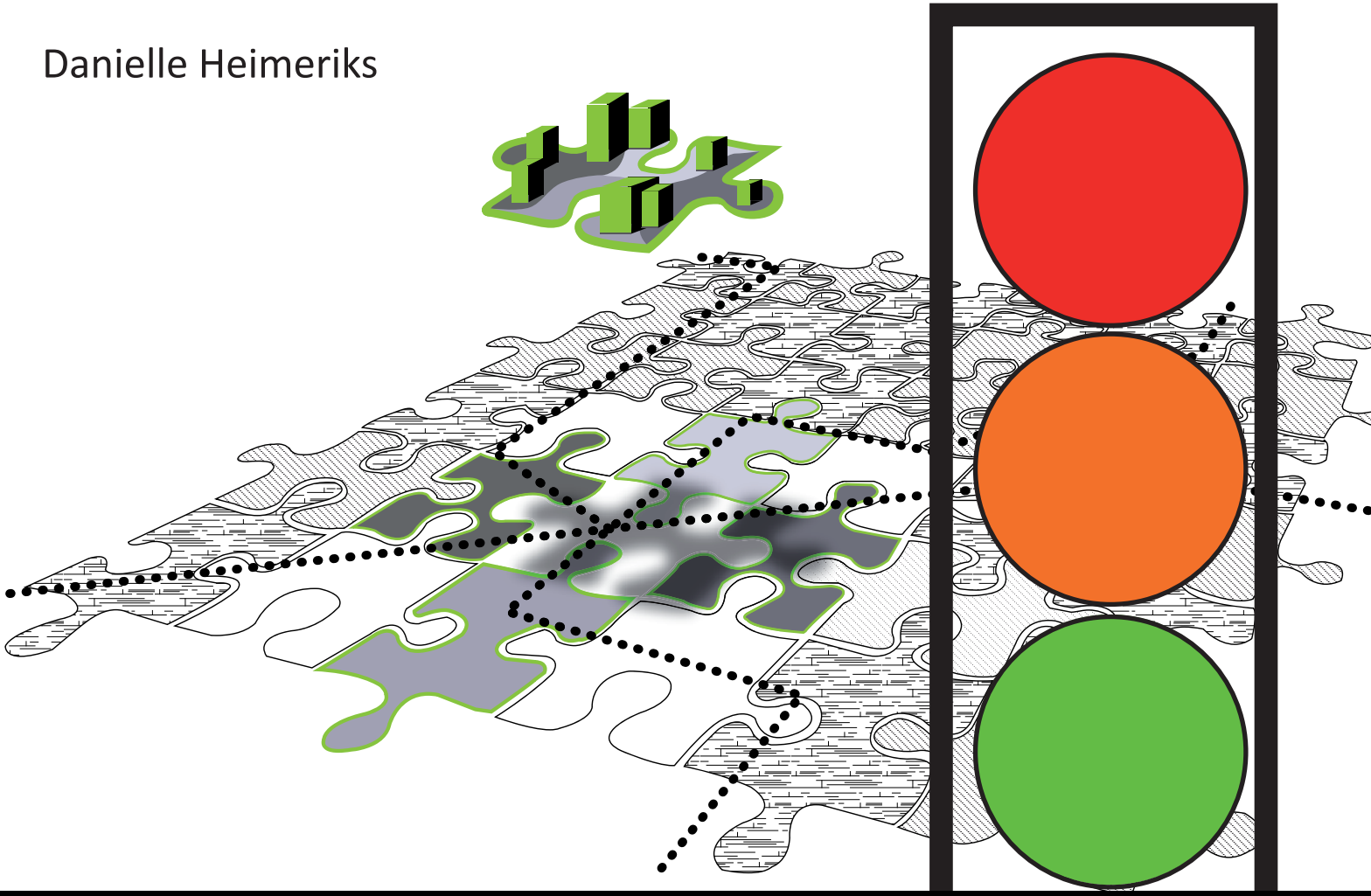
From transfer node to urban node

Integrating multimodal transport hubs in the city fabric.

Danielle Heimeriks



Traffic Light Method

- THE SCAN -THE CHECKLIST- THE MEASURING RULE

an indicator for the Human activity and
social interaction at mobility environments

Colophon

Traffic Light Method- THE SCAN -THE CHECKLIST - THE MEASURING RULE. *An indicator for the human activity and social interaction at mobility environment* is an addition to the thesis:
From transfer node to urban node
Integrating multimodal transport hubs in the city fabric.

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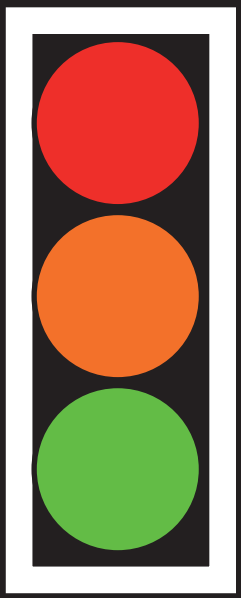


1.1 INTRODUCTION

When functions a transfer node also as an urban node? A piece of city, an urban sub center? A place of staying, transfer and meeting? A place for regional users and local inhabitant? Al these questions represent a complex problemfield. It is about the interface of mobility and city space; capture the fusing of both qualities that they possess.

The traffic light method is brought to life in order to give an indication on the node, place and space quality of a mobility environment. This node, place and space quality result in a quality of perception. The variable for the quality of perception and the node, place and space quality is human activity and social interaction.
Out of the theoretical research a CHECKLIST, a SCAN and the MEASURING RULE rule that can help validating the transfer node in terms of human activity and social interaction is obtained. The CHECKLIST helps validating a case, the SCAN represents and structures the outcomes in clear visible way. The MEASURING RULE places the case in value of being a transfer node towards an urban node. Because of this visualization, the method, can be next to a analyzing tool, be a discussion tool.

This booklet gives a clear description on how to use and read the SCAN, the CHECKLIST and the MEASURING RULE and provides in background theory on every criteria. The booklet is in addition to the thesis; From transfer node to urban node. Integrating multimodal transport hubs in the city fabric.

Context.

The unfold and mobile city asks for a new interpretation of the public space. With the rising of the network city, the old, traditional public spaces (squares, streets in the old inner cities) are no longer the exclusive points of integration for spatial, social and cultural developments.

New points of human interaction can be found where the ‘spaces of flows’ meet the ‘space of places’; a diversity and frequency of users/ travelers are there. An example of such a point is a multimodal transfer node. These grounds are public spaces of a moment of condensated movement in the mobile world, the potential interaction places where the global meets the local, next to the traditional public spaces (Hajer and Reijndorp, 2001).

What is the position of a multimodal transfer node as a public space in the contemporary city? As said, the field of tension lies between the traditional public space and the mobility environment that could be function as a public space. The tension does not lay in their existence next to each other, but in their fundamentally different appearance and role in city life. A good city square in the middle of an historical city centre does not automatically work out in that shape for a mobility environment. A balance between the mobility aspect and the actual space quality aspect have to be found in order to transfer a mobility environment into an attractive place of staying.

A similarity that the traditional public place and the mobility environment share is that they both have the opportunity to generate human activity and social interaction. A combination of the more general principles of public space and the mobility value of the mobility environment have to be found in order to generate this human activity and social interaction.

Being accessible and providing a variety of users with a diversity and frequency of human presence does not mean that human activity and social interaction will take place. The question is, under what conditions, (leading factors); a multimodal transfer node becomes an attractive place for public purposes in the contemporary city: next to being a space of transfer, a space of staying and a meeting space.
This question is answered in a literature study (Heimeriks,2010). The result of this literature study can be seen as the base point of the method.

1.2 RED, ORANGE AND GREEN

The title 'traffic light method' is chosen because the colors that are used for filling in of the SCAN by the results of the CHECKLIST. The colors that are used are equal to the colors you can find on a traffic light (figure 1.1). The benefit is that the filled in SCAN, speaks for itself. The chosen colors are clear;
red; lots of improvement can be done
orange; some improvements can be done
green; improvements are not necessary.

The point of departure and the eventual aims for the project in question decides whether or not the circle stays orange or red (or green) .

1.3 TOOLS

The traffic light method contains out of three tools. They will be quickly described. Every tool has his own chapter in this guide and will be explained more carefully and deeply in every chapter.

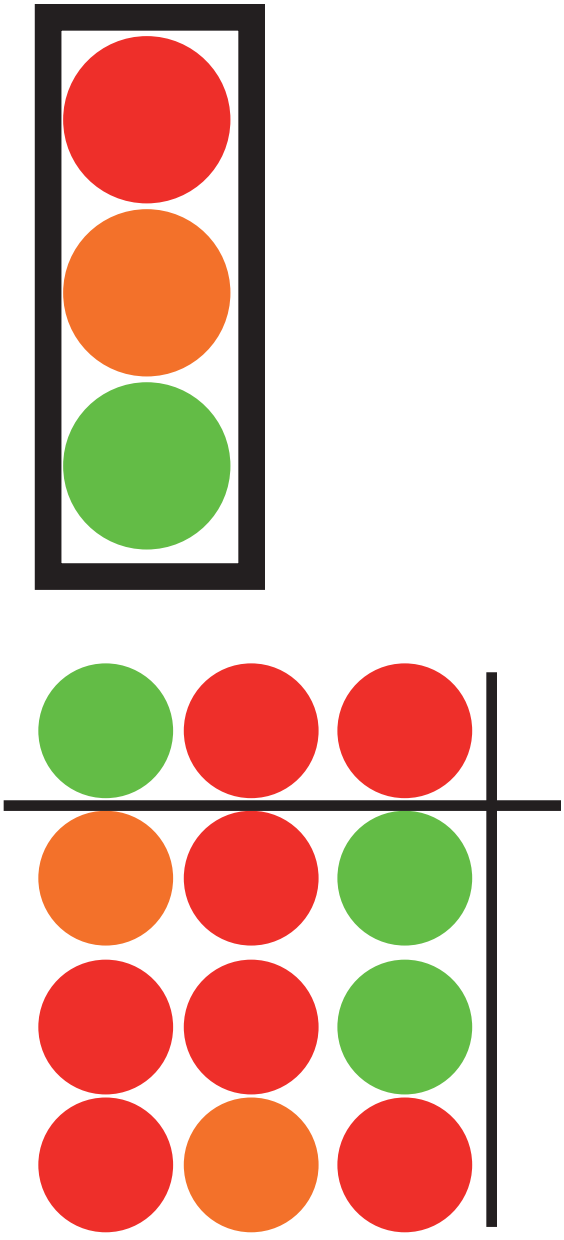


figure 1.1- a fictional example of a filled in scan

Tool 1 THE SCAN

The SCAN (figure 1.2) includes the four main leading factors for the facilitating and stimulating of human activity and social interaction at a multimodal transfer node. These leading factors are expressed in 4 types of qualities; node, place, space quality (physical dimension) and the quality of perception (mental dimension). Every quality is divided in 3 aspects . These separate aspects (the circles) of the physical dimension can be measured/ indicated by the CHECKLIST.
When measured, every aspect (circle), has got his own validation by the colors green, orange and red. How to use and read the SCAN precisely is elaborated in in chapter 2 The SCAN. Here also some theoretical background is given.
Literature used for composing the SCAN: Bertolini (1999), Gehl (2002), Gehl (2006), Read & Rooij (2008) and The Project for Public Space (1999).

Tool 2 THE CHECKLIST

The CHECKLIST is developed in order to be able to give a value to every aspect of the SCAN (every circle). Every aspects is checked on some points, which results in a value; +, +- , -. When al points are counted, the color green, orange or red can be assigned to the aspect.
How to use the CHECKLIST precisely is elaborated in in chapter 3 The CHECKLIST. Here also some theoretical background is given on each point that is going to be checked.
Literature used for composing the CHECKLIST: Bach (2006), Josselin de Jong et al (2008), Gehl (2002), Gehl (2006) and The Project for Public Space (1999).

Tool 3 THE MEASURING RULE

The MEASURING RULE (figure 1.3) is a visual way to give an indication of the result of the SCAN AND CHECKLIST; The MEASURING RULE places the case in value of being a transfer node towards an urban node.
Literature used for composing the MEASURING RULE: (Gehl, 2006)

1.4 THE VALUE OF THE METHOD

The SCAN and CHECKLIST are useful tools to study and approach the area per object and per scale, which can be helpful by unraveling de complexity of designing a transfer node: Finding a synergy between scales, mobility values and public space values proved to be a hard task.

The gathering of mobility values and public space values in one SCAN (supported by the CHECKLIST AND MEASURING RULE) is very important in the approach of such task to tackle and create awareness of the problems at mobility environments concerning different scales. Often regards the local integration.

The traffic light method is easily to read (direct indication of the problem field by the colors red, orange and green) and helps In arousing discussions (‘I think it is fine to keep the circle orange ’). In the end, it is about the vision towards an area, the method helps to display the weaknesses and strengths of an area and during the design process to think structural in order to solve the problem . The SCAN is a useful tool to approach a design task more structural and strategic.
For users that are more practically- oriented , the method works as a guide through the process. For the users of the method who are more theoretically based, the method can be used more structural.

NOTE: the CHECKLIST, SCAN and MEASURING RULE only give an approach and indication of elements that could be improved in an area, or that are already good enough. It is important to keep in mind, that some aspect can not be measured on a specific location with this generic method (CKECKLIST). This is why, the method is a good and important first step as an indicator and a guidance during analyzing and developing. It does certainly not provide in ready-for-use solutions. Specific analysis towards visions, aims and urban characteristic on the location are necessary in addition to the traffic light method.

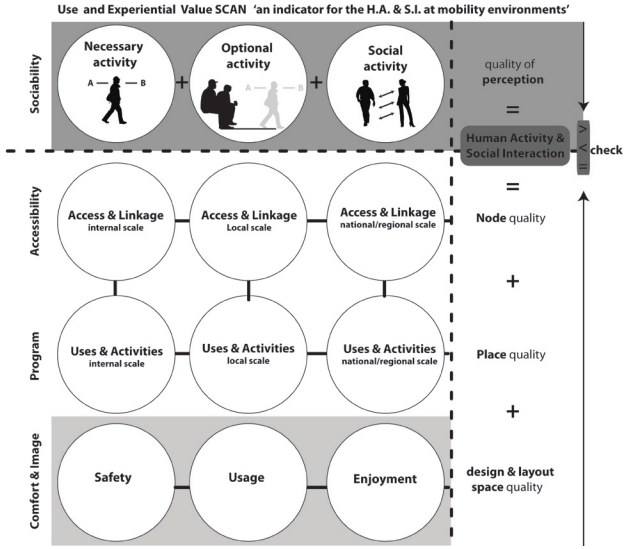


Figure 1.2- Use and Experiential value SCAN

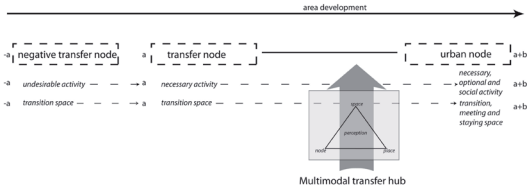
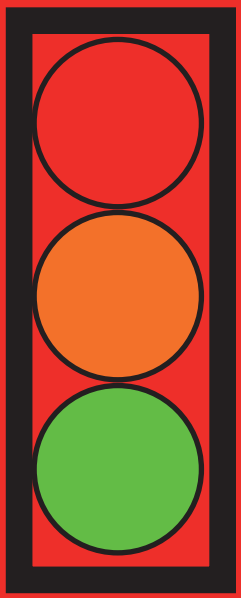


Figure 1.3- From transfer node to urban node MEASURING RULE

2. THE SCAN



2.1 THE SCAN

Out of the theoretical research a CHECKLIST, a SCAN and the MEASURING RULE rule that can help validating the transfer node in terms of human activity and social interaction is obtained. The CHECKLIST helps validating a case, the SCAN represents and structures the outcomes in clear visible way. The MEASURING RULE places the case in value of being a transfer node towards an urban node.

Being accessible and providing a variety of users with a diversity and frequency of human presence does not mean that human activity and social interaction will take place. The question is, under what conditions, (leading factors); a multimodal transfer node becomes an attractive place for public purposes in the contemporary city: next to being a space of transfer; a space of staying and a meeting space. It is all about the interface between mobility and city space; capture the fusing of both qualities that they possess. The SCAN captures this interface.

This chapter will explain the SCAN; how it was obtained , how to read it and how to use it.

2.2 COMPOSING THE SCAN.

The SCAN is a combination of theories. Theories out of the perspective of mobility and theories on the field of creating good public space. Public space, public realm and city space; however you want to name it, they all have the need for human activity and social interaction in order to become a success (‘used’). If the aim is to reach human activity and social interaction, we could say, focusing on transfer nodes, that combinations of the theories standing below are the most desirable combination of factors to reach this:

-*The 12 quality criteria for city spaces*. From the perspective of the user; what are their need and demands for the providing in good public space quality (Gehl, 2006) (figure2.4).

- *Three categories of activity that can be carried out in public space.* From the perspective of the user, how does a person experiences the public space? (Gehl, 2002).

-*The list for developing a public realm at passenger transportation interchanges and the Node and Place model.* From the perspective of mobility, the ideal combination of accessibility and program, translated in a more pragmatic approach to the integration of mobility environments on different scales in order to become accessible for a variety of users (Bertolini, 1999) (figure 2.3).

-*Integration of mobility environment regionally, locally and internally.* From the perspective of different scales

Figure 2.1: What makes a great place? (Source: The Project for Public Space, 1999).

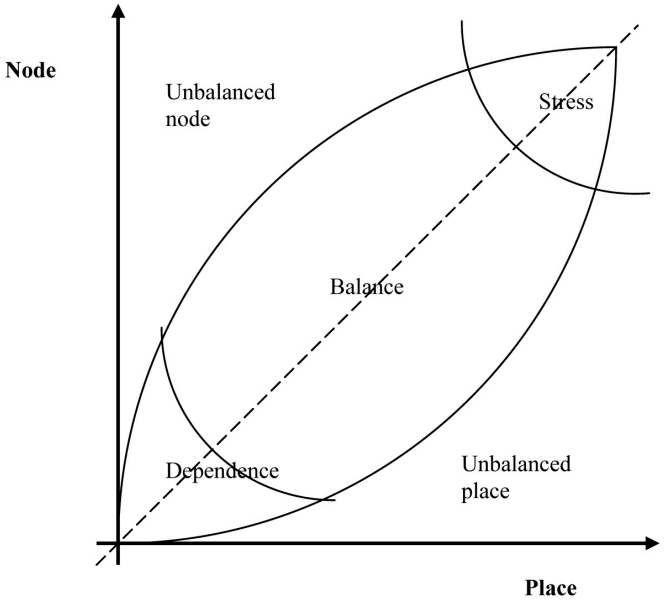


Figure 2.2: Node & Place model (Source: Bertolini, 1999).

