



Close encounters with buildings

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What we have are closed, self-absorbed buildings. What we would like to have is open, versatile, interesting and safe cities. The challenge is how to incorporate large buildings in cities where people have the same small stature and slow pace they had hundreds of years ago. There is now a considerable confusion in the gap between large and small scales and between ‘quick’ and ‘slow’ architecture. Ground floor facades provide an important link between these scales and between buildings and people. For public space and buildings to be treated as a whole, the ground floor facades must have a special and welcoming design. This good, close encounter architecture is vital for good cities.

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Close encounters with buildings

Historically, towns emerged as a result of the exchange between travellers journeying along pathways and vendors trying to sell them their wares from wayside booths as they passed. The booths later became buildings and the pathways became streets, but the exchange between those who came and went and those who stayed put continued to be the key element. Urban buildings were oriented towards urban spaces by necessity. Since then, many urban functions have moved indoors, and shops, institutions and organisations have grown larger. In the process, urban buildings have become bigger and correspondingly introspective and self-sufficient. Planning typically comes to an abrupt halt at the inside of the façade, and the exterior is merely packaging. However, pedestrians still need to be able to walk around cities, urban structures continue to form the walls of public space, and people continue to have close encounters with buildings (Figure 1).

High standards are set for the Kiosks and Pavilions in city spaces. We see them holistically

at a distance as well as at close range, for example, when we buy something. The Kiosk must be pleasing to look at as well as touch, stand next to or walk past. What we want from the ground floor of urban buildings matches what we want from a freestanding Kiosk – and is vastly different from what we want from the other storeys. The ground floor is where building and town meet, where we urbanites have our close encounters with buildings, where we can touch and be touched by them.

Ground floors and close encounter architecture

In this context, the ground floors of all buildings are important. The requirements for façade design become more demanding depending on the level of people’s daily use and the location. The front or entrance façade is especially significant, particularly in buildings where the façade faces the street and sidewalk. Ground floors serve many purposes, depending on the location of the building, its functions and the surrounding space (Figure 2). Generally speaking, close encounters with buildings can be divided into a few main groups.

Walking alongside buildings. Movement can be parallel with buildings: people walk past or

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Figure 1. What we have: closed, self-absorbed buildings. What we would like: open, versatile, and safe cities.

alongside. Movement can also be at right angles to the façade. People go to and fro, approach, enter and leave.

Stopping next to buildings, *standing, sitting or engaged in activities*. Residents and users go outside for a break or to stand in the doorway for a breath of fresh air. Chairs and tables are placed along the façade where access is easy, sitters' backs are protected and local climate is best. Merchants and vendors move their business and wares outside along the façade.

Ground-floor facades are also an attractive place for urban users who don't live in the buildings. The edge effect refers to people's preference for staying at the edges of space, where their presence is more discreet and they command a particularly good view of the space. Another relevant behavioural factor for façade design is the support effect, which refers to the human preference for standing or sitting at a fixed point – a niche, a corner, a column or something else that provides definition as well as psychological and practical physical support. (Gehl *et al.*, 1982)

It is precisely these edges and transition zones between buildings and city spaces that become the natural place for the wide variety of potential activities that link the functions inside the building with street life in general: recreation, play, seating, standing, exhibitions, trade, banking, smoking breaks and so on. The more irregular the façade, the more it invites and supports activities.

Visual opportunities are another important requirement for close encounters.

It is desirable to be able to see out of buildings – and preferably into them – so that the activities inside the buildings and outside in public space are connected visually and thus can enrich and inspire each other.

Along the facades of the city, it is best if pedestrians meet interesting and varied experiences as they pass by. Moving at 5 km an hour, they have time to take in everything around them. Visual contact is close up and personal for pedestrians on city sidewalks.

Thus the rhythm of the opportunities offered is crucial to the richness of the pedestrian experience: the number of doors, windows, niches, columns, shop windows, display details, signs and decorations is significant (Jacobs, 1993). In addition, walking becomes even more appealing if the details and displays along the way are carefully crafted, and if there are things to smell and touch so that all the senses are engaged at some point.

Experiencing buildings

The doors in Dublin with their signal colours, fine details and distinguished frames are familiar from posters, postcards and tourist brochures (Figure 3). They represent good ground-floor architecture – eye-catching at a distance, with the promise of fine details and shiny brass on closer inspection.

Exterior architecture is inextricably tied to the vantage points for viewing. What is seen from a distance and perpendicular position depends on the viewing angles dictated by the structure of the human eye.

Human biological history has given us sight that is largely frontal and horizontal. Being able to see straight ahead and to the sides was important to our forefathers because potential enemies and danger existed largely on the same plane as themselves. The obstacles hunters and gatherers might encounter *en route* – stones and snakes and such – needed a watchful eye, while little danger was expected from above.



Figure 2. (a) Chatting by; (b) Entering and leaving; (c) Walking alongside; (d) Standing alongside; (e) Taking a break by; (f) Standing in doorways; (g) Shopping next to; (h) Interacting with; (i) Looking at displays in; (j) Sitting on; (k) Sitting next to; (l) Looking in and out of.



Figure 3. Dublin facades at different viewing distances.

Therefore our sense of sight is well developed straight ahead and to the sides, where we can see or rather glimpse movements almost 90 degrees to either side. Above us we can only see about 50 degrees, while our downward field of vision is considerably wider, about 75 degrees. We tilt our heads downward about 10 degrees while walking normally and can take in almost everything beneath us. But of the world above us, we see very little (Figure 4).

With respect to building architecture, this means that as pedestrians we have to stand at quite a distance to see a building in its entirety. When we come closer, we have to stretch our necks and lean our heads far back to take in the whole building, but few structures are designed for viewing from that angle. As we move closer the upper storeys gradually disappear from view, until we can only see the ground floor, or when we are really close, only a section, like the details on the doors in Dublin.

Experiencing people

Sight and hearing are our remote senses. Closer up we can also activate the sense of smell, touch and taste. We can smell dust and paint, touch decorations or feel the heat reflected from a building façade. Ground-floor facades have a far greater emotional impact on us than our perceptions of the rest of the building or the street, which we sense from a much greater distance and with correspondingly lower intensity.

Our senses of smell, touch and taste are closely connected to our emotions (Figure 5). Short distances are needed to provide intense and emotionally powerful experiences, while the emotional charge of communication across greater expanses is impersonal and less vehement. We transfer the perceptions of intimacy, meaning and emotional impact from our meetings with people to our meetings with buildings. In other words, strong and dynamic responses are at work here.

Experiencing streets

While our perception of public space naturally depends on viewpoint and distance, the speed at which we move is crucial. Rooted in biological history, the human sensory apparatus is designed to perceive and process sensory impressions while moving at about 5 km/h (Figure 6).

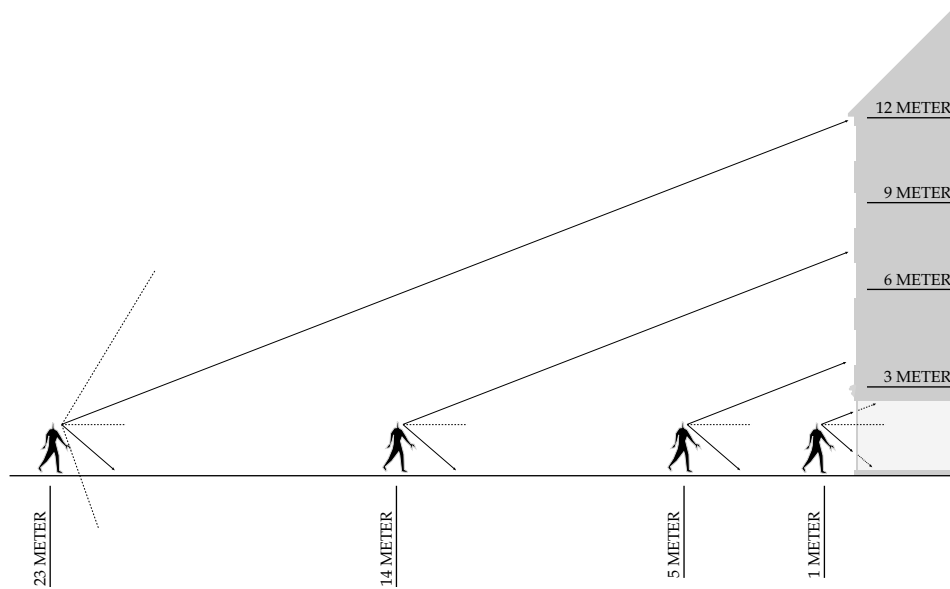


Figure 4. Effective viewing distances.