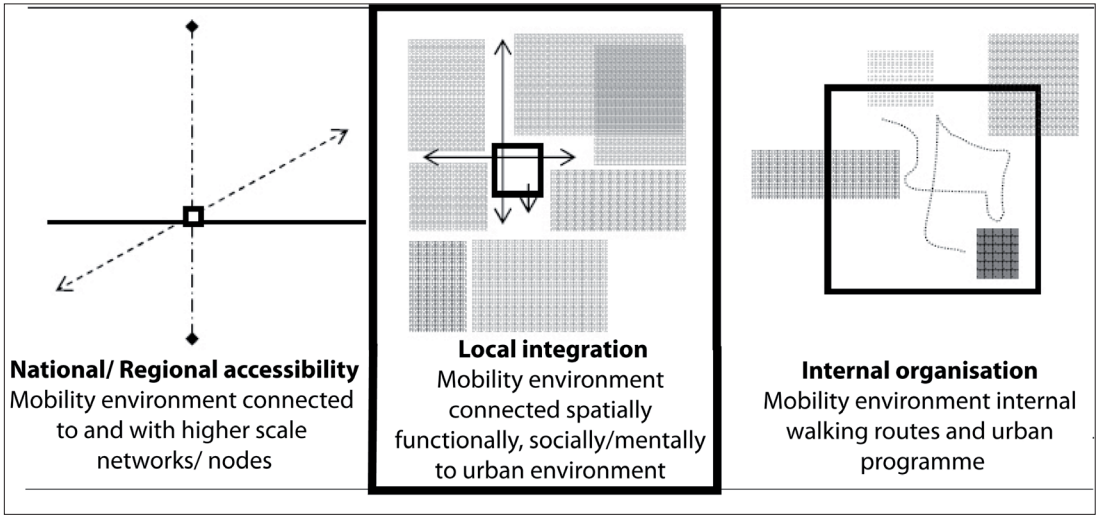


Figure 2.3: Conceptualization of the integration of Mobility Environments regionally, locally and internally (Source: Read & Rooij, 2008) .

Figure 2.4: The 12 Key Quality Criteria for city spaces (source: Gehl, 2006).

in order to provide integration (Read & Rooij, 2008) (figure 2.3).

-*What makes a great place?* From the general perspective in public spaces (The Project for Public Space,1999) (figure2.2).

These are the theories that are laying on the foundation of the SCAN. By using these theories the strength of the situation (place), the network (node) and the design and layout (public space quality, or 'space') are combined. This combination results in the following 4 main leading factors (figure (figure2.5):

- Comfort and Image (Safety + comfort + en joyment), provides in the overall (public) space quality.
- Accessibility (Access and Linkage on inter nal, local and regional/national scale), pro viders in the node quality.
- Program (Uses and Activities on internal, local and regional/national scale), pro-

vides in the place quality.

The combination of these three factors gives an indication of the conditions for Human Activity and Social interaction. The strength of the perception of the user. This will lead to the fourth criteria;

- Sociability (necessary activity, optional activity and social activity), provides in the quality of perception.

Figure 2.7 shows the SCAN; the final arrangement of the criteria and the other theories of mobility and public space. The scan is a blueprint based on Gehl's (2006) scheme for the 12 Key quality criteria for an enjoyable city space. Only the completion is fundamentally different. In this SCAN program, accessibility and sociability are added. In this way we are able to 'rank' elements in order to give an indication of the human activity and social interaction at the transfer node.

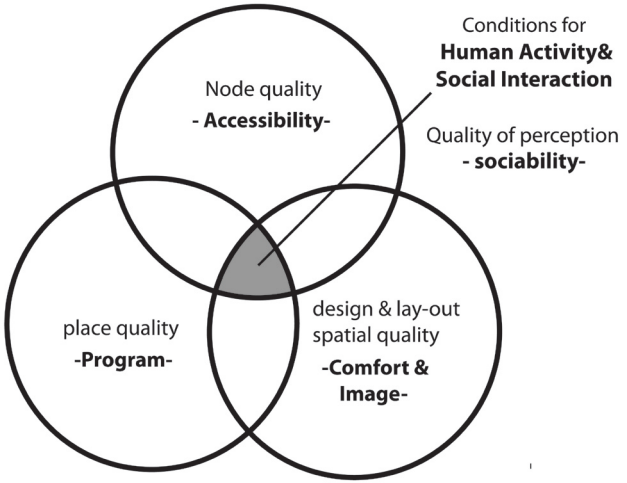


Figure 2.5: 4 main criteria- accessibility, program, comfort & image and sociability (source; by author).

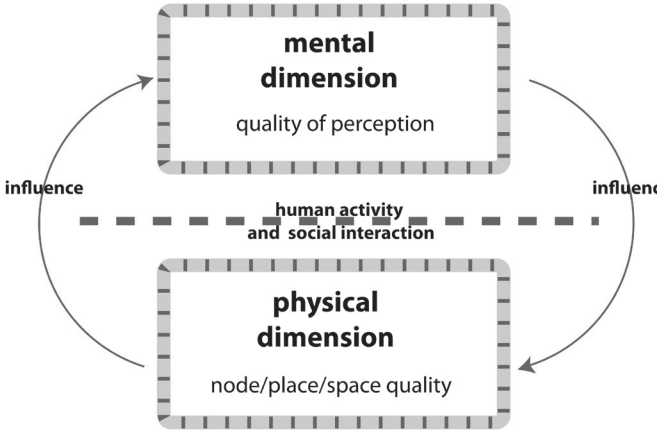


Figure 2.6 : relation physical and mental dimension (source: by author)

Physical and mental dimension

Comfort and image can be seen in the SCAN as a separate layer representing design and layout of a public space, the space quality. Safety, usability and enjoyment are characteristics that every public space should persuade in. Safety, usability and enjoyment are, according to Gehl (2006), the key quality criteria for city spaces. (NOTE, Gehl does not use the word usability but comfort.)

Accessibility and Program at the contrary, are closely influencing each other. They represent the node and the place value (Bertolini) of the passenger transportation interchange and cover the three important scales internal, local and national/ regional scale) (Read & Rooij, 2008).

The node , place and space quality are named under the physical dimension (Figure 2.6). It are all factors that can be seen as the 'touchable' part of the SCAN. Sociability, the quality of perception, however, is named under the mental dimension. We can see this as the 'human' part of the diagram.

We use the quality of perception as the comparative factor: 'to control'. This is important because the social dimension are constantly changing compared to the physical dimension. The balance between the physical and mental dimension has continually be reviewed and shift down. (teruggekoppeld) .

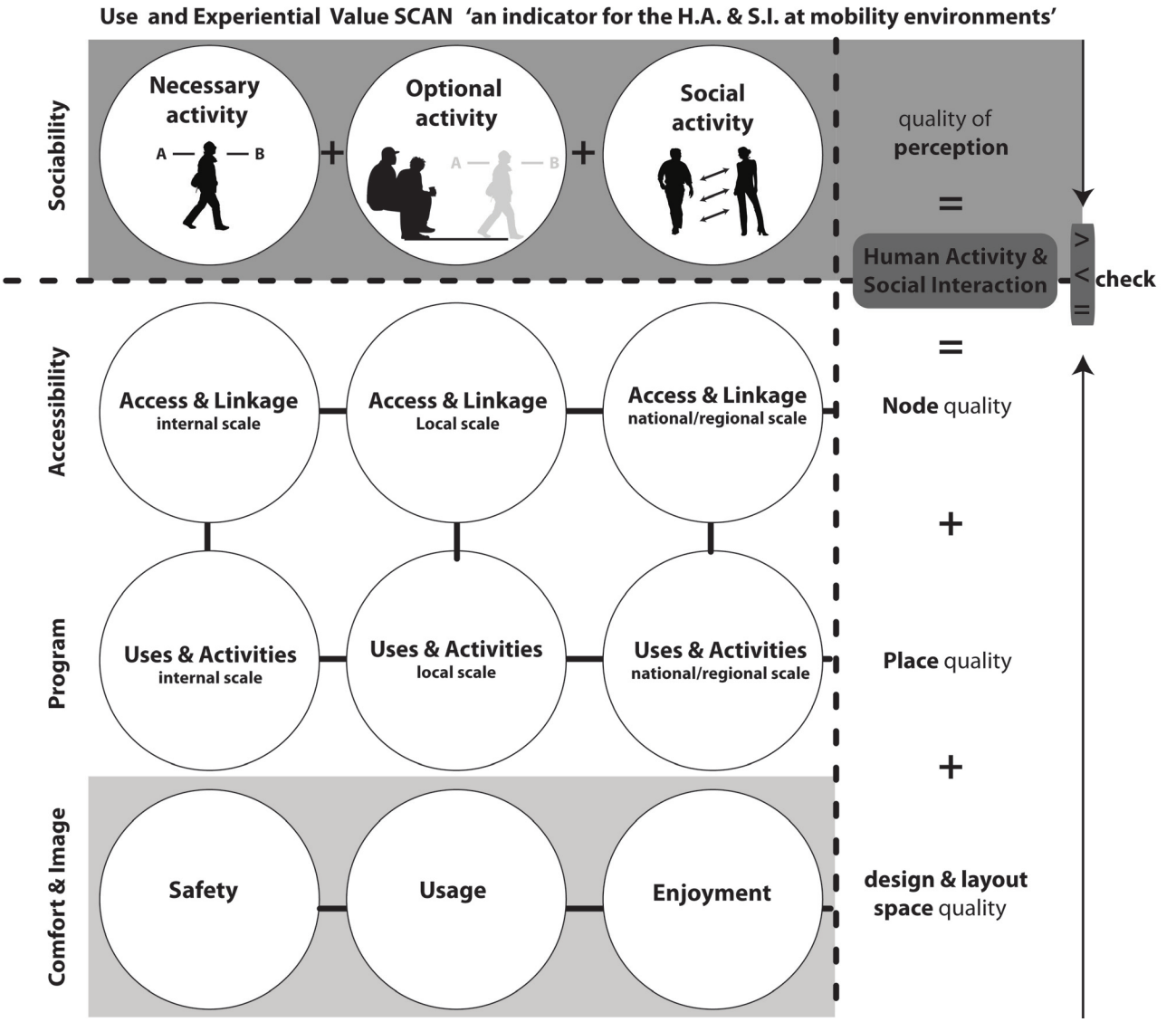


figure 2.7- Use and Experiential value SCAN (source: by author)

Internal, local and regional scale

- Internal scale; a range of 400 meter and contains the accessibility inside this range, the internal walking routes. The program that is part of the internal scale is the program that is in benefit for both regional as local users. This means all program minus housing , work and universities. This is the program that give both types of users a reason to come and to stay in the area.
- Local scale; a range of 800 meter and contains all program and accessibility serving the local inhabitants.
- Regional scale; a range of 800 meter and contains the accessibility of the node, is the mobility environment connected to and with higher scale networks/nodes? And does the area contains program serving the regional scale?

It is important to emphasize that the traffic light method is focused on three directions;
- from the node towards the surroundings.
- from the surrounding towards the node.
- movement at the node.
This is of interest because the use of the node is not an one way street. It is all about generating the exchange of flows, with the providence of accessibility on three scale, program on three scales and a public space quality.

2.3 HOW TO READ THE SCAN

At the beginning of every horizontal row you find the leading factor (Comfort & Image, Accessibility, Program and Sociability) for the creation of human activity and social interaction at multimodal transfer nodes. The leading factor is build up by three criteria. Every circle contains a criteria. Testing the criteria using the CHECKLIST , will result in the space, node and place quality.
The Program and Accessibility are in the SCAN directly related to the 3 different scales (internal, local and regional/ national) while comfort and image can be seen as a more independent factor.
The node, place and space quality result in a level of Human activity and social interaction. This Human activity and social interaction level directly corresponds with a level of activity that represent the quality of perception. The level of activity builds up: under normal circumstances there will not be social activity if necessary and optional activity are not there (figure 2.9).

2.4 VALUE THE SCAN

Every criteria can be valued in the colors green, orange and red by using the CHECKLIST on that particular criteria. These colors are equal to the colors you can find on a traffic light. The benefit is that the filled in SCAN, speaks for itself. The chosen colors are clear;

red; lots of improvement can be done,
orange; some improvements can be done,
green; improvements are not necessary.

The point of departure and the eventual aims for the project in question decides weather or not the circle stays orange or red (or green) . This means, that red, does not automatically means that it is bad, only that improvement can be made in order to enlarge the chance of human activity and social interaction and to

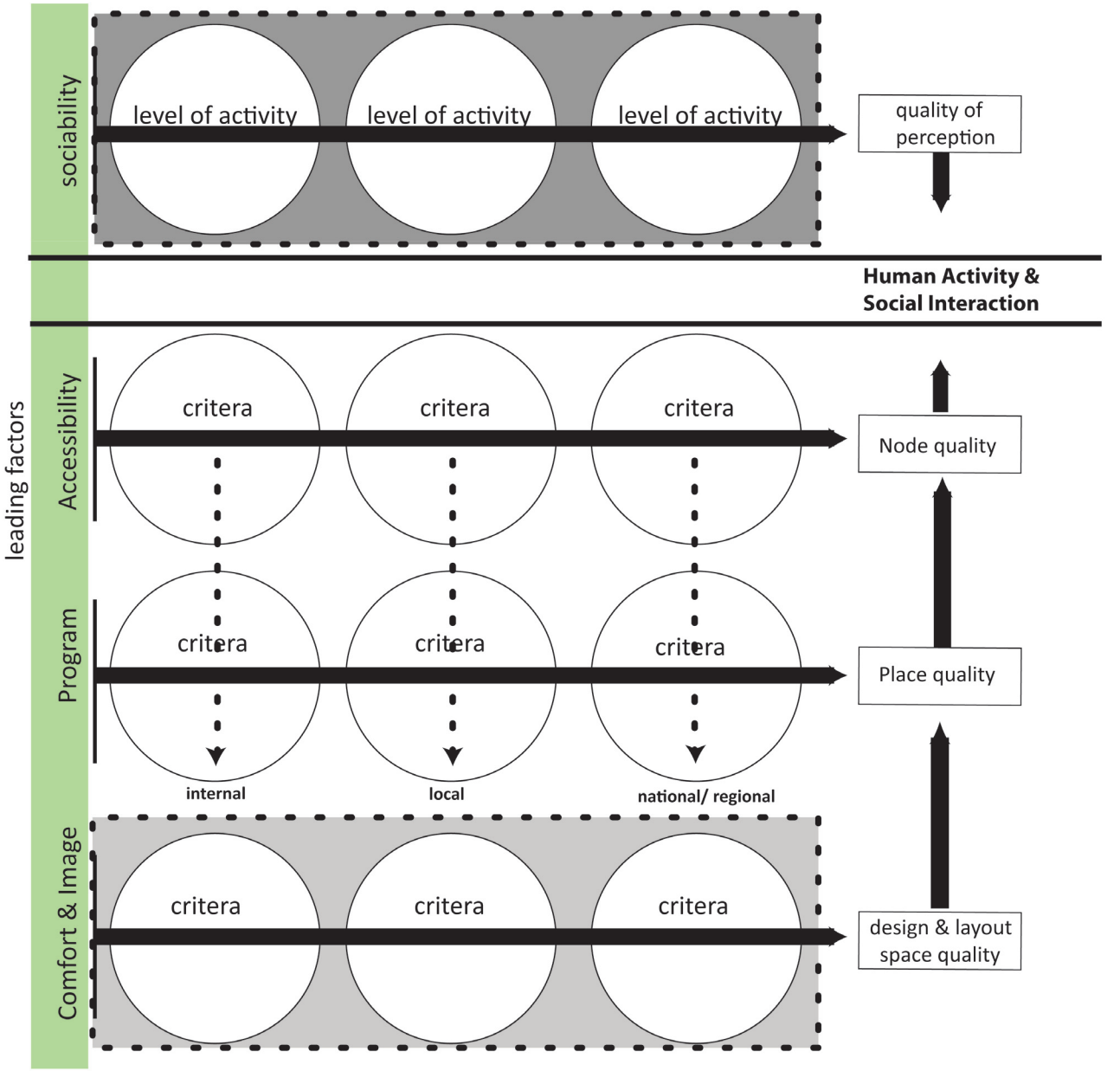


figure 2.9- How to read the diagram (source: by author)

move up a scale in type of activity.

2.4 INTERRELATIONS BETWEEN THE CRITERIA

In order to reach a certain level of activity the criteria have to full fill in a level of quality. These interrelation are indicative.

Figure 2.8 shows how the SCAN should look like in order to provide in necessary, optional or social activity. The colors indicates the minimal value of that criteria for that type of activity.

In order to provide necessary activity at multimodal transfer nodes the area should always reach a certain level of safety. Without safety, people will not make use of the place and will not go there. The area should also be accessible. Accessibility is an essence in order to come and go, especially for a transfer node.

Optional Activity will only occur when the quality of the space is high. It is about the fact that people chose to stay longer than they tempted to. That is why all space qualities should have a orange collar, at least.

Social Activity it the fruit of the quality and length of the other types of activities. Space, node and place quality needs a certain level for this.