Figure 5. An intense engagement of the senses.



Figure 6. 5 km/h architecture, Västres Långgaten, Stockholm.

The 5 km/h architecture matches walking pace. On this scale, spaces can be small. Manoeuvring on foot is easy and pedestrians can get quite close to facades. Signals and signs are viewed at close range and thus can be small and refined. Traditionally, 5 km/h architecture is also rich in detail, because viewers have a good vantage point and the time to appreciate it properly. In short, 5 km/h architecture combines the best of two worlds: a glimpse of the town hall tower or distant hills at the end of the street and the intense contact of ground-floor facades up close.

In contrast to this 'slow' architecture is the 60 km/h architecture along the roads used by vehicles. Here large spaces and signs are a necessity, and

since drivers and passengers cannot perceive detail when moving at this speed, the matching architecture is characterised by smooth buildings short on detail (Varming, 1970).

Modern cities are heavily influenced by confusion over these two scales. Pedestrians are often forced to walk in 60 km/h urban landscapes, while new urban buildings are designed as boring and sterile 60 km/h buildings in traditional 5 km/h streets.

The truth, of course, is that the people walking in our cities today have the same small stature and walk at the same speed they have always done, and naturally the need for good 5 km/h architec-



Figure 7. Promenading and panning the scene.

ture along pedestrian routes remains unchanged (Bosselmann, 1998).

Viewpoint and distance are the other factors that play an important role in our perception of public space. If we walk on the sidewalks, we perceive the buildings from various angles. We see buildings across the street as more or less whole entities, but usually from a distance that lessens the intensity of the experience. We are literally distanced from a strong emotional response.

Our interaction with the nearest building façade is quite different. Here, at close range, we can see, hear, smell and feel all the details, not only of the ground floor, but often of the display window and shop interior as well. In the best-case scenario, there is a lot to see. Ordinarily when we are up close and personal with the ground-floor façade, we have no sense at all of the other storeys (Figure 7).

What this means in practice is that it is the ground floors we perceive and remember when walking in town. A study of the main pedestrian street in Copenhagen showed that almost everyone interviewed had a strong sense of what was happening at ground-floor level – which shops were located where, and which displays were particularly interesting at that point in time. It was much more difficult to get answers to questions about the upper storeys – heights of buildings, shapes and colours. Control questions about the location of non-existent buildings were answered readily. Clearly people had not noticed much about the buildings themselves – real or fictive. The explanation, of course, is that the upper storeys of the buildings in the city centre are always

viewed from great, impersonal distances and often from sharp angles.

The closer we get to buildings, the more we perceive and remember the content of our field of vision.

If the ground floors are interesting and varied, the urban environment is inviting and enriching. If the ground floors are closed or lacking in detail, the urban experience is correspondingly flat and impersonal (Figure 8).

Where building and city meet – past and present

Carefully differentiated treatment of the interface between building and city was taken for granted in the past: building units were small, shops modest and public space designed primarily to accommodate pedestrian traffic. Building techniques allowed rich detailing that included pillars, pilasters, nooks and niches. Functions and doorways were close together and goods for sale eye-catching. City space became almost inherently intense and inviting due to the short distance between experiences and great functional variety (Figure 9).

The starting point is quite different in newer cities and districts where new functions and buildings are incorporated into existing properties. Building units are larger and the shops and businesses remaining at street level have grown correspondingly bigger, often with a considerable part of the façade closed towards the street. Rational prefabricated construction further reinforces the large-scale operations and large formats, as do glassy ‘less is more’ facades. Points of exchange,

5 km/h scale or 60 km/h scale



Open or closed



Interactive or passive



Rich in sensory experience or boring



Varied or uniform



Vertical or horizontal



URBAN SCENES AT EYE LEVEL

Key words: scale and rhythm

Pedestrians experience the urban scene at maximum 5 km/h, with plenty of time to enjoy the surroundings. Small units provide a wide range of experiences, and a large number of doors provide many points of exchange between outside and inside. A scale of 5 km/h is compact and rich in sensory experience. A scale of 60 km/h displays its virtues when you are moving at this speed, but rarely are they meaningful to pedestrians.

Keyword: transparency

The opportunity to be on the inside looking out – and on the outside looking in – significantly broadens the range of experiences in the buildings themselves and in urban space. If we walk through the city close to the facades, the various display windows and opportunities to perceive what is happening in the buildings enrich our experience considerably. And people inside the buildings can follow what is happening in the surrounding urban space.