IMPORTANT: When the internal scale program is red and the local program is green, this means that the local program in the 400 meter scale is insufficient, (all additional program next to housing) but in the 400-800meter scale very good represented. The 400 meter range is recovered by the 400-800 meter range. This

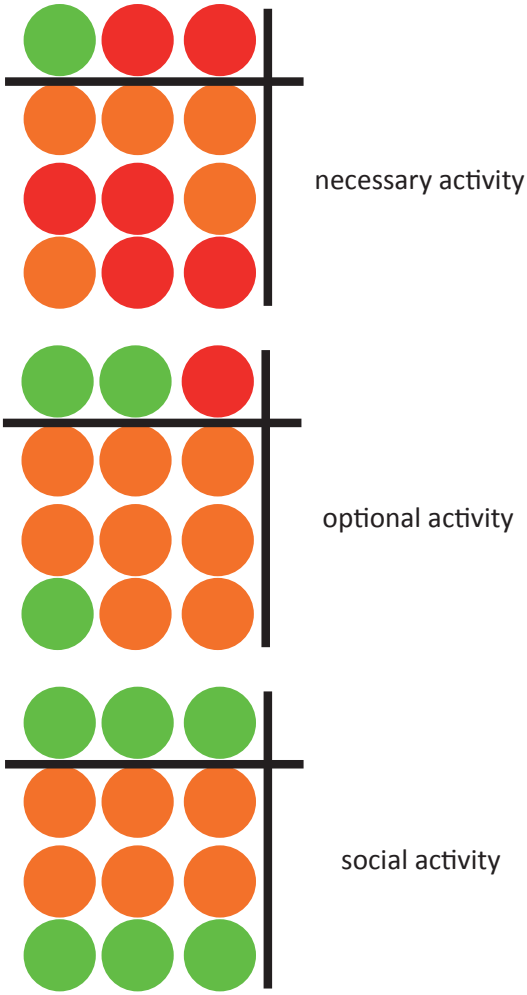
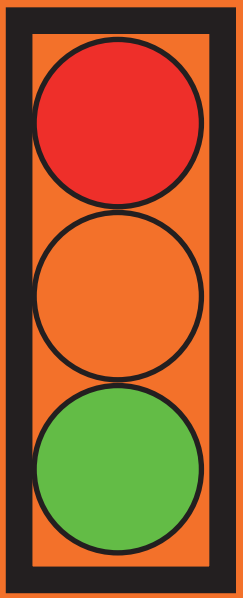


Figure 2.8 : interrelation between the mental and physical dimension. The minimal values are given. (source: by author)

can give a wrong image on the validation of the SCAN! So when internal scale program is red, this automatically has influence in the local scale program. The internal scale program is leading!

3. THE CHECKLIST



3.1 THE CHECKLIST

The CHECKLIST is developed in order to be able to give a value to every aspect of the SCAN (every circle). Every aspects is checked on some points which results in a value; +, +- , -. When al points are counted, the color green, orange or red can be assigned to the aspect.

This chapter will start explaining the points, every aspect is checked on and why these points are of value. Then the checklist is presented.

3.2 SOCIABILITY

Sociability total

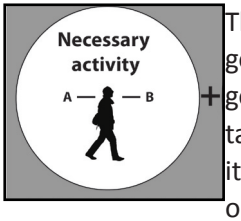
In order to give a direction to the term 'sociability' and the quality of perception we take a look at the theory of Gehl (2002). He distinguished three categories of activities that can be carried out in public space; necessary activity, optional activity and social activity. These three types of activities in public space are strongly dependent on how a person experiences the public space; the perception of the space.

The optional and social activities are the important key to the city quality. Necessary activity will be carried out under decent conditions (safety , accessibility etc.) but optional and social activity only occur under the right circumstances; if the city offers tempting, good public spaces.

The quality of perception: necessary, optional and social activity can be seen as the references in the SCAN.

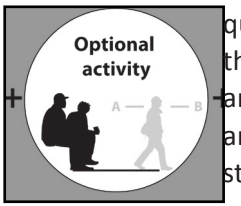
The quality of perception can be seen as a goal that have to be reached or as a measurement for the human activity and social interaction at a specific spot.

Sociability- Necessary/ functional activities

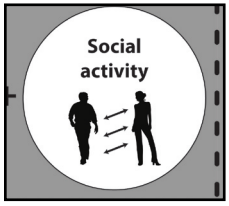


The things that have to be done like; going to school, waiting for the bus, going to work. Necessary activity takes place regardless of the quality of the physical environment and outdoor conditions. A good city or place have to provide in good conditions for the many necessary conditions and will retain and strengthen these activities over time; such as safety and accessibility. Communal spaces in cities and residential areas become meaningful and attractive when all activities of all types occur in combination and feed off each other. This are activities people or tempted to do when the quality of the space is high, when the climate conditions, surroundings and the place are generally inviting and attractive. A space that invite staying. Optional activity is about the fact that the user of the public space 'chose' to stay longer than necessary in the space because they are tempted to do so or just feel like it. optional activities depend to a significant degree on what the place has to offer and how it makes people behave and feel about it. The better a place, the more optional activity occurs and the longer necessary activity lasts. Examples include sitting on a bench, taking a walk or window shopping.

Sociability- Optional/ recreational activity



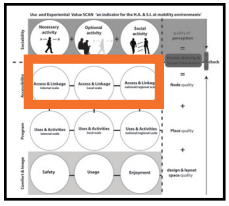
Sociability- Social activity



Social activity is the fruit of the quality and length of the other types of activities, because it occurs spontaneously when people meet in a particular place. Social activities are related to both necessary and optional activities; if physical surroundings increase people's desire to participate in necessary and optional activities it follows that an increase in the number of people in a public space will translate into greater participation in social activities. Social activities include children's play, greetings and conversations, communal activities of various kinds, and simply seeing and hearing other people. It is about watching, listening and experiencing other people; passive and active participation (Gehl, 2002).

3.3 ACCESSIBILITY

Accessibility total



The accessibility will result in the node quality and is divided into three scales: internal scale, local scale and regional sale. This division is important because every scale has his own reach, sphere of influence and users. The internal and local scale accessibility are approached out of the position of the pedestrian. The regional scale out of the scope of users of the regional accessibility.

The internal scale contains all routing and paths in the 400 meter range. Here the station building is

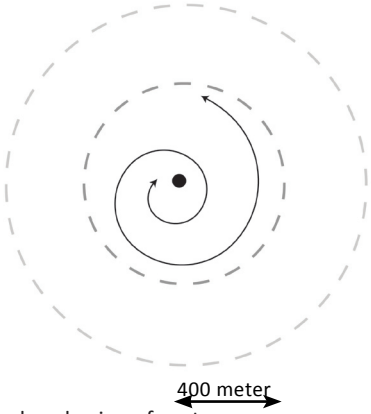


Figure 3.1- Internal anchoring of routes

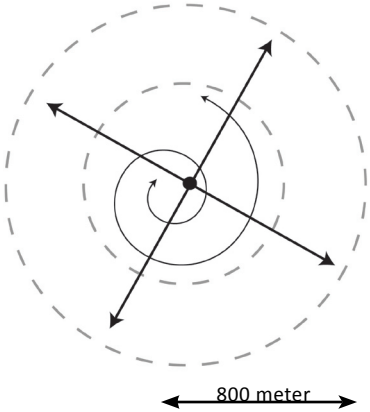


Figure 3.2- Local anchoring (and internal anchoring of) routes

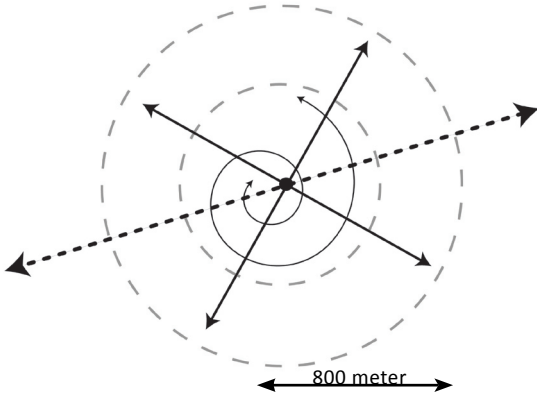


Figure 3.3- Regional anchoring (and local and internal anchoring) of routes.

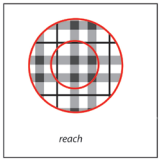
seen as point of departure (Figure 3.1).

The local scale contains all local routing. How is the area accessible and anchored from a local point of view? By the view of the local inhabitants? Here the whole station area is seen as point of departure (Figure 3.2).

The regional scale is more or less a bird eye view approach. Here, out of the perspective of the regional traveler is looked at the value of the regional accessibility. This means public transport like train, metro and bus, but also the car (Figure 3.3).

The quality of the internal and local accessibility will be determined by looking at the reach, the anchoring, the accessibility, the road attractivety, the readability and orientation and the routing.
The quality of the regional accessibility will be determined by the anchoring on a regional scale, the accessibility and the attractiveness.

Accessibility- Reach (internal and local scale)



For the integration of a multimodal transfer node in its surroundings it is important to know what the restrictions are by the (large infrastructure) barriers in the area in terms of reach. It is important to know what the catchment area is of the respectively station (internal scale) and station area (local scale). The catchment area for the internal scale is 400 meter, based on 5 minutes walking distance. The catchment area for the local scale is 800 meter, based on 10 minutes walking distance. This catchment area can be reduced by limitation of the accessibility by large infrastructure lines such as metrolines, traintrack, highways etc (figure 3.4). These barriers can form obstacles or limitations when there are just a few opportunities offered to cross them (tunnels, bridges etc.). The areas that are not accessibly within the catchment area because of such obstacles, are seen as lost areas

Only the spatial barriers are taken into account for measuring the reach not the psychical barriers. A psychical barrier can be a tunnel or a busy street that restrains someone to move further. To recapture- the realistic reach is measured by the containments caused by barriers.

The obtained reach will later in the analysis be used for measuring the anchoring of the area.

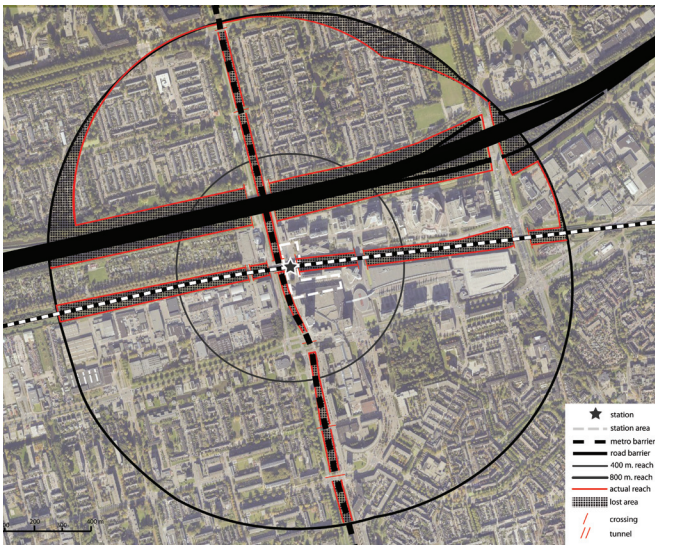
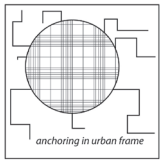


Figure 3.4- the local reach of Rotterdam Alexander.

Accessibility- Anchoring (internal and local scale)



How a place is connected in the network is important for the liveliness of this place. For the use of the transfer node and the neighboring space , it is important that it is part of the network of the area. In order for the multimodal transfer node with regional program and accessibility to become an urban sub centre is that the node is anchored in the urban frame. The place should be part of the ‘ mental map’ of the users.
To create an image for the level of anchoring on the internal and local scale, the 3 steps analysis is used.

The 3 steps analysis shows how far you can get in three steps from a chosen point or area. The three steps are based on the human capability of remembering three steps at once. For example, if someone ask the direction, you can answer him with five steps of direction, but he will remember just the first three. The 3 steps analysis is related to the Space Syntax method (Josselin de Jong et al, 2008).

For the Traffic Light Method the following points are handled: The anchoring of the internal scale is measured with the station as chosen point. From here all possible ways (on pavement) for the pedestrian to move around in and through the 400 meter area can be part of the 3 steps method.
For the local scale the station area is used as chosen area. The borders of a station area are different for every spot and is a matter of defining on the area itself. You have to keep in mind that the area you chose, is the area that is analyzed in its anchoring.

In general, the local routes that are used for the 3 steps method contains bicycle- sidewalk combination. Exceptions are possible.

The analysis works as follow for the internal and local scale; all paths that touch the station or station area are seen as the first strep. All sidelines of the first step are the second step. All sidelines of the second step are the third step. By this you get a network of lines that represent an indication of the mental reach of the node. Figure 3.5 shows an example. This is an image of the anchoring of the local scale accessibility. The red dotted line shows the station area. The green lines, are the important local routes that are not connected in three steps to the station area. By this method, the degree of anchoring of the station/ station area in relation to the measured reach can be determined. Figure 3.6

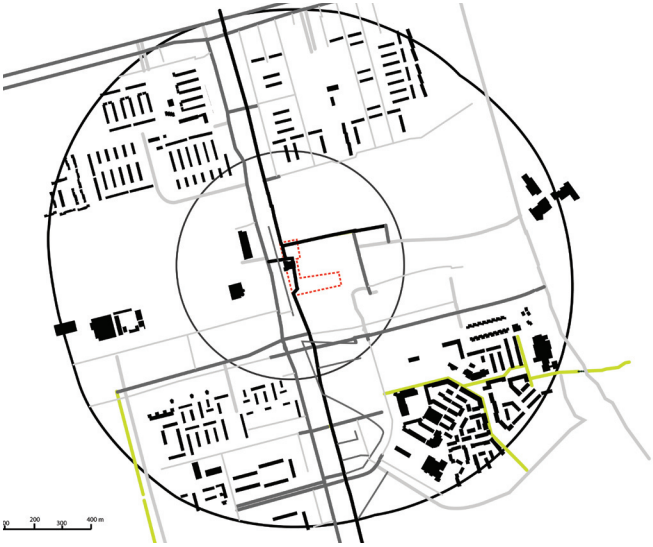


Figure 3.5- the local reach of Alexander Rotterdam.

also represents which building are not anchored in the 800 meter reach area in three steps.
Note; for the anchoring on local scale; the bicycle/ sidewalks are point of departure for drawing the 3 steps analysis, all other connecting paths for pedestrian are taken along in the analysis, but are drawn with finer lines.

Accessibility- Accessibility (internal and local scale)

An area should be accessible in order to be used. But what makes an area accessible? First of all the destination have to be accessible from multiple directions in order to capture the flows of people.
Important is that there are no intersections by big transportation lines like highways, train tracks, metro lines. When there are intersections by large transportation lines there should be sufficient tunnels/ bridges to overcome these intersections to guarantee accessibility. Barriers through car traffic in general are minimized by zebra's or traffic lights and also removal of dangerous junctions is important.

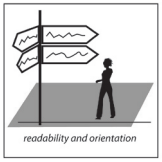
In order to make an area or a spot accessible for the pedestrian, the pedestrians should have priority above the car. 'Every design should begin and end with the quality of the pedestrian and therefore ensure that the ground remains the primary domain for people walking, meeting, learning and playing. At each design step that is taken should be based on the human scale and the requirement patterns of the pedestrian in space' (Bach et al., 2006, p.330).
To enlarge the accessibility of an area car free movement, the presence of a pedestrian zone (particular in the internal scale) is desirable. At least separate cycle tracks and foot paths will enlarge the safety of he pedestrian and will improve the accessibility (Bach et al.,2006).

Accessibility- Road attractivity (internal and local scale)

The paths on the internal and local scale should provide in lightning and shelter. Good lightning is important to ensure or enlarge the physical and psychical safety of the pedestrian. A street or path that does not provide in good lightning will feel unsafe by night and is not attractive for use. Bad lighted tunnels can even turn out to be a physical barrier during night times (and day time), and by that cut of whole areas.

For people with special needs the paths and roads should be usable. As an architect or urban designer, people with special needs should always be the point of departure. In addition, no steep slopes in the track for the bike and no stairs for the pedestrians are desirable. The steep slopes and stairs are not only undesirable for people with special needs, but also for the user in general.
Smooth, skid- resistant pavements, separate cycle track and footpaths will also enlarge the road attractivity of the area. Shelter for rain, sun or other weather conditions is desirable and can enlarge the attractiveness of the road (Bach et al., 2006).

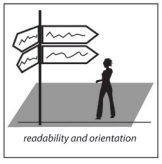
Accessibility- readability and orientation (internal and local scale)



Readability and orientation are important feature in an area. A readable area that provides in good points of orientation helps the users of the ares to find their way.

This is why the route to the destination have to be clear. Good orientation in the area at and around the transfer node means that the transfer node itself can easily be find. But also; travelers and visitors of the area (who make for example use of the regional program) should easily have to find their way. Clear signposts and presence of maps helps in way finding and orientation. But also the presence of orientation points can help. Physical objects that are visible from a distance or on specific spots in the area. The transfer hub itself can be such an object as can program in the surroundings; helping the users to find its way. Differences in height and obstacles, such as heavy buildings and highways, can have a negative effect on the orientation of the area (Josselin de Jong et al, 2008).

Accessibility- Routing (internal scale)



Liveliness in an area (for example on a square or street) is not only created by visitors of that area, but also by people that are passing- by. This is why the accessibility of the area should facilitate in routes for people who are passing, people who are heading for their destination and people who are foraging through the area. In order to create human activity and social interaction at the station area (square) routes should pass along this area, as well as routes that are heading from and to the area. This means, when a station is only the end- or the beginning of the routes, the station will function ass a barrier and obstacle in the area. Figure 3.6 is an example of such a station that works as a barrier in the routing.

Also important is that the routing contains nodes, where flows of people meet and can interconnect with each other. The station square can be such a point, but also additional places in the area can contain those 'nodes' (Josselin de Jong et al, 2008).

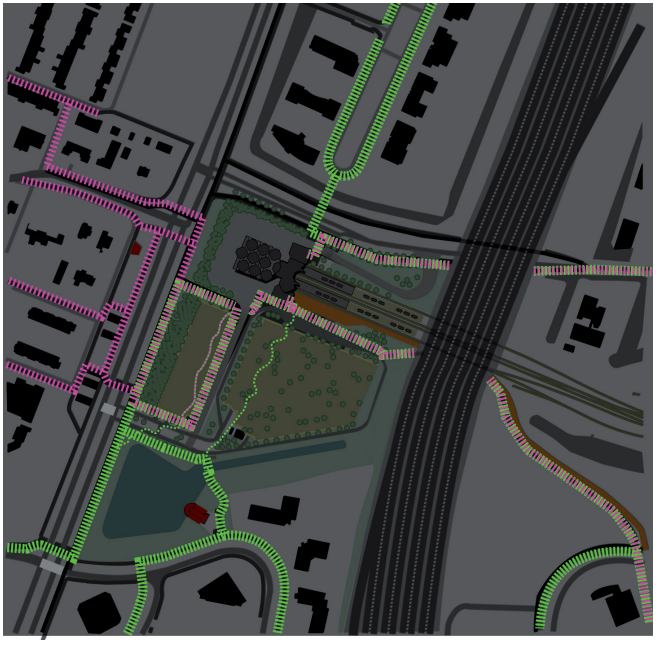
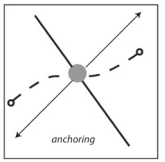


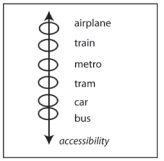
Figure 3.6- Routing Kralingse Zoom Rotterdam. Green is the routing of the regional users, purple the routing of the local users.

Accessibility- Anchoring (regional scale)



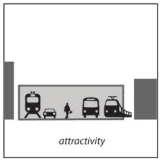
Good anchoring in regional scale means good accessible and a large range of possible users. The mobility environment should be connected to and with a higher scale network and higher scale nodes (Read & Rooij, 2008). This connection with and to the other nodes and networks give the node in question more capacity in terms of use and situated program around that node. The connection with higher scale nodes can strengthen the mutual exchange of users, when the situated regional program is supplementary on the nodes; the network city.

Accessibility- Accessibility (regional scale)



The offered modalities on a multimodal transfer node can have an influence on the accessibility of the node. The transfer hub could be accessible by airplane, train, metro, car and bus. The more modalities interconnect on the hub, the more different networks interconnect; the wider the range of accessibility.

Accessibility- Attractivity (regional scale)

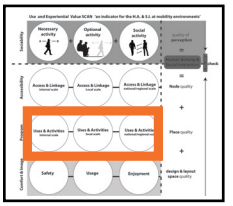


The modalities mutually have to be attuned at each other, in order to provide in a direct and fast, unhindered and clear switch between the different (public) transports. This means, in general, a compact composition of all the modalities. Clear signpost can help to provide in an attractive switch. The traveler should have the feeling he does not waist time during the switch between modalities.

Another important factor on the attractivity on the regional scale is a clear connection to the surroundings. When someone arrives at a station, he should directly no where to go. Again, signpost can help. Here the direct connection to the accessibility on the local and internal scale is made. As orientation, routing and accessibility can help with this.

3.4 PROGRAM

Program- total



The program will result in the place quality and is divided into three scales: internal scale, local scale and regional sale. This is important because every scale type of program has his own users.

The program on a regional scale (in a range of 800 meters of the station) is important whether or not people of outside the local area come to the area (figure 3.8). These people will use the regional ways of accessibility; metro, train, bus etc, the essence of a multimodal transfer node. To recapture; in order to become significant as a mutlimodal transfer hub on a regional scale, next to regional accessibility, regional program is necessary to draw people from outside to the area and to give the node a value on a regional scale.

The local scale program contains all the program in

the area around the node (in a range of 800 meter) that is of use for the local inhabitants.

The internal scale program (in a range of 400 meter around the hub) is the program that is usable for both local as the regional users (figure 3.7). The internal scale program consist out of the program in a range of 400 meter that is not housing, offices or university. The program of the internal scale provides in optional activity and eventual social activity.When you are transferring at the node or working at or closely near the node, the optional activity of buying food for your diner, picking up the kids from day care and having a quick appointment at the hairdresser before you take the train home is interesting.

In order to measure the place quality at and around the multimodal transfer hub, every scale of program have to be looked at separately. If not, a transfer node can have some good regional program, and functions as a sub centre on a regional level, but does not functions as an urban sub centre on a local scale. Simply because the local inhabitants do not have any program situated at and around the transfer hub that they can use in their daily live.

The uses and activities are measured on the three scales by looking at the time when the program is used, the diversity of the program, the singularity of the program, the situation of the program and for the internal scale an indication is given on the number of facilities in the 400 meter range.

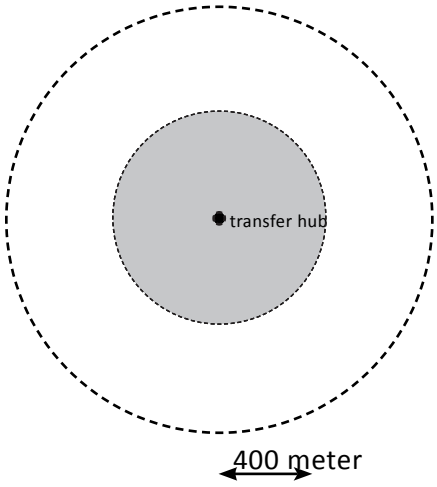


Figure 3.7- range around the transfer hub, 400 meter, for the internal program to be indicated.

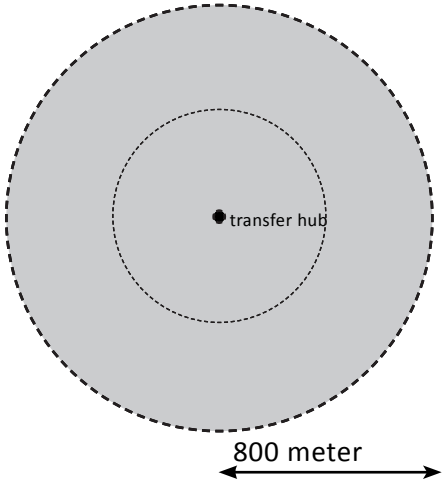


Figure 3.8- range around the transfer hub, 800 meter, for the local and regional program to be indicated.

Program- Diversity of program (all scales)

'Diversity of use has been an emerging issue in the design of public spaces in recent years. Designing for diverse uses calls for creating spaces that people can and will use every day, as opposed to a space that is only designed to be viewed as a work of art' (Hayward, 1989, cited in Dougherty, 2006 p.14).

A diverse program will prevent the arising of mono functional areas. Enclave structures of program in the area of a transfer node are unwanted; this will result in a no go area for either the regional or local users. By looking at the diversity of program on every scale (internal scale, local scale and regional scale) a value can be given to the diversity of program. For example, on a local scale, next to housing, other functions are needed to fulfill in the daily need of the inhabitants; shops, sport facilities, schools etc. The diversity of program is determined by mapping. Figure 3.9 shows an example of the internal scale program of Kralingse Zoom Rotterdam. The site scores very low in terms of internal program, also in terms of the diversity of program. Kralingse Zoom only provides in three shops and one school in the rang of 400 meter of the station.

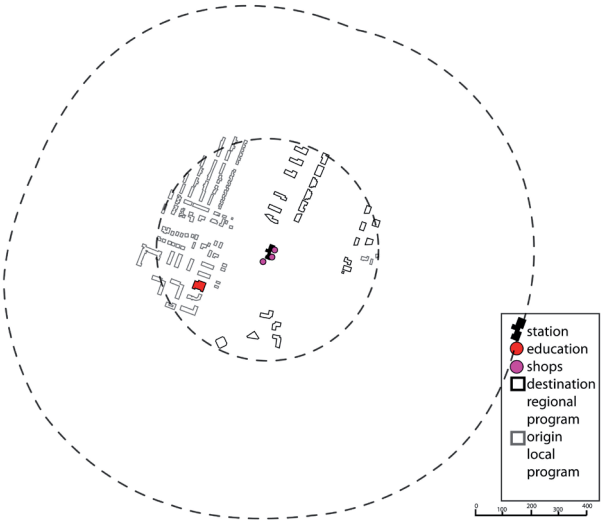
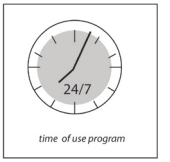


Figure 3.9- Internal scale Program Kralingse ZOom Rotterdam. Very low score on the diversity of program.

Program- Time of use (all scales)



'A problem with many urban spaces is that they are only used during specific and limited periods of time. Spaces in downtowns are often used at lunch hours during the week and abandoned at other times' (Dougherty, 2006,p.12). As well as some working areas, the large office parks on the edge of the city, which are deserted in evenings and during weekends.

The most important factor in getting spaces used during varying times is to have diversity in the areas surrounding the public space. Having people in the area working different jobs at different hours, dining, playing, and living creates a base of users who will populate the space at different times. Successful public spaces rely as much on the correct site as on the proper design' (Dougherty, 2006,p.12).

It is important to facilitate in program that regener-

ates uses of the area during day time, night time, in weekends and during the week.

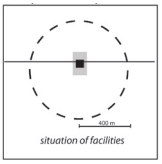
Program- Singularity of the program (all scales)

Presence of unique/specific type of program that contributes to an unique character of the place. This unique program contributes to the experience of a place, recognizability and the identity. Special program will add value to the personal connection towards an area. Users tent to grant their own significance to an area, so they feel connected to it (or not). This personal connection includes uses and activities, but also spheres and spatial perception .

When the area includes only a single type of uses and activities, less (different groups of) people will feel connected to a certain area (de Josselin de Jong et al, 2008).

What makes program singular or unique? For program on the local scale, a park or a sport facility can be a unique facility for the inhabitants. On the regional scale, a stadium can be unique, for example when it is the biggest stadium of the city. On the internal scale, it can be a sandwich shop, where they make the best sandwiches in the widest surroundings. This unique program of the internal scale, is automatically also connected to the local and or regional scale.

Program- Situation of the facilities (internal scale)

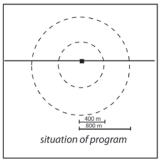


The situation of the facilities is important in order to grant points for the distribution of internal program in the area. Mixture of the internal scale program with both local and/ or regional scale program is important, because it will eventually (or not when it is not present) give a large contribution on the appearance of optional activity. When the internal scale type facilties are only positioned in the station and at the station area this means most of the time that the rest of the space is filled with mono functional, enclave types, of local or regional program.

A division is made in the station building, the station square and direct area and the rest of the 400 meter range.

Functions inside the station building are mainly of use for the traveler. Functions at the station square are usable for inhabitants, travelers (switcher between modalities), passant and visitors. Functions in the rest of the area are usable for inhabitants, passant, visitors and less for the switcher between modalities.

Program- Situation of the program (local and regional scale)



The situation of the program is important in order to grant points for the distribution of local and regional program trough the area. Both regional as local program have to be present in the 400 meter and the 400-800 meter range (figure 3.10). If not, this means a no go area for the users of one of

the two scales. For example. When there is no local program situated in the 400 meter range, aside of the station, this directly means that the area has no contribution to the daily lives of the inhabitants.

Program- Types of users (all scales).

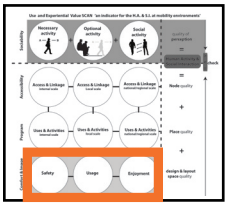
'When designing for diversity of use, the diversity of the user must also be considered. Michael Hough states that the "quality of urban life today has to do, among other things, with the recognition that diverse social groups need diverse landscapes" (Hough, 1990, cited in Dougherty, 2006, p. 14) Therefore, to achieve that quality of life, spaces should be designed not according to generic standards but customized to "suit the needs of different user groups in the community" (Loukaitou Sideris, 1995 sited in Dougherty, 2006, p.14).

On every scale have to be determined what type of user is using the space and the program. The more overlap between users of the different program on the different scales, the better the pragmatic integration, the more different types of users the area will attract. The determination of the users will be done by observation.

Figure 3.10- example of the local scale program Kralingse Zoom, Rotterdam. The local scale program is present in the 400 meter and 400-800 meter range, but is not mixed up with regional program (enclave structures by the regional program) .

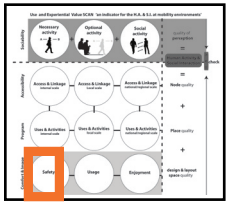
3.5 COMFORT AND IMAGE

Comfort and Image total



Comfort and image can be seen in the SCAN as a separate layer representing design and layout of a public space, the space quality. Safety, usability and enjoyment are characteristics that every public space should persuade in. Safety, usability and enjoyment are, according to Gehl (2006), the key quality criteria for city spaces. (NOTE, Gehl does not use the word usability but comfort.)

Safety- total



In Maslow's hierarchy of needs (1943) safety is the second most important need (after physical needs such as breathing, food, water, etc) for a human being (figure 3.11). The lower four layers of the pyramid contain what Moslow called 'deficiency needs'; esteem, friendship and love, security and physical needs. On top of the pyramid is self- actualization, thinks like morality, acceptance of facts and creativity are mentioned. With the exception of the lowest (physiological) needs, if these 'deficiency needs' are not met, the body gives no physical indication but the individual feels anxious and tense. Maslow stated that every level of a certain need can only be achieved when the previous levels are reach. In the context of space, safety expresses our need to kept safe/ being protected from traffic and accidents, crime and violence and unpleasant sensory experiences (Gehl, 2006).

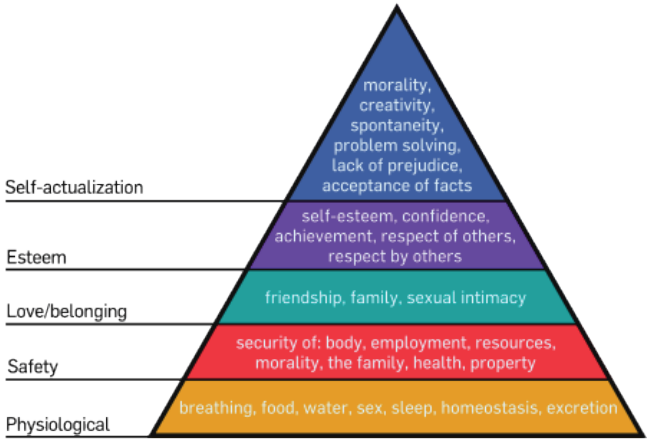


Figure 3.11- Maslow (1943) A Theory of Human Motivation

Safety- Protections against traffic and accidents

Protection against traffic and accidents

Traffic is an important factor. Good city spaces provide in such a good traffic safety that the user does not have the fear being run over or remain on constant alert, with children firmly in hand and so on. In other words; pedestrians have to be protected against traffic and accidents . Good design and layout – space quality provides in good conditions for pedestrian traffic. Vehicles should not dominate pedestrian use of the space or prevent them in move around freely in the space (Gehl, 2006).

Protection against crime and violence

Safety- protections against crime and violence

In order to ensure a genuine sense of security when you move or stay in a public space crime should be prevented. Dark deserted spaces promote a feeling of insecurity. That is why good lightening is a must in public spaces. Furthermore, for places to feel safe, there have to be people around with things to do. This is best achieved by the presence of diverse functions; housing, offices, shops and restaurants, so that there are eyes on the street and people nearby at all times of night and day in other terms; a lively public realm because of overlapping functions during day and nighttime (Gehl, 2006).

Safety- protection against unpleasant sensory experience


Protection against crime and violence

Protection from unwanted elements of the climate is important. Unpleasant sensory experience are for example weather conditions like wind, rain and snow and cold and heat. But also negative experiences caused by pollution and dust, noise and glare (Gehl, 2006).

Usage- total

'Opportunities to participate in a variety of activities and experience the surroundings rest on how public space is designed to facilitate basic human activity and social interaction under good conditions. Good public space has multiple uses. It is important to be able to stay and experience city space, to use it for both passive and active use' (gehl, 2006, p. 106). Good space should provide in opportunities to walk, stand/stay, sit, see and talk and listen.

Usage- opportunities to walk


opportunities to walk

There are several quality requirements to the pedestrian landscape. In the first place a public space have to provide in room for walking with no obstacles on the way, such as misplaced street furniture like wastepaper basket or lamppost . But crossings with other traffic are also experiences as obstacles

The pavement should be in good conditions. The street surface of the pavement have to be smooth for an easy access and prevention of stumbling. In the first place difference in heights should be prevented, but when this is prohibitive pedestrians prefer a slope instead of stairs and starting with descents followed by rising. In large spaces people are tending to walk along the edges of the area for shelter, safety and security. This is why in large spaces the walking routes should be situated along the edges and the facades along the pedestrian landscape have to be interesting (Gehl, 2006).

Usage - opportunities to stand/stay


opportunities to stand/stay

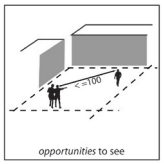
A good public space should provide in attractive zones for standing and staying in order to give people the opportunities to stop. People are inclined to stand along the edges of a space, 'the edge effect'. Favorable in half shadow/ dark. People feel comfortable in this partly shadowed spot because they can observe the human activity and social interaction in the public space as a spectator as a passive participator in public life. These zones of standing, where protections is provided but where there is still a good overview, are spots like: niches in facades, recessed entrances, porches, veranda's etc.

A space should also provide in instruments that support standing like posts, trees, streetlamps etc; resting places on the small scale. Places that invite staying do have facades with good details and spaces with a multitude of points of support for standing (Gehl, 2006).

Usage- opportunities to sit

A good public space should provide in good places to sit and zones for sitting. These sit opportunities can exist out of primary sit opportunities like sit furniture such as benches and chairs for resting and/ or secondary sit opportunities like stairways, pedestals, steps low walls and boxes. These primary and secondary sit opportunities are favorable in existents next to each other with a orientation or view towards surrounding activities. Also good orientation and positioning in favor of the maximum usage of the positive aspects of climate; utilizing the advantage of the sun (Gehl, 2006).

Usage- opportunities to see



People do have the need to experience and use sight to get information out of their surroundings. Sight is a so called distance sense. Within a distance of a 1000 meter we recognize people as people, within a 100 meters the social range of vision is entered and the minimal distance to observe facial features is 30 meters. In the range of 0 to 30 meters the social experience situation is getting more and more interesting.

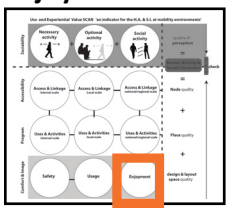
The optimal dimensions of a square, the reasonable viewing distance, can be set on 70 to 100 meters (the social range of vision) in a combination with smaller distances, a division of the large space, so that facial futures can be recognized. On top of this views have to be unhindered and interesting. Overview and unhindered sight lines give every person the optimal conditions for seeing what is going on in the space but also helps in the orientation and way finding.

The lightening of the public space is in a social aspect important. Good lightening contributes to safety, comfort and awareness of events (Gehl, 2006).

Usage- opportunities to talk/listen

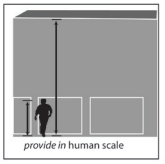
The public space should provide in opportunities to talk and listen. In order to social interact, these ways of expressing are very important. The public space have to provide in 'talks capes'. Spots where people can sit down, maybe even sit aside of the busy activities around them Gehl, 2006)

Enjoyment- total



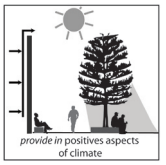
'Creating thoroughly enjoyable spaces is highly dependent on utilizing the qualities, attractions and special opportunities found in and around city spaces.' (gehl, 2006, p. 106) Enjoyable spaces are created or formed by provide in human scale, positive aspects of climate, positive sensory experience and good design and detailing.

Enjoyment- provide in human scale



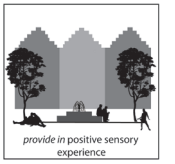
The public space have to be a pleasant space of staying, meeting and transfer. This is why buildings have to be design to the human scale. The human scale is approximately 4 to 5 levels. By 4 or 5 levels, and higher, interventions at the facade of the building are necessary, such as canopies. Fine grained building blocks are important as well. Narrow units have the fine effect of making streets more interesting because narrow units mean many doors and many different uses to look at. Another benefit of narrow units is that they also provide a predominantly vertical façade structure which has the important visual effect of making distance feel shorter. And to 'cut up' wide space, element of human scale in the public space such as trees, art, objects, streetlights are necessary. The balance between the height of buildings and the wideness of the streets, or squares, is important (Gehl,2002).