Key words: appeal to many senses

We can draw on all our senses when we are close to buildings, and we have sufficient time to look, listen, smell and touch the good things on offer. A wealth of sensory impressions and shopping opportunities awaits. In contrast, a string of orange posters is a poor substitute.

Key word: texture

Good materials and fine details are an attraction for people strolling through the city. There is ample opportunity to reach out and touch the buildings and examine the smallest detail. Attractive ground-level facades offer texture, good materials and carefully crafted details.

Key words: diversity of functions

The functions inside buildings have a major impact on the activity and attractiveness of the spaces outside. The desire for narrow units and many doors in the façade can be echoed in a desire for wide functional variation inside. The outcome is many units, many points of exchange between outside and inside, and a wealth of many different events and experiences.

Key words: vertical façade rhythms

Walking along a ground floor façade with primarily vertical rhythms makes the walk much more interesting and eye-catching. We move from 'column to column', which makes the walk seem shorter. Facades with primarily horizontal articulation intensify the feeling of distance – a long tiring perspective at eye level.

Figure 8. Urban scenes at eye level.



Figure 9. Small units, many doors. In old as well as modern cities all over the world, lively and attractive shopping streets have very uniform rhythms: 15–20 units and 20–25 doorways every 100 m. The scene changes every 5 seconds as we walk down the street. This same rhythm is also common inside modern shopping malls. (a) Changsha, China; (b) Brasilia, Brazil; (c) Middlesbrough, England; (d) San Francisco, USA.



Figure 10. A closed shopping mall façade, 175 m long, facing the city square in the new town of Ørestaden near Copenhagen, Denmark.

functional variety and intense sensory experiences have become few and far between (Figure 10).

The development of society and the attendant development of architectural ideals have created an urban architecture where meaningful close encounters between city and buildings and between people inside and out have disappeared almost automatically.

Cities no longer hold appeal for pedestrians, particularly at night when closed buildings foster worry and insecurity.

Weighing in against these signals, which clearly encourage people to opt for their cars and otherwise stay away, are numerous factors that decry the proliferation of lifeless facades.

First of all, people continue to walk in public spaces (also in new cities). Furthermore, almost all cities (particularly the new ones) have stated policies to make public space pedestrian friendly, lively and safe. There is widespread awareness that it is healthy and energy efficient to walk, cycle and use public transport – which presupposes being able to walk comfortably and safely to and from transportation nodes. In short, lively, attractive and safe cities are on the public agenda.

In this context, close encounters between buildings and cities need to be re-evaluated. We need to develop a modern building culture that designs the lowest three metres of the buildings as good close encounter architecture.

While it is true that buildings and urban units have become increasingly larger, people continue to be small, slow, and on the lookout for good sensory experiences (Gehl, 2003).

The impact of ground floors on city life

Ground floors and patterns of activity in Copenhagen streets, 2003

The relationship between city life and ground floors has been the subject of numerous studies over the years. The Centre for Public Space Research at the School of Architecture, Royal Danish Academy of Fine Arts, recently carried out a study of the connection between city life and ground floors in seven mixed-use streets in Copenhagen.

Facades and public life, Copenhagen 2003

The study objective was to explore the connection between the content, transparency and design of ground floors, and the extent and nature of pedestrian activities and stays along the street.

The 100-m-long sections of typical shopping streets in Copenhagen were selected as study areas. The sections feature two very different types of façades: (a) varied facades with many doors, visual contact between outside and inside and various functions, and (b) uniform facades with few doors, blind or no windows and few or no functions. A 10-m segment was selected as the primary study area for each section. The 10-m segments were subsequently designated A and E areas.

Other factors such as general population mix, pedestrian flow, climate, time and traffic intensity were constant, as the A and E areas are on the same side of the street and less than 100 m apart.

By comparing the extent and nature of activities within the A and E areas, it is possible to illuminate the impact of the facades (transparency, function, design, etc) on the activities and street life going on in front of them.

Observers in the individual façade segments registered the following:

- Number of people passing by the façade per hour
- Speed at which pedestrians passed the façade
- Number of people who turned their heads towards the façade as they passed by
- Number of people who stopped in front of the façade

- Number of people who went in or out of a door in the façade
- Number of people who carried out other types of activities or stayed in front of the façade; type of activity and where it took place.