Enjoyment- provide in positive aspects of climate.



Enjoyment of the positive aspects of climate is something the public space have to provide in. Users should have the opportunity to enjoy the sun, but also the shade if that is what they need. This also means for heat and coolness and shelter from the wind or enjoying the nice breeze. The weather is changing constantly the public space needs to offer facilities to adapt on these changes at all times (Gehl,2006) .

Enjoyment- provide in positive sensory experience.



To define elements that prove in positive sensory experience is difficult. Every person has its one comfort zone and own taste on what he/she experiences as positive. Some general elements can be named. For example the presence of trees/plant and water, play and street entertainment and if the space is free of clean and free of litter. Also fine views are provide in a positive sensory experience. These fine views can include watching people interact or walk by, but also nice urban views

Enjoyment- provide in good design and detailing The

public space have to prove in good design and detailing of the building, but also of the pavement and street furniture. The quality of the building frontage facing the foot pats or public space is an extremely important factor for the quality of an urban area. 'Good ground floor facades are in rich in detail and exciting to walk by, interesting to look at, to touch and to stand beside. Activities inside the buildings and those occurring on the street enrich each other. In the evening friendly light shines out through the window of shops and other ground floor activities and contribute to both a feeling of security as well as genuine safety. Interesting ground floor facades also provide good reasons for walking around in the public space in the evening and on Sundays, engaging in the age old attractive

pastime: window shopping. Blank walls, on the contrary underline the futility of visiting the space outside working hours' (Gehl,2002,p.36).
Also a certain coherence in architecture and delicate and maintenance materials are important.

3.6 USING THE CHECKLIST

When using the checklist you can simply check off the points that are suitable for the area. Sometimes, you will find a point that is not completely wrong but also not completely right for the area. Than you can use a
' half point'.

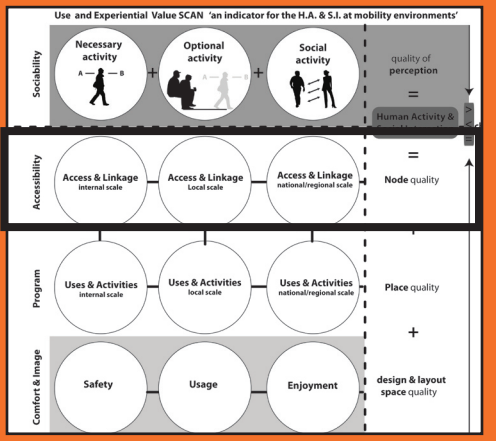
⊗ I Agree.
⊘ I partly agree.
○ I do not agree.

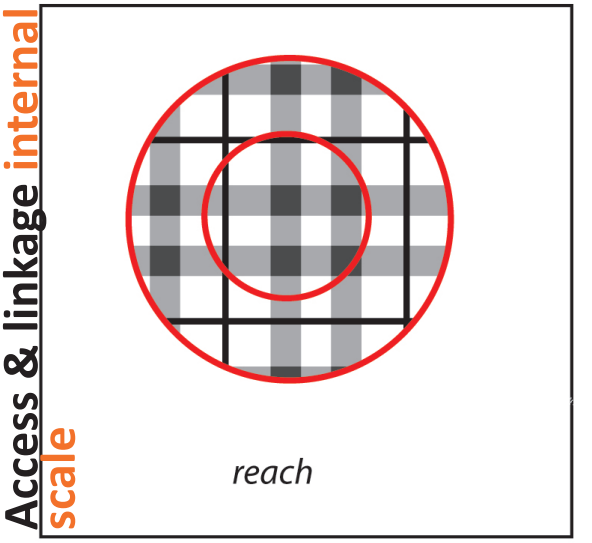
It is always important to realize that the results out of the checklist are partly depending on the observations and interpretation of the person that filled in the checklist. Never the less, the outcome will create awareness and discussions can flame by this first value judgement on the node, which can be helpful by unravelling de complexity of designing a transfer node:

3.7 CHECK

CHECK
node quality

Access & Linkage- Internal scale
Access & Linkage- Local scale
Access & Linkage- Regional scale



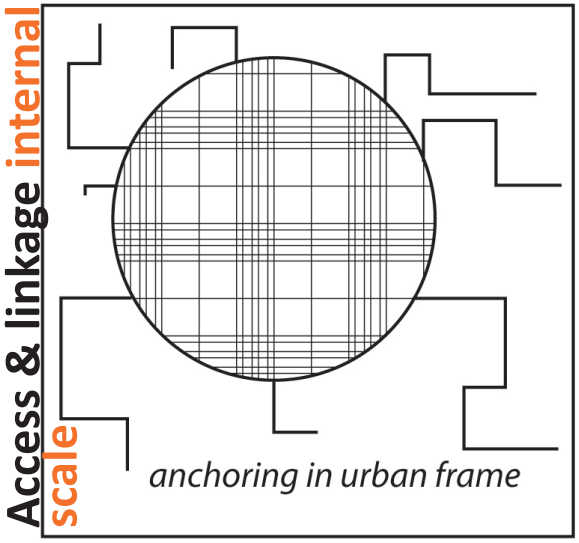


The reach of the station is:
(Chose one.)

- reach 100 %
- reach 80- 100 %
- reach 60- 80 %
- reach 40-60 %
- reach < 40 %

++	100%
+	80- 100 %
+ -	60-80 %
-	40-60 %
- -	< 40 %

SCORE: .....

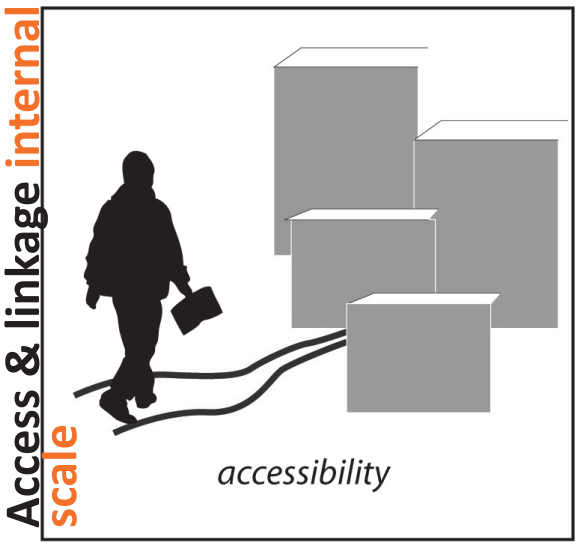


The anchoring of the station into the urban frame is (Chose one.)

- O 100 % anchored
- OO 80- 100 % anchored
- OOO 60- 80 % anchored
- OOOO 40-60 % anchored
- O < 40 % anchored

++	100%
+	80- 100 %
+ -	60-80 %
-	40-60 %
- -	< 40 %

SCORE: .....



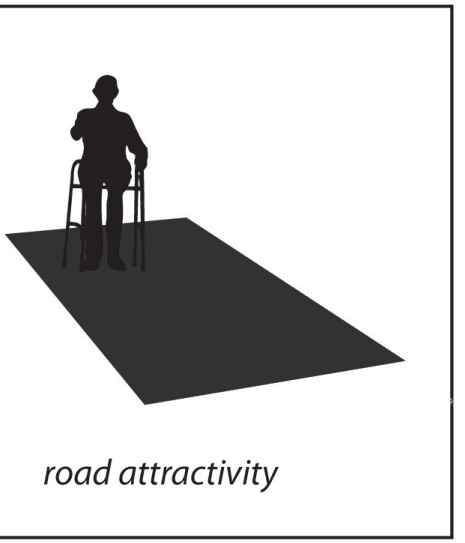
For all routes is guarantied that :

- O The destination is accessible from multiple directions.
- O There are no intersections by big transportation lines like highways, train tracks, metro lines, or sufficient tunnels/ bridges to overcome these intersections.
- O Barriers through car traffic are minimized by zebra's or traffic lights, removal of dangerous junctions.
- OO Separate cycle track and foot path.
- OO Car free movement; pedestrian zone.

++	all 5 points are relevant
+	4 points are relevant
+ -	2 or 3 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

Access & linkage internal scale



road attractivity

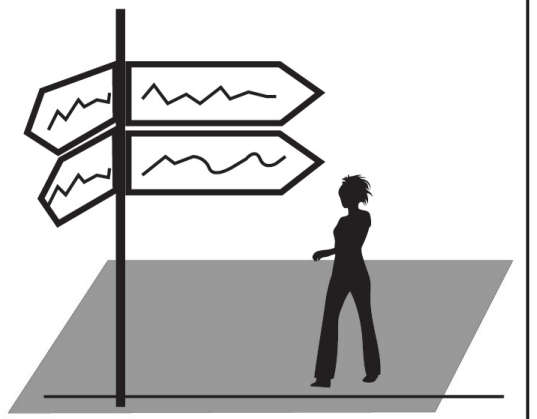
The paths provide in:

- O Lighting.
- O Shelter.
- O Short waiting time at junction (within 70 sec.)
- O Usable for people with special needs.
- O No steep slopes in the track for the bike, no stairs for the pedestrians.
- O Smooth, skid- resistant pavements.
- O Separate cycle track and footpath.

++	all 7 points are relevant
+	5 or 6 points are relevant
+ -	3 or 4 points are relevant
-	1 or 2 points is relevant
- -	none points are relevant

SCORE: .....

Access & linkage internal scale



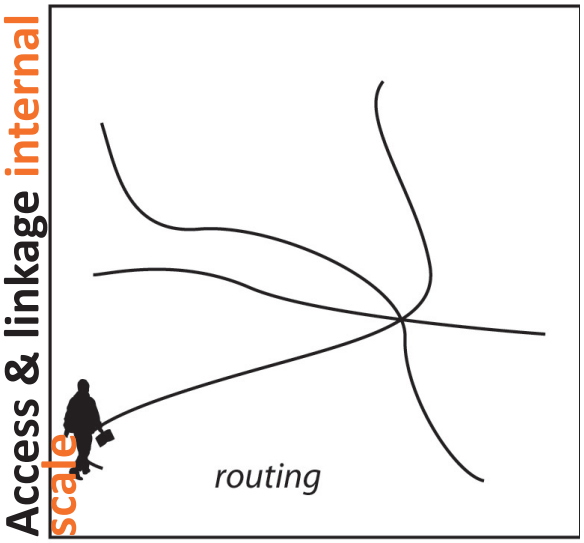
readability and orientation

The area provides in;

- O The route to the destinations are clear and the area is readable. (no obstacles, difference in height)
- O Presence of orientation points.
- O Clear signposts and or presence of maps.

++	all 3 points are relevant
+	3 points are relevant
+ -	2 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

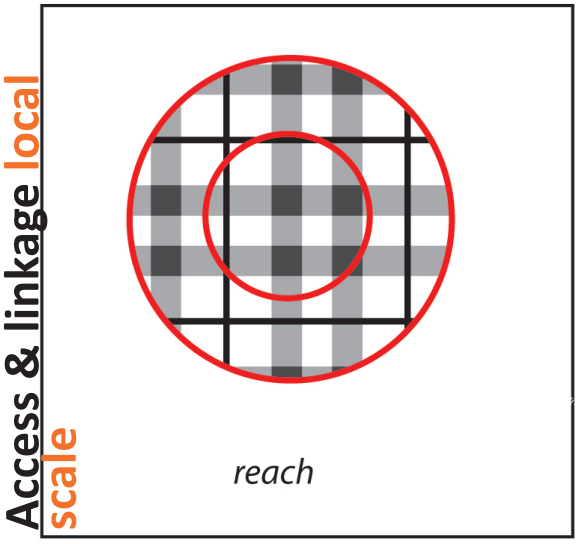


For the routing counts :

- ○ The routes to the destinations is clear.
- ○○○ There is a main route to one destination
  There is no use of short cuts
  The routing facilitates for passant through the area
- ○ The routing facilitates people heading for their destination.
- ○ The routing facilitates for foraging through the area.
- ○ The routing contains nodes; where flows meet and interconnect.

++	all 7 points are relevant
+	5 or 6 points are relevant
+ -	3 or 4 points are relevant
-	1 or 2 points are relevant
- -	none points are relevant

SCORE: .....

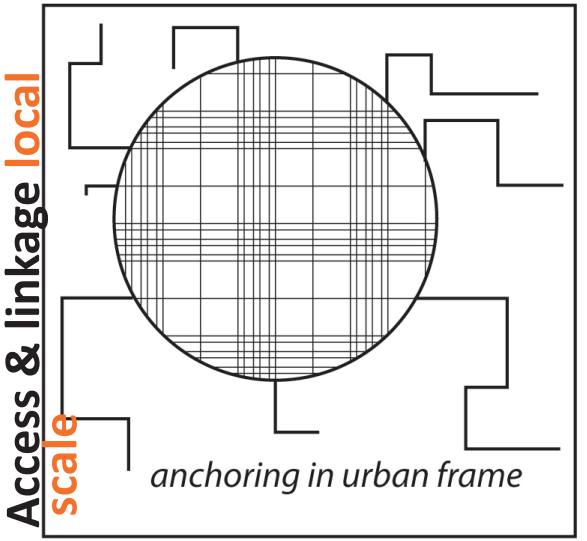


The reach of the stationarea is:
(Chose one.)

- ○ reach 100 %
- ○○○○ reach 80- 100 %
- ○ reach 60- 80 %
- ○○ reach 40-60 %
- ○ reach < 40 %

++	100%
+	80- 100 %
+ -	60-80 %
-	40-60 %
- -	< 40 %

SCORE: .....

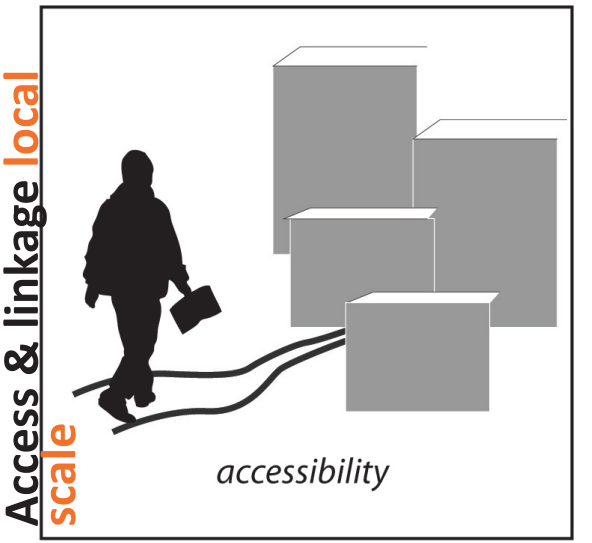


The anchoring of the stationarea into the urban frame is (Chose one.)

- O 100 % anchored
- OO 80- 100 % anchored
- OOO 60- 80 % anchored
- OOOO 40-60 % anchored
- O < 40 % anchored

++	100%
+	80- 100 %
+ -	60-80 %
-	40-60 %
- -	< 40 %

SCORE: .....



For all routes is guarantied that :

- O The destination is accessible from multiple directions.
- O There are no intersections by big transportation lines like highways, train tracks, metro lines, or sufficient tunnels/ bridges to overcome these intersections.
- O Barriers through car traffic are minimized by zebra's or traffic lights, removal of dangerous junctions.
- OO Separate cycle track and foot path.
- OO Car free movement; pedestrian zone.

++	all 5 points are relevant
+	4 points are relevant
+ -	2 or 3 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

Access & linkage **local** **scale**

road attractivity

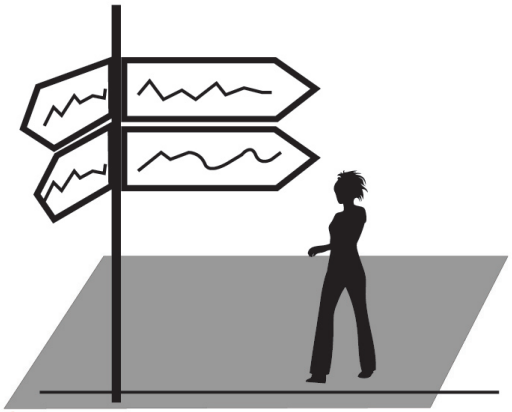
The paths provide in:

- ○ Lighting.
- ○ Shelter.
- ○ Short waiting time at junction (within 70 sec.)
- ○ Usable for people with special needs.
- ○ No steep slopes in the track for the bike, no stairs for the pedestrians.
- ○ Smooth, skid- resistant pavements.
- ○ Separate cycle track and footpath.

++	all 7 points are relevant
+	5 or 6 points are relevant
+ -	3 or 4 points are relevant
-	1 or 2 points is relevant
- -	none points are relevant

SCORE: .....

Access & linkage **local** **scale**



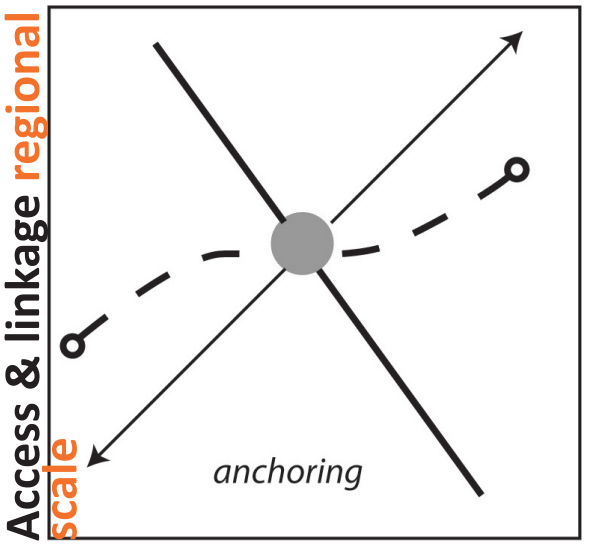
readability and orientation

The area provides in;

- ○ The route to the destinations are clear and the area is readable. (no obstacles, difference in height)
- ○ Presence of orientation points.
- ○ Clear signposts and or presence of maps.