The studies were conducted using manual observations (counts and behavioural mapping) divided into morning, noon, afternoon and evening. The day studies were conducted under good summer weather conditions from 10 a.m. to 4 p.m. Evening studies were conducted on autumn weekdays between 5 and 8 p.m., when it was dark but the weather was good for the season.

Day and evening studies

The studies yielded highly uniform results. In general the studies of the seven areas show a clear connection between type of façade and the behaviour and activity level of the passers-by.

Pedestrian traffic is 13% slower along the interesting façade sections. People hurry by the uninteresting or closed facades, but slow down in front of the more eye-catching and open facades.

Recordings of head movements show that 75% of the people passing A facades turned their heads towards the façade, compared with only 21% of those passing E facades.

Of all pedestrians, 25% stopped in front of A facades, compared with only 1% in front of E facades.

Studying the various types of activities taking place on the sidewalk in front of the two facade types shows that activities in front of E facades were largely functional, such as withdrawing cash from an ATM, parking bicycles, and entering and leaving supermarkets. The activity patterns in front of A facades were far more varied, less direct and often spontaneous. Even activities such as conversations, waiting for someone or talking on cell phones took place more often in front of A facades. Urban life flows to sectors with more activity: people attract people.

It is interesting to note that many of the shops that attracted a lot of attention such as head-turning and stops were not necessarily those with a lot of people going in and out. Conversely, while the boring supermarkets had few types of activities in

front of their facades, they had a relatively high number of visitors.

The evening studies showed that the difference in interest in A and E facades was even more dramatic than in the daytime. When it is dark, it is more tempting to turn your head towards or stop in front of an interesting, illuminated façade, whereas in the evening, dark, more closed facades offer even less diversion and are uninteresting. Similarly, it is obvious but not surprising that the number of activities in general falls drastically in the evening. People are on their way home and their actions are primarily rational and necessary. They withdraw cash, buy groceries and move on quickly, but even though they are generally moving faster, there is still a distinct difference in the walking speed in front of A and E facades. Typically, people pass lighted A facades slower than darker E facades. Also in the evening, the phenomenon of activity attracting more activity is clearly at play. For example, a mini-market with a wide selection located in one of the study areas was the busiest shop in the area – also in the evening – and it was typically here that people also made calls on cell phones, stopped to eat food, and crossed the street, for example.

Summary: wealth of experience, pedestrian security and considerably more life in the street
Studies like the one mentioned here provide information about many different aspects of city streets, daily urban life in active shopping streets, the attractiveness of the various shops, transparency, design, façade details, and the usefulness of having residences in commercial streets. The studies also disclose new phenomena like ATMs and smoking breaks and their impact on the fast pace of city life.

When we consider the issue of the impact of ground-floor facades on public life, the picture is clear. Pedestrians move slower in front of the city's active facades, more people stop, and several of the city's other activities take place on the friendlier more populated street segments Figure 11.

When we add it all up, we see that the number of stops and other activities is seven times greater in front of active rather than passive facades (Figures 12 and 13). On top of this, the slower



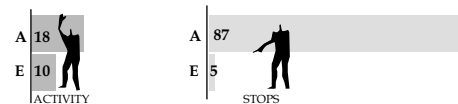
Figure 11. Street life in Copenhagen.

PEDESTRIAN BEHAVIOUR IN FRONT OF GROUND FLOORS IN MAIN STREETS
Average of all people who walk by the 2x10-metre façade segments in the seven areas studied:



Figure 12. Pedestrian behaviour in front of ground floors in main streets.

ACTIVITIES PER HOUR IN FRONT OF GROUND FLOORS IN MAIN STREETS
Average in front of each of the 10-metre façades in the seven areas studied:



In total there is 7 times as much activity and time spent in front of interesting facades.

Figure 13. Activities per hour in front of ground floors in main streets.

pace of pedestrians passing the active street segments generates an additional 13% increase in total activity level.

One main conclusion must therefore be that lifeless, closed facades pacify while open and interesting facades activate urban users. This is in itself a useful conclusion, but it is also important to note that the activity level of a street is quantitative in principle, a measure of how many people come and how much life and activity there is to look at. A higher activity level is thus not necessarily the same as better urban quality. However, if we look closer at street scenes and consider the many good intentions to create lively, active and safe cities, then we must agree that knowledge about the factors that influence urban life positively is an important instrument for planning better cities.

Further narrowing the focus on street scenes, we find the most compelling arguments for promoting well-conceived ground-floor policies: the variety of experiences and the sheer pleasure of journeying through the city. What we need to do is encourage and insist on freedom of movement for pedestrians in their own city. Façade policy also addresses the issue of urban security.

Instead of focusing solely on how many people walk, stop, sit and stand, it is also important to look at quality content, wealth of experiences, and yes, the simple delight in being in cities.

And ground-floor architecture plays a key role in this context as well.

Case study: ground-floor studies in Madrid, Spain, 2003

Architect Tomás Gil López carried out a PhD study in Madrid in 2001 on the influence of edge zones and façade designs on the behaviour of pedestrians in city streets with a relatively high mix of functions (shops, offices, residences, etc) (López, 2003).

The study utilised an index for several factors: rhythm (number of units per 100 m), irregularity (number of niches and openings in a row of façades) and transparency. Façade transparency is defined in part by glassed areas *vs* closed areas, and in part by the opportunity to look into the ground floor area, as well as the integration of activities on the ground floor with the street space (Figure 14). These three factors were evaluated on a scale with three increments: 0, 0.5 and 1, and the three figures were added up so that the total index of a façade can be quantified as between 0 and 3.

Then the index is compared with the number of activities taking place in front of the various types of façades, as well as the speed at which people pass the façade.

It is interesting that this study largely reaches the same conclusions as the recent façade study from Copenhagen: namely, that the more units per 100 m, the greater the transparency, the more niches and details in the façade design, then the more activities on the sidewalks in front of the

façades. The Madrid study also reaffirmed that stopping, conversations, telephone calls, and other waiting activities as well as lower speed and head-turning, etc are phenomena that primarily happen in front of the inviting façades. This conclusion was reached by registering the buildings' physical design exclusively, that is, without including the function of the ground floor.

On the basis of the study, Tomás Gil López gives the following good advice on façade design aimed at providing attractive interesting walks and generally enhancing urban life:

- Doors every 7–9 m
- Glass surface on about 63% of façade length
- Niches and openings that extend façade length by 30%
- Edge zone (for stopping and activities) between 0.7 and 2.0 m wide to prevent stationary people from impeding other pedestrian traffic.

Furthermore, the studies clearly show that activities concentrate in places where there is high transparency (looking in windows) and where there are niches and openings and other opportunities for stopping (stationary activities).

Close encounter architecture in existing urban areas

Planning and designing ground floors in existing – and new – urban areas

The previous sections spelled out the impact of ground floors on public life and the general attractiveness of a city. This section lays out some of the working methods and planning tools and provides examples of successful ground-floor policy and urban planning.

We limit our treatment to mixed high-density city streets and divide the topic into two:

- What can be done in existing cities/city streets?
- What can be done in new urban areas?

Close encounter architecture in existing urban areas

Over time many cities have attempted to ensure or improve the attractiveness of ground floors. For example, the majority of cities in Denmark conducted a campaign in the 1980s and 1990s to limit the spread of passive bank façades along

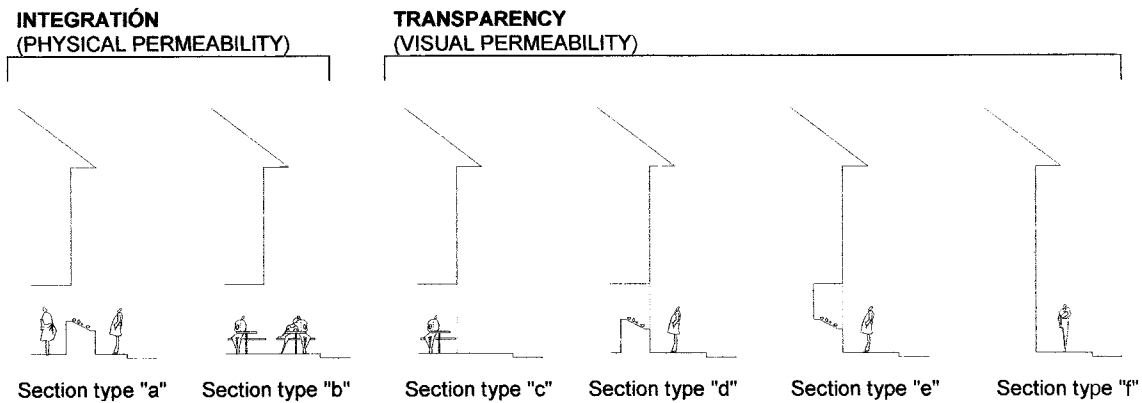


Figure 14. From physical interaction between inside and outside (section a and b) to a more or less visual permeability (section c to f). Studies by Tomás Gil López.