++	all 3 points are relevant
+	3 points are relevant
+ -	2 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

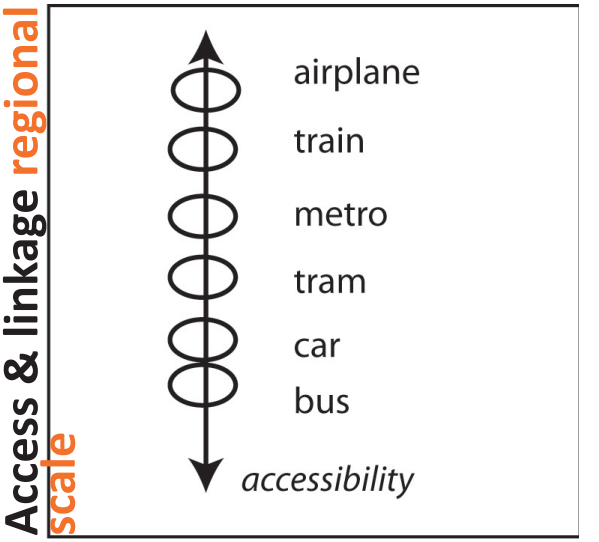


The transfer hub is anchored to and with:

- Higher scale networks.
- Higher scale nodes.

++	all 2 points are relevant
+	2 points are relevant
+ -	1 points is relevant
-	none points are relevant
- -	none points are relevant

SCORE: .....

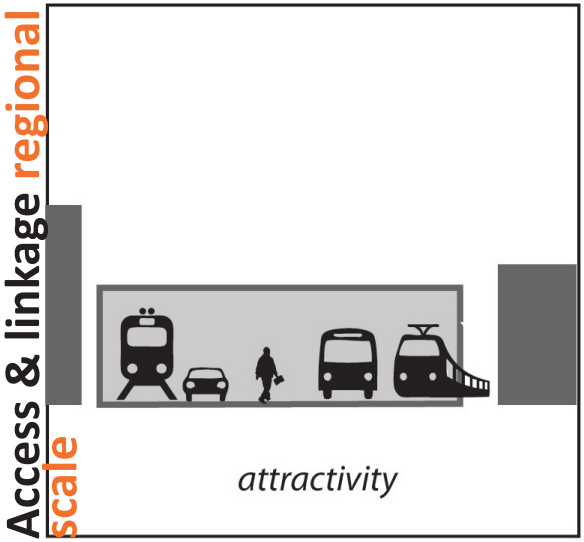


The transfer hub is accessible by the following regional modalities, with a (possibility for) high frequency:

- Airplane.
- Train.
- Metro.
- Car.
- Bus.

++	all 5 points are relevant
+	4 points are relevant
+ -	2 or 3 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....



The transfer hub provide in:

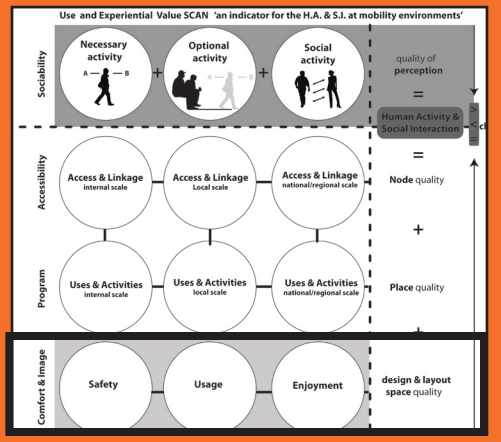
- A direct and fast switch between modalities.
- A unhindered switch between modalities.
- A clear switch between modalities.
- A clear connection to the surroundings.

++	all 4 points are relevant
+	3 points are relevant
+ -	2 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

CHECK
place quality

Uses & Activities- Internal scale
Uses & Activities- Local scale
Uses & Activities- Regional scale



The internal scale- 400 meter zone provides in the following program:

- Restaurant/bar.
- Sport.
- Cinema.
- Theater.
- Park.
- Shops.
- Crèche/childcare.
- School (other than university).
- Other....

++	8 or 9 points are relevant
+	6 or 7 points are relevant
+ -	4 or 5 points are relevant
-	2 or 3 points are relevant
- -	none or 1 point is relevant

SCORE: .....

Uses & Activities internal scale

time of use program

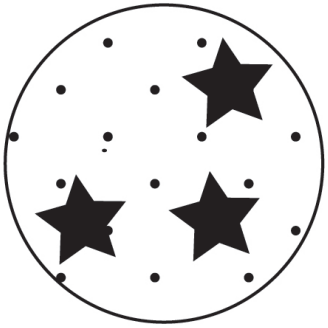
The program of the internal scale is used during:

- Mornings (weekdays).
- Afternoon (weekdays).
- Evening (weekdays).
- Night (weekdays).
- Mornings (weekends).
- Afternoon (weekends).
- Evening (weekends).
- Night (weekdays).

++	8 points are relevant
+	6 or 7 points are relevant
+ -	5 points are relevant
-	3 or 4 points are relevant
- -	less than 3 points are relevant

SCORE: .....

Uses & Activities internal scale



singularity of the program

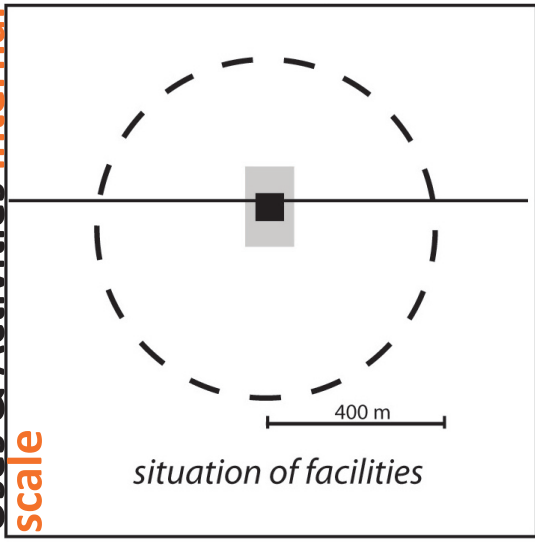
Presence of unique/specific type of program that contributes to an unique character of the place. (Chose one.)

- 0 type of program that is unique/specific.
- 1 types of program that is unique/specific.
- 2 types of program that is unique/specific.
- 3 types of program that is unique/specific.
- 4 or more types of program that is unique/specific.

++	4 or more
+	3
+ -	2
-	1
- -	none

SCORE: .....

Uses & Activities internal scale



situation of facilities

The facilities are situated:

- In the station.
- At the station square.
- In the rest of the area.

++	all 3 points are relevant
+	3 points are relevant
+ -	2 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

Uses & Activities internal scale

types of users

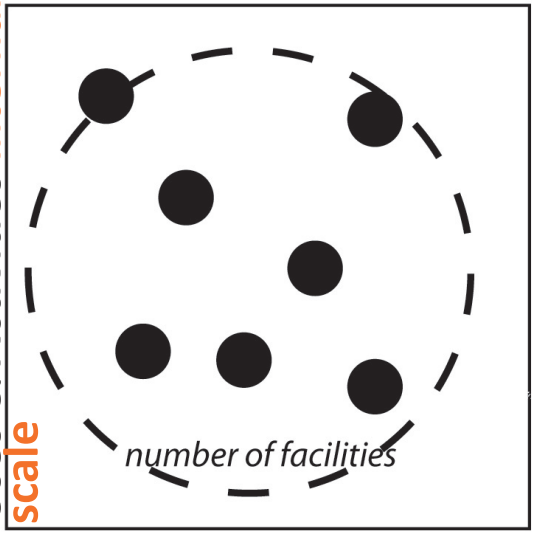
The types of users of the program are:

- Working people.
- Students.
- Youth.
- Elderly.
- Children.
- Families.
- Adults.
- Traveler.

++	7 or 8 points are relevant
+	5 or 6 points are relevant
+ -	4 points are relevant
-	2 or 3 points are relevant
- -	none or 1 point is relevant

SCORE: .....

Uses & Activities internal scale



Number of facilities is the range of 400 meter:

- More than 40 facilities in the area.
- 30- 39 facilities in the area.
- 20-29 facilities in the area.
- 10-19 facilities in the area.
- less than 9 facilities in the area.

++	> 40
+	30-39
+ -	20-29
-	10-19
- -	> 9

SCORE: .....

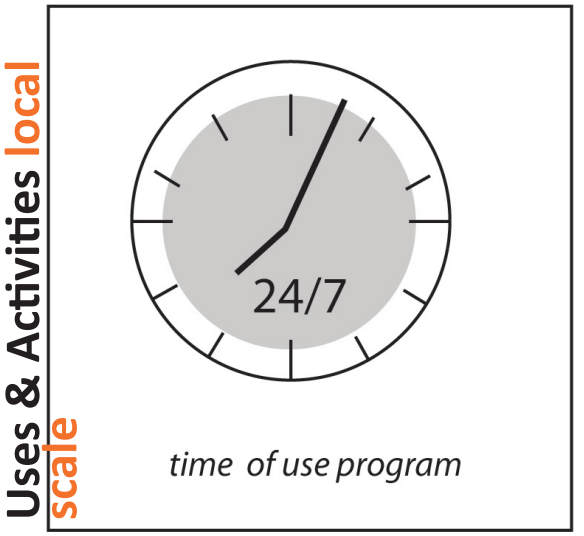
Uses & Activities local scale

The local scale- 800 meter zone provides in the following program:

- Restaurant/bar.
- Sport.
- Cinema/ Theater.
- Allotment.
- Park.
- Shops.
- Crèche/childcare.
- School (other than university).
- Housing.
- Market.

++	9 or 10 points are relevant
+	7 or 8 points are relevant
+ -	5 or 6 points are relevant
-	3 or 4 points are relevant
- -	2 or less points are relevant

SCORE: .....

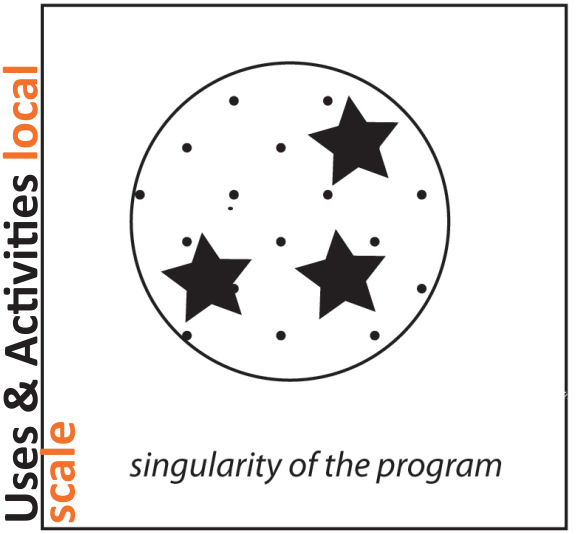


The program of the local scale is used during:

- Mornings (weekdays).
- Afternoon (weekdays).
- Evening (weekdays).
- Night (weekdays).
- Mornings (weekends).
- Afternoon (weekends).
- Evening (weekends).
- Night (weekdays).

++	8 points are relevant
+	6 or 7 points are relevant
+ -	5 points are relevant
-	3 or 4 points are relevant
- -	less than 3 points are relevant

SCORE: .....



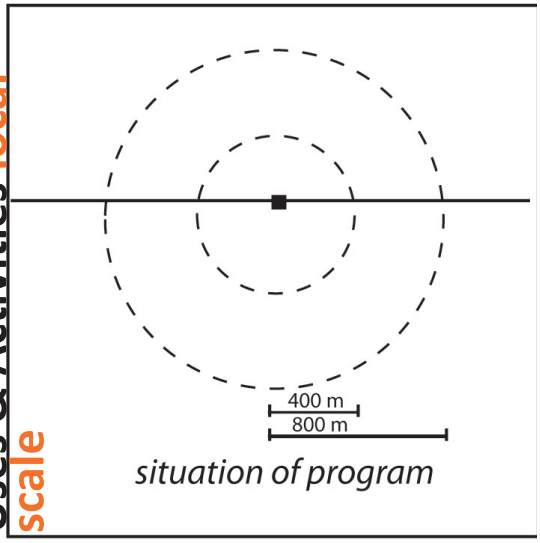
Presence of unique/specific type of program that contributes to an unique character of the place. (Chose one.)

- 0 type of program that is unique/specific.
- 1 types of program that is unique/specific.
- 2 types of program that is unique/specific.
- 3 types of program that is unique/specific.
- 4 or more types of program that is unique/specific.

++	4 or more
+	3
+ -	2
-	1
- -	none

SCORE: .....

Uses & Activities local scale



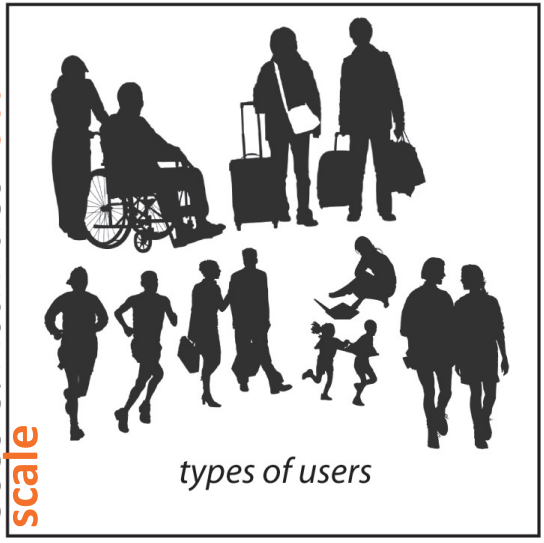
The local program is present:

- In the 400m range.
- In the 400m- 800m range.
- Mixed up with regional program

++	all 3 points are relevant
+	3 points are relevant
+ -	2 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

Uses & Activities local scale



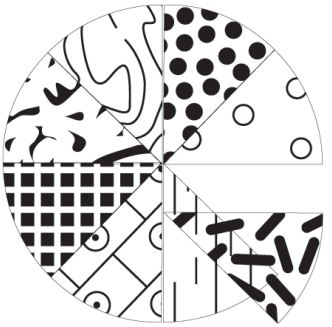
The types of users of the program are:

- Working people.
- Students.
- Youth.
- Elderly.
- Children.
- Families.
- Adults.
- Traveler.

++	7 or 8 points are relevant
+	5 or 6 points are relevant
+ -	4 points are relevant
-	2 or 3 points are relevant
- -	none or 1 point is relevant

SCORE: .....

Uses & Activities regional scale



diversity of program

Uses & Activities regional scale

time of use program

The regional scale- 800 meter zone provides in the following program:

- Restaurant/bar.
- Sport.
- Cinema/ Theater.
- Hotel.
- Park.
- Shops.
- Crèche/childcare.
- Education
- Conference Rooms
- Stadium
- Offices

++ 9 or 10 points are relevant
+ 7 or 8 points are relevant
+ - 5 or 6 points are relevant
- 3 or 4 points are relevant
- - 2 or less points are relevant

SCORE: .....

The program of the regional scale is used during:

- Mornings (weekdays).
- Afternoon (weekdays).
- Evening (weekdays).
- Night (weekdays).
- Mornings (weekends).
- Afternoon (weekends).
- Evening (weekends).
- Night (weekdays).

++ 8 points are relevant
+ 6 or 7 points are relevant
+ - 5 points are relevant
- 3 or 4 points are relevant
- - less than 3 points are relevant

SCORE: .....

Uses & Activities regional scale

singularity of the program

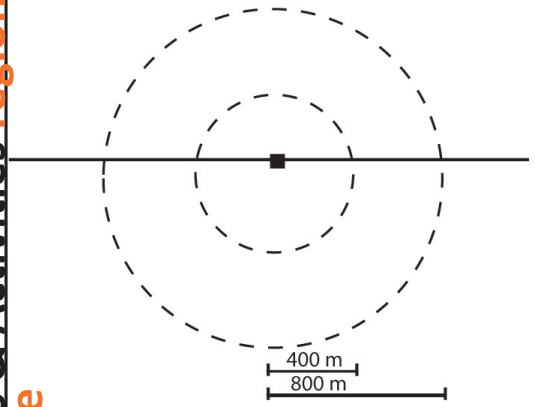
Presence of unique/specific type of program that contributes to an unique character of the place. (Chose one.)

- 0 type of program that is unique/specific.
- 1 types of program that is unique/specific.
- 2 types of program that is unique/specific.
- 3 types of program that is unique/specific.
- 4 or more types of program that is unique/specific.

++	4 or more
+	3
+ -	2
-	1
- -	none

SCORE: .....

Uses & Activities regional scale



situation of program

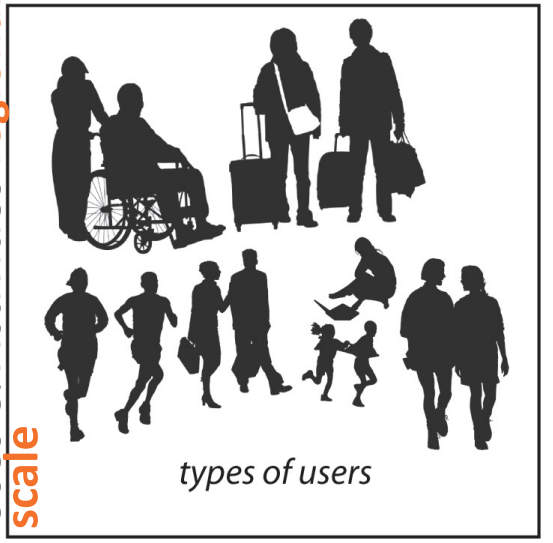
The regional program is present:

- In the 400m range.
- In the 400m- 800m range.
- Mixed up with local or internal program.

++	all 3 points are relevant
+	3 points are relevant
+ -	2 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

Uses & Activities regional scale



The types of users of the program are:

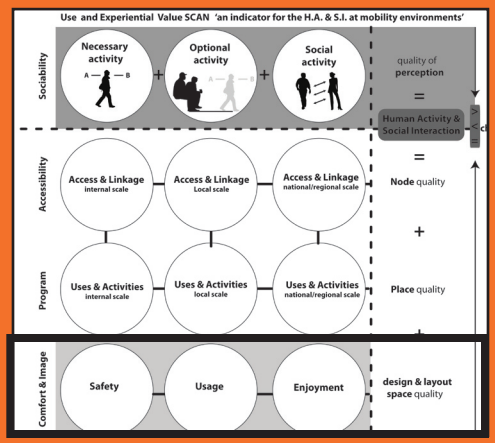
- Working people.
- Students.
- Youth.
- Elderly.
- Children.
- Families.
- Adults.
- Traveler.

++	7 or 8 points are relevant
+	5 or 6 points are relevant
+ -	4 points are relevant
-	2 or 3 points are relevant
- -	none or 1 point is relevant

SCORE: .....

CHECK
space quality

Safety
Usage
Enjoyment



safety

Protection against traffic and accidents

The public space offers protection against:

- Protection for pedestrians.
- Eliminating fear of traffic.
- Vehicles do not dominate the public space.
- Vehicles do not prevent pedestrians from easily getting through the space.

++	all 4 points are relevant
+	3 points are relevant
+ -	2 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

safety

Protection against crime and violence

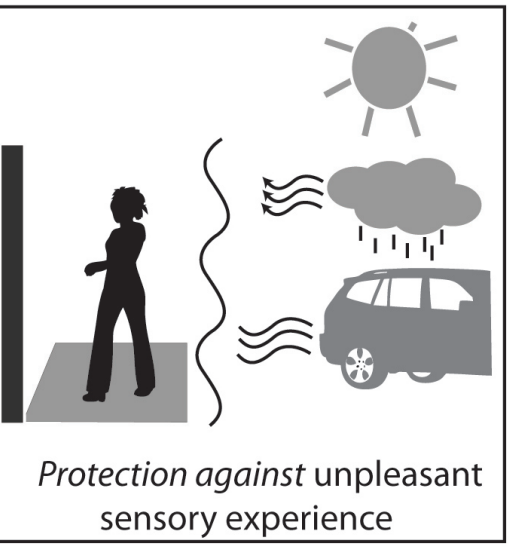
The public space offers:

- ○ Lively public realm.
- ○ Eyes on the street.
- ○ Overlapping functions day and night.
- ○ Good lighting.

++	all 4 points are relevant
+	3 points are relevant
+ -	2 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

safety



Protection against unpleasant sensory experience

The public space offers protection against :

- ○ wind
- ○ rain/snow
- ○ cold/heat
- ○ pollution
- ○ dust/ noise/ glare

++	all 5 points are relevant
+	4 points are relevant
+ -	2 or 3 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

usage

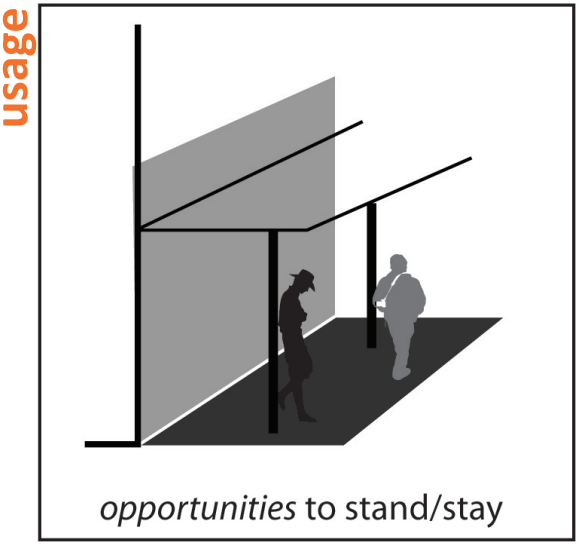
The public space offers:

- ○ Room for walking.
- ○ No obstacles.
- ○ Good surfaces.
- ○ Interesting facades.

++ all 5 points are relevant
+ 4 points are relevant
+ - 2 or 3 points are relevant
- 1 point is relevant
- - none points are relevant

SCORE: .....

usage



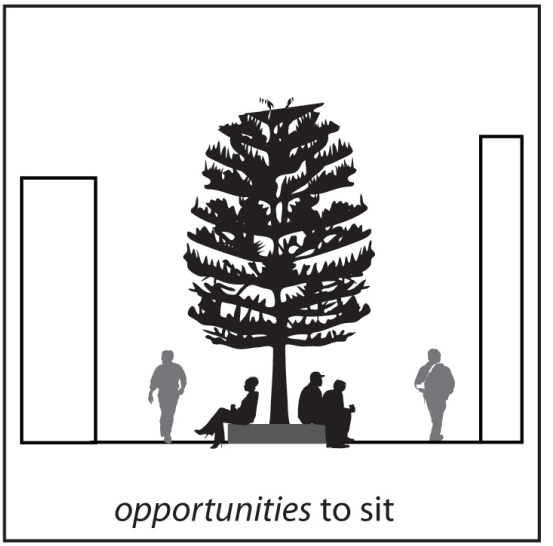
The public space offers:

- ○ Edge effect/ attractive zones for standing/ staying.
- ○ Support for standing.
- ○ Facades with good details that invite staying.

++ all 3 points are relevant
+ 2 points are relevant
+ - 2 points are relevant
- 1 point is relevant
- - none points are relevant

SCORE: .....

usage



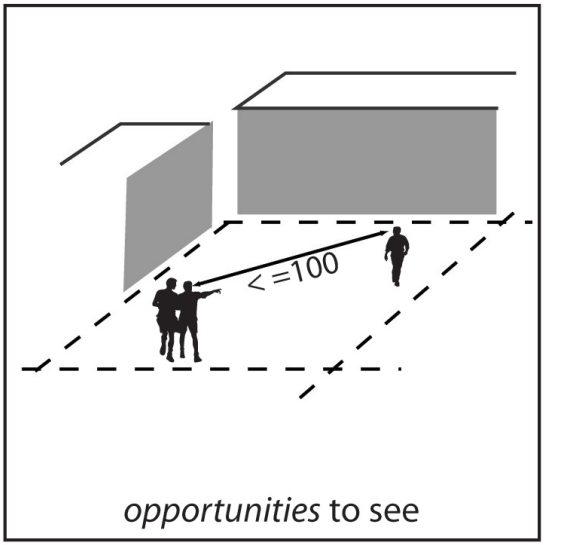
The public space offers:

- ○ Zones for sitting.
- ○ Utilizing advantages; sun, view, people.
- ○ Good places to sit.
- ○ Benches for resting.

++	all 4 points are relevant
+	3 points are relevant
+ -	2 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

usaga



The public space offers:

- ○ Reasonable viewing distance (optimum 100 meters).
- ○ Unhindered views.
- ○ Interesting views.
- ○ Lighting (when dark).

++	all 4 points are relevant
+	3 points are relevant
+ -	2 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

usage

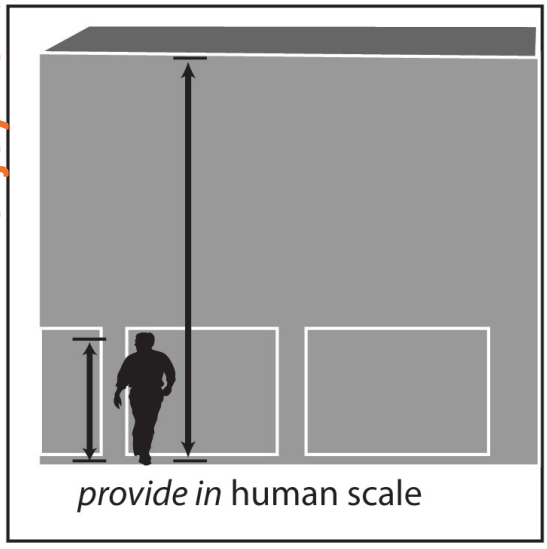
The public space offers

- Low noise levels.
- Street furniture that provides 'talkscapes'.

++	all 2 points are relevant
+	all 2 points are relevant
+ -	1 point is relevant
-	none point are relevant
- -	none points are relevant

SCORE: .....

enjoyment



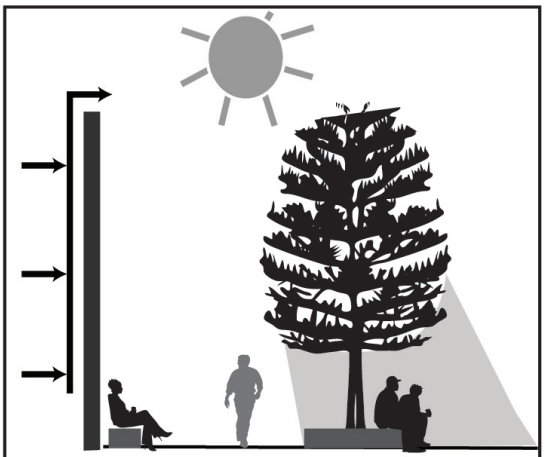
The public space provides in:

- Good relation between buildings and spaces.
- Buildings designed to the human scale.
- Fine grained building blocks.
- Elements of human scale in the public space such as trees, art, objects, street lights .

++	all 4 points are relevant
+	3 points are relevant
+ -	2 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

enjoyment



provide in positives aspects of climate

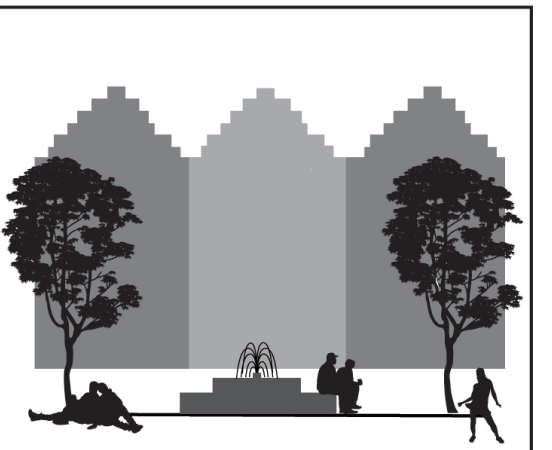
The public space provide in:

- ○ Sun/ shade.
- ○ Heat/ coolness.
- ○ Shelter from the wind.

++	all 3 points are relevant
+	2 points are relevant
+ -	2 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

enjoyment



provide in positive sensory experience

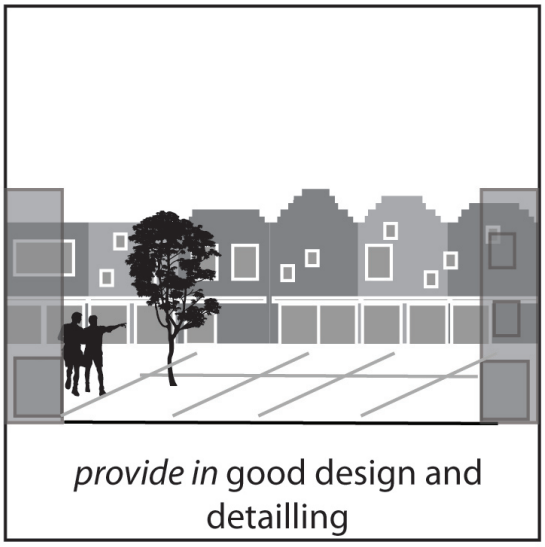
The public space provides in:

- ○ Good materials.
- ○ Fine views.
- ○ Trees/plants/water.
- ○ Play and street entertainment.
- ○ Clean and free of litter.

++	all 5 points are relevant
+	4 points are relevant
+ -	2 or 3 points are relevant
-	1 point is relevant
- -	none points are relevant

SCORE: .....

enjoyment



provide in good design and detailling

The public space provides in:

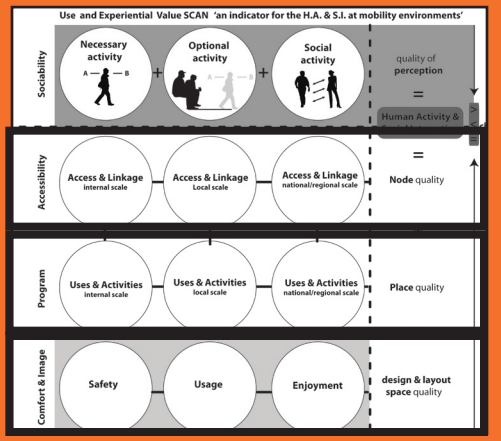
- Delicate and maintenance materials.
- Interaction inside/ outside buildings.
- Facade involved with the street (transparant. scale, rhythm).
- Coherence in architecture.

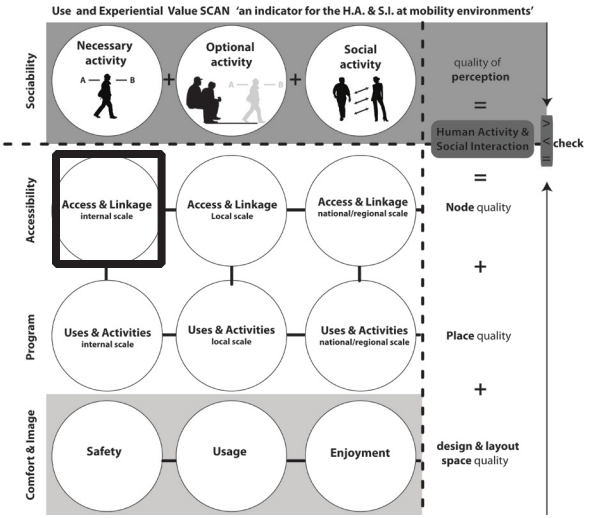
++	all 4 points are relevant
+	3 points are relevant
+ -	2 points are relevant
-	1 point is relevant
- -	none points are relevant

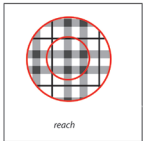
SCORE: .....

3.8 FILL IN

FILL IN
node quality
place quality
space quality







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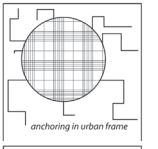

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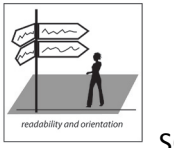

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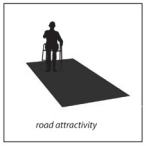

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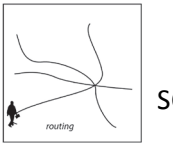

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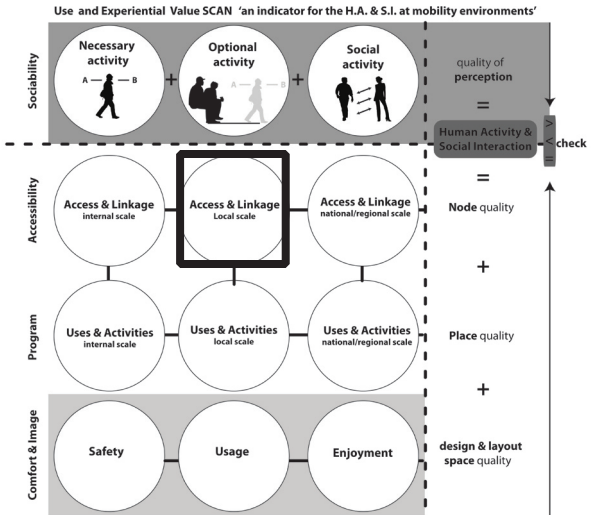

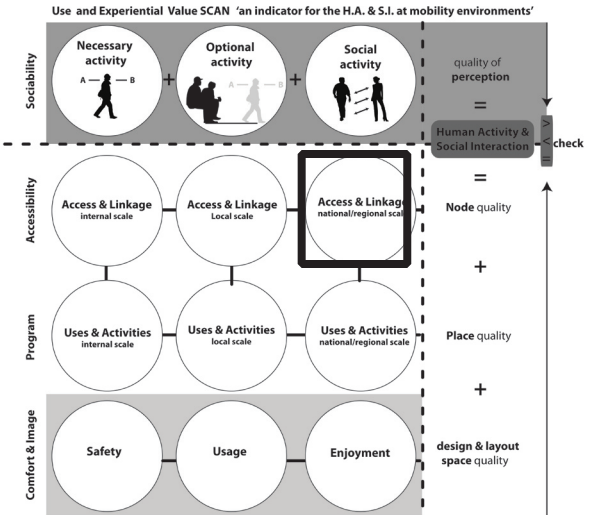

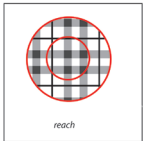

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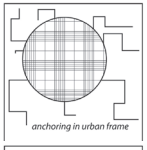

SCORE: .....

SCORE: .....

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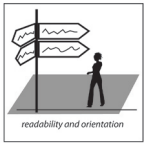

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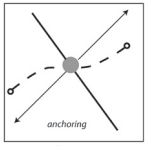

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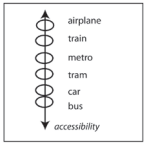

SCORE: .....

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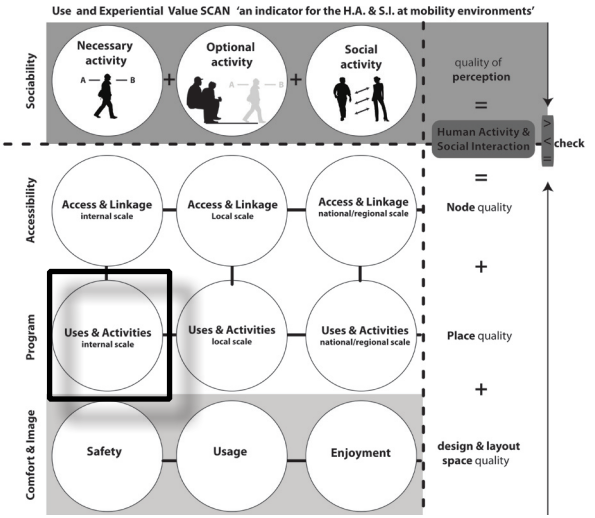

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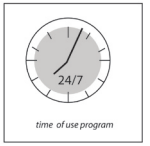

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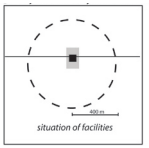

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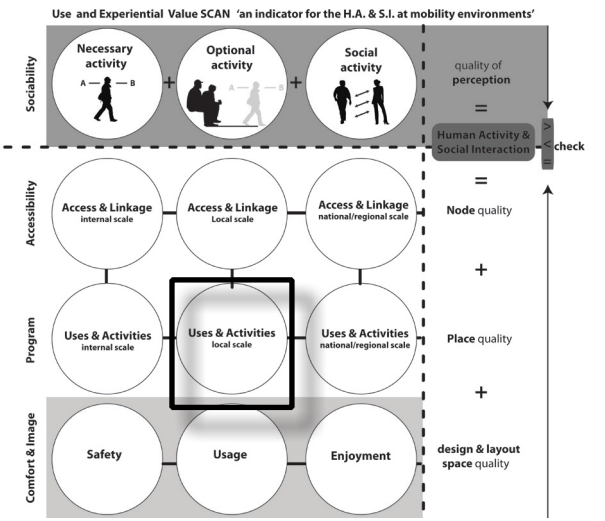

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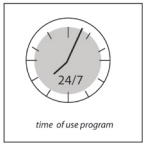

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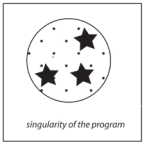

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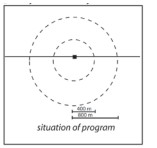

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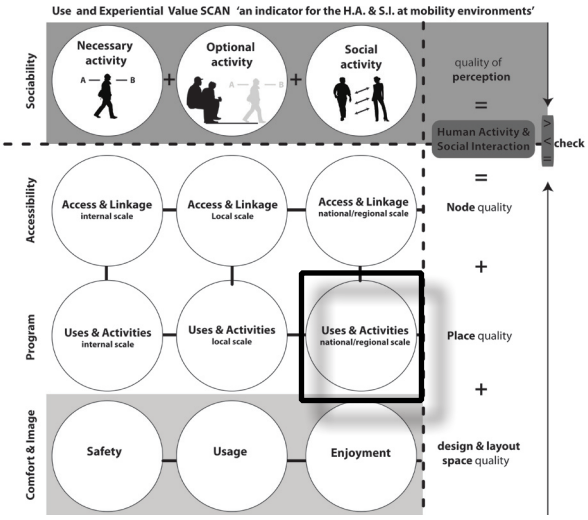

SCORE: .....