Figure 15. Dublin, Ireland.

main streets, and many local plans set general requirements for the content and transparency of ground floors, sometimes specifying materials and detailing.

The principle of giving ground floors a distinctive design is a longstanding tradition in the UK and Ireland, where shop facades and signs are subject to careful detailing, regardless of how much – or how little – attention is paid to the rest of the building (Figure 15). Similar principles should be



Figure 16. Although this shop boasts about being open 7 days a week – it is certainly not open towards the sidewalk (Adelaide, Australia).

applied to other street-side buildings, whether old or new, because only the ground floor is experienced at close range (Figure 16).

We can also find examples of targeted efforts to improve the attractiveness of ground floors and prevent new, passive buildings being established in existing city streets elsewhere in the world. Cities such as Melbourne, San Francisco and Stockholm have introduced various tools and regulations on the subject. However, problems are often first addressed after considerable damage has already been done to urban quality and the issue becomes painfully relevant (Gehl Architects, 2003).

The first step towards creating a façade policy is often to map the attractiveness of the ground floors along the city streets. How extensive is the problem in a particular city? Where are the problems specifically? Are there areas with a great number of unattractive facades? Where are the attractive facades located? A 'façade attractiveness analysis' can clarify all of these issues.

Studying the situation during the day as well as at night is a valuable supplement.

The next step in the working process is to study the situation along the main streets and pedestrian routes in the city and use that basis to determine which streets and pedestrian areas should be subject to stringent façade requirements, and where it is acceptable to apply more lenient standards.

Figure 17 is a 'façade evaluation scale' drawn up originally for Stockholm. The scale has since been refined and used in many other cities. All of the examples shown are from Copenhagen.

Case study: Stockholm, Sweden

Central Stockholm was the subject of an extensive study of city life in 1990 (Gehl, 1990). The survey comprised quality evaluations of public space in the downtown area, as well as an investigation of how the inner city actually functioned relative to pedestrians and public life. Numerous recommendations were then made on how to improve conditions for urban life.

The impetus for the study was the desire to significantly improve quality of life in the inner city in view of its development history, which included a 20-year period from 1955 to 1975 during which old buildings were torn down to make way for a new, large-scale mono-functional district.

→
Figure 17. Façade evaluation scale. *Category A:* Small units, many doors (15–20 per 100 m). Large variation in function. No blind and few passive units. Lots of character in façade relief – primarily vertical façade articulation. Good details and materials. *Category B:* Relatively small units (10–14 doors per 100 m). Some variation in function. Few blind or passive units. Façade relief. Many details. *Category C:* Mix of large and small units (6–8 doors per 100 m). Modest variation in function. Some blind and passive units. Modest façade relief. Few details. *Category D:* Large units. Almost no variation in function (2–5 doors per 100 m). Many blind or uninteresting units. No façade relief. Few or no details. *Category E:* Large units, few or no doors (0–2 doors per 100 m). No visible variation in function. Blind or passive units. Uniform facades with no relief. No details, nothing to look at.



The many modern office complexes and multi-storey car parks that were brutally planted on the city's sidewalks robbed the 'new Stockholm' of many of its urban qualities, offering instead a multitude of facades that were closed, indifferent and seemingly endless.

Mapping the city's 'good' A and B facades and its unattractive D and E facades pinpointed the extent of the dismissive facades and the districts where the problem was worst (Figure 17).

Once the ground-floor facades were mapped (Figure 18), a ground-floor policy could be drawn up. City streets were categorised as either:

- Streets where quality and pedestrian security was very important and special requirements for ground floors could be made (such as categories A and B)
- Streets where quality was less important and a more liberal framework was acceptable for ground-floor design.

With that strategy in hand, relevant requirements could now be made for new buildings to ensure attractive ground-floor facades. Standards could also be set for the renovation of existing buildings to provide a better functional mix, for example, by opening up facades and increasing the number of doors.