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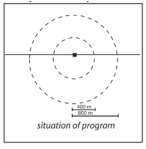
SCORE: .....



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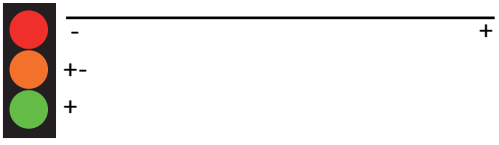

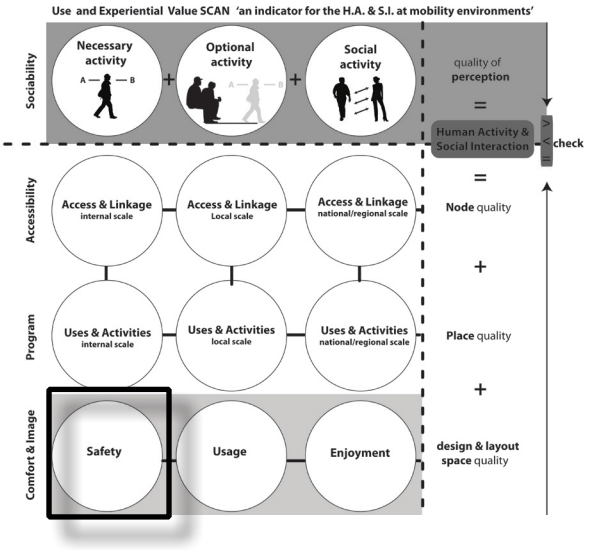

SCORE: .....

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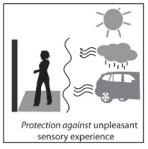

SCORE: .....

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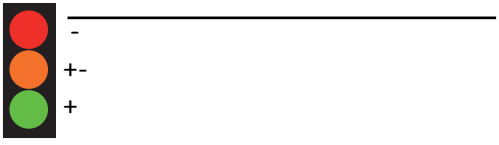
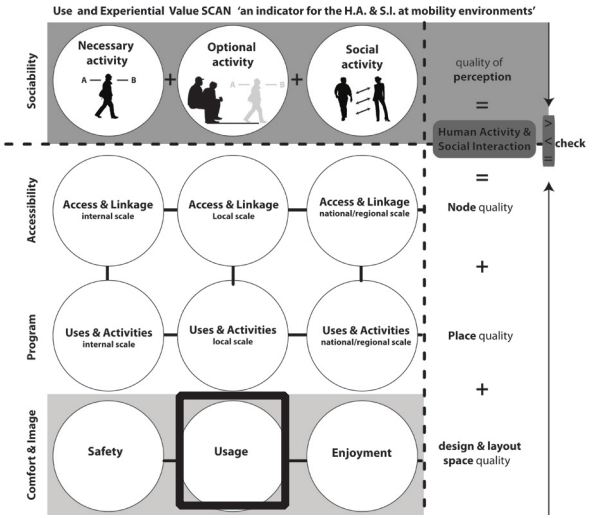
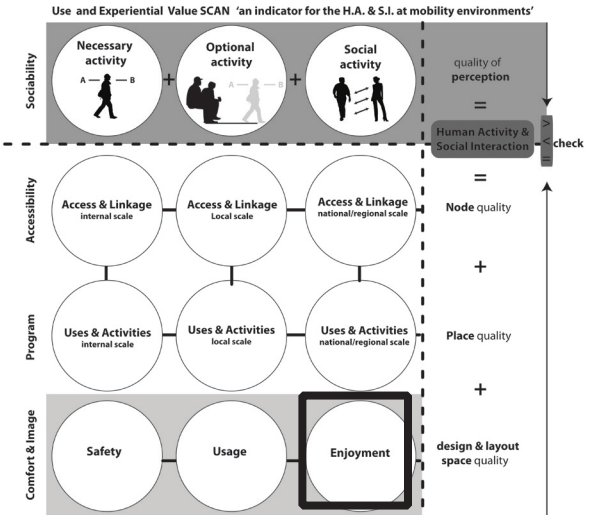


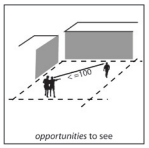




SCORE: .....

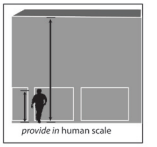
SCORE: .....

SCORE: .....

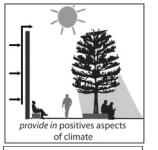


SCORE: .....

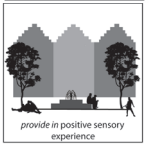
SCORE: .....



SCORE: .....



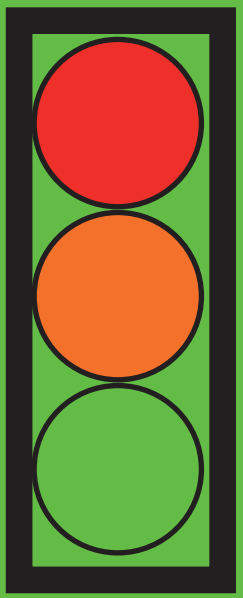
SCORE: .....



SCORE: .....

SCORE: .....

4. THE MEASURING RULE



4. THE MEASURING RULE

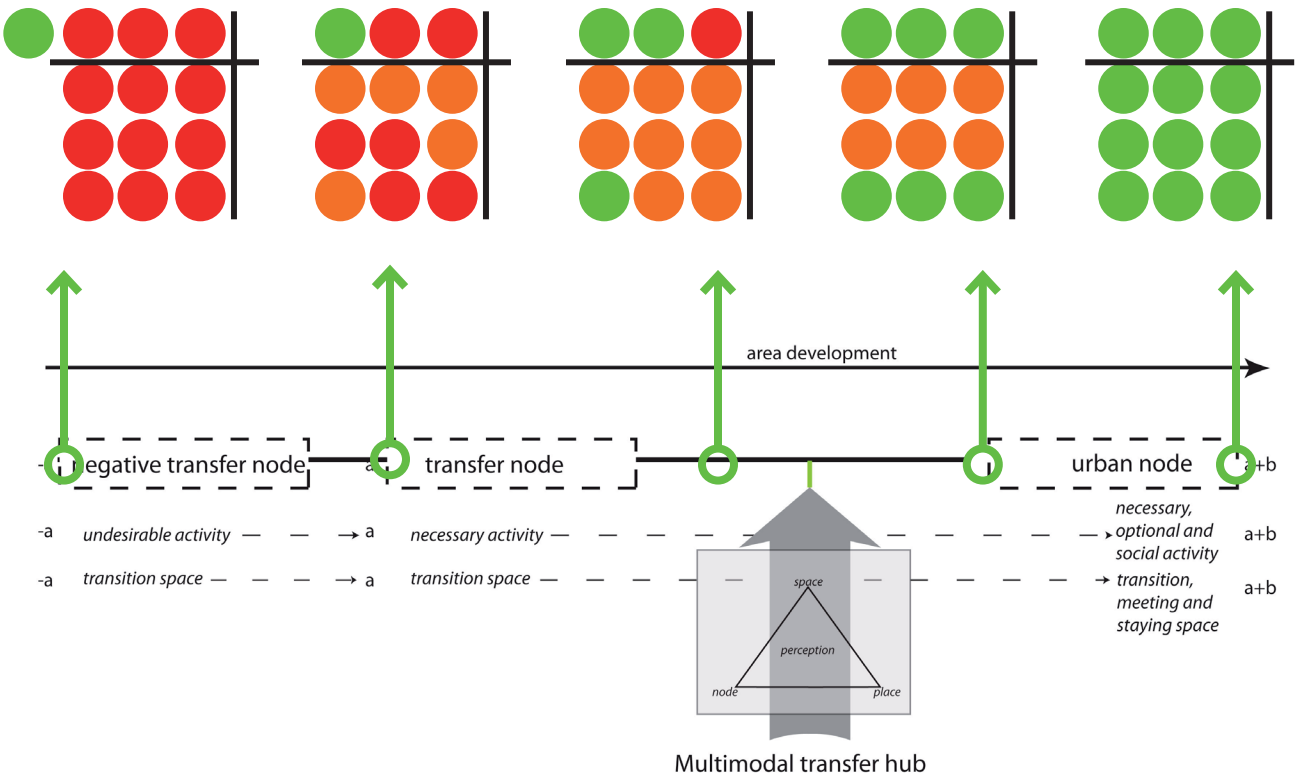


Figure 4.1-

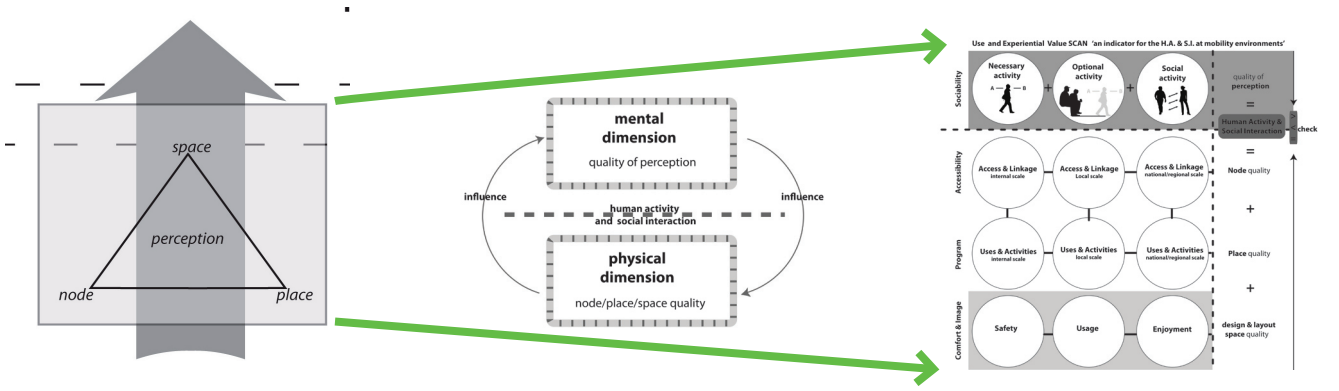


Figure 4.2- the relation between the MEASURING RULE AND THE SCAN

4.1 THE MEASURING RULE

The MEASURING RULE is a way to give a visible indication of the results obtained out of the SCAN AND CHECKLIST; The MEASURING RULE places the case in value of being a transfer node towards an urban node.

The measuring rule exist out of three elements (figure 4.1) ;
- The negative transfer node, with undesirable activity and space that functions as a (insufficient) transition space.
- The transfer node, with necessary activity with space that functions meanly as a transition space.
- The urban node, with necessary, optional and social activity. A space that functions as a transition space, a meeting place and a place of staying.

The big arrow represents the input of a multimodal transfer hub. The square represents the checklist, the output is displayed on the MEASURING RULE itself.

Above the image, the possible matching filled in SCAN's are displayed. It is important to realize that the MEASURING RULE only gives an *indication and an approach* on the value of the activity and if the multimodal transfer hub functions more as only a transfer node, or also as an urban node.

For example, under what exact conditions optional activity starts, or when social activity starts is impossible to catch in a SCAN or a CHECKLIST. THE MEASURING RULE shows a possible approach towards these conditions.

Figure 4.3 captures the essence of the MEASURING RULE. The transparent arrow shows a multimodal transfer hub that is validated as a transfer node (minimal). After applying (a part of) the strategy LIVELINESS, the multimodal transfer hub is moved on the MEASURING RULE towards the urban node.

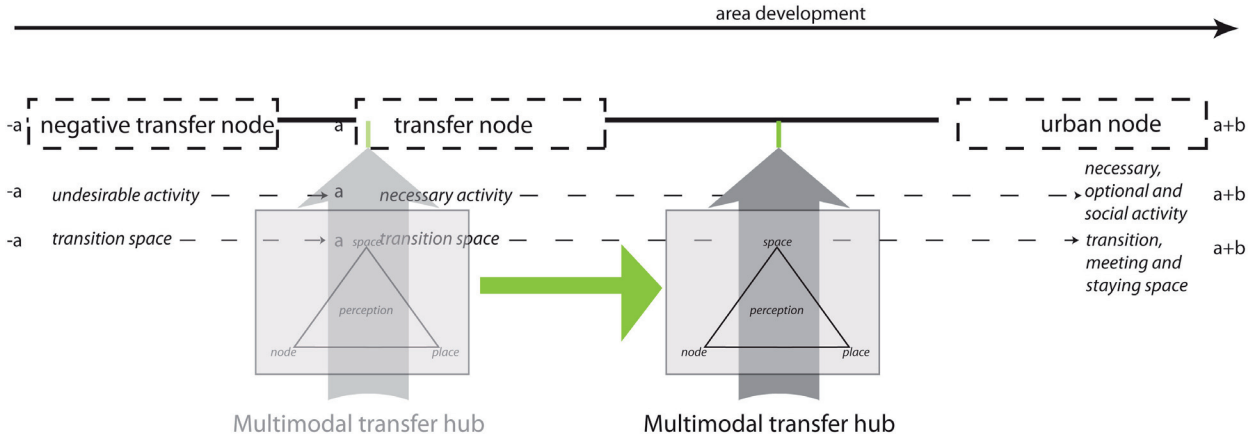


Figure 4.3- from transfer node to urban node.

4.2 THE GENERIC STRATEGY LIVELINESS

The generic strategy Liveliness is explained in the Master's thesis: *From transfer node to urban node. Integrating multimodal transfer hubs in the city fabric.*

The main strategy Liveliness is a generic strategy. The strategy is meant for the development of transfer nodes into urban nodes and is divided in five separate strategies. These five separate strategies are Slow transportation network, injections of program, positioning and bordering of the main public space, compact modalities and sticky areas. For more information, please read the Master's thesis, chapter 3.9.

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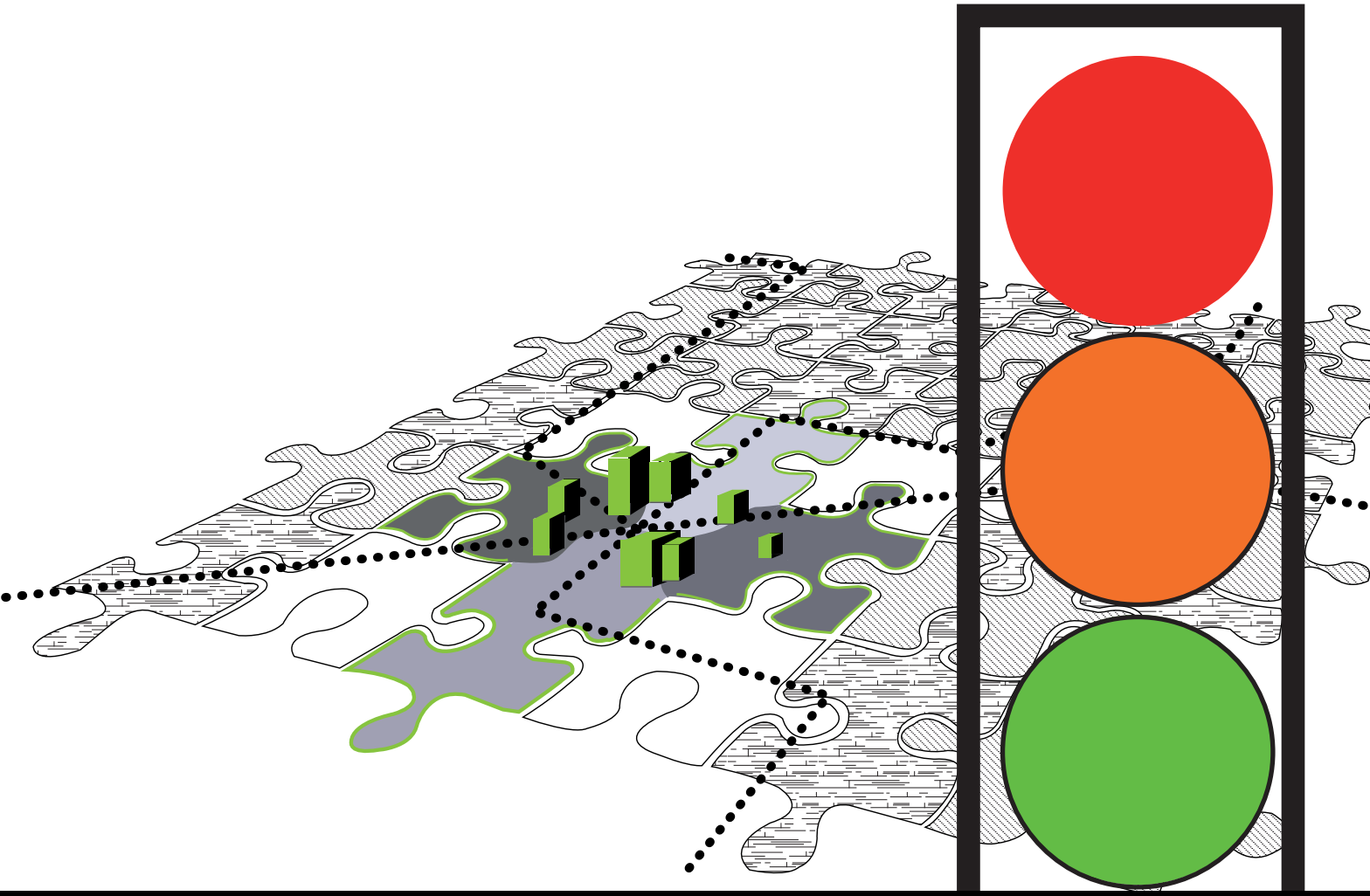

Traffic Light Method

- THE SCAN -THE CHECKLIST- THE MEASURING RULE

an indicator for the human activity and
social interaction at mobility environments