Small miracles in central Stockholm

Naturally, Stockholm's urban environment presented other problems, including a modest number of residents (only 10% of the population of central Copenhagen), and a general unease about being out on the deserted streets at night.

In recent years, some of the most problematic streets along Drottninggatan have undergone remarkable urban renewal that addressed several problems at once. On several streets, blocks of shops and housing 4 to 6-m deep were built outside existing car parks and other buildings that lend themselves to having a new narrow building pasted on the outside of the old one.

The change brought about a complete transformation. Streets have become more intimate, and small units with a diversity of functions have replaced lifeless façades. The number of inhabitants in the city centre has mushroomed and now there are lights in the windows along the once deserted streets (Figure 19).

Case study: Melbourne, Australia

Melbourne's extensive campaign to keep the city vital includes a façade policy. The policy regulates the design of new buildings to ensure a lively street and urban environment with a mix of functions and activities (Figure 20).

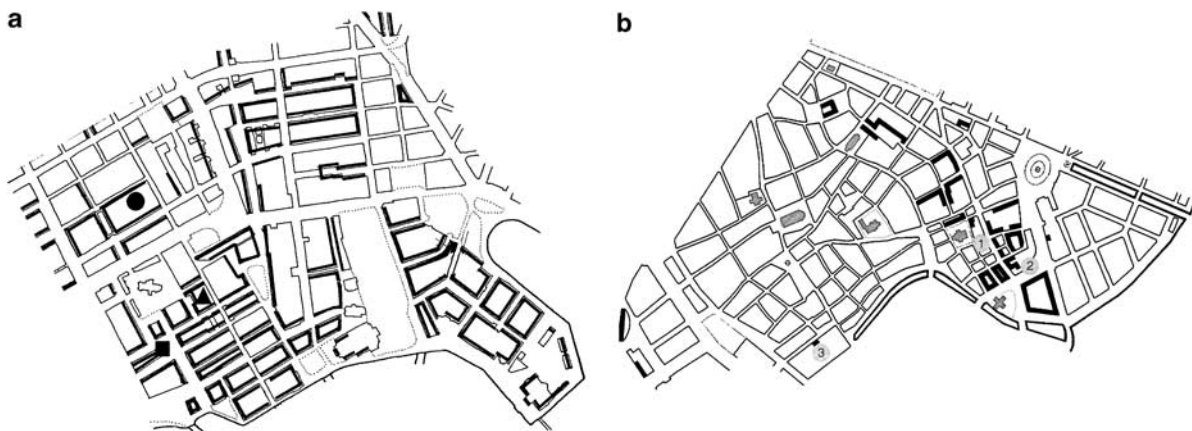


Figure 18. Mapping problem facades (*Categories D and E*). Marking the poor facades of a city on a map provides an indication of the areas in need of urban improvement. (a) Stockholm centre mapped in 1990 and (b) inner Copenhagen in 1996 (Gehl & Gemzøe, 2004). The difference in the number of dismissive facades in the two city centres is dramatic.



Figure 19. Before (a) street with car park and after (b) the same street, now residential, with car park behind.



Figure 20. Once the damage is done and large, closed units have been landed senselessly in the pedestrian landscape, steps can still be taken to open the closed walls. A hotel complex designed by I.M. Pei virtually destroyed this Melbourne street environment (a). Thanks to the strenuous efforts of the city's architects, the façade was successfully reopened recently (b).

The most important objective of the façade policy along the city streets is to make sure that ground-floor façades appeal to pedestrians and contribute to the city's versatility and security with good lighting and level of activity. The policy sets the following framework:

- Shops and food service outlets must have a display window or entrance measuring at least 5 m or 80% of the ground-floor façade (whichever is the larger),
- The rhythm, scale, architectural detail, windows and colours of new façades must be in keeping with existing street space,
- Buildings must be divided into a base (ground floor), additional storeys and top floor,
- Details of interest to pedestrians and the use of good materials must be promoted,

- Facades may not be smooth/devoid of detail; large façades in particular must be divided vertically into smaller sections,
- Signs must be adapted to building designs,
- Windows must be glazed with clear glass; façade design must provide good lighting at night,
- Security grilles must be mounted internally to provide good visibility.

Additional regulations deal with everything from bans on skywalks to height limits for buildings close to the façade line, one reason being to prevent shadows and wind turbulence along the street. The types of business allowed to run ground-floor operations in the city centre are also carefully controlled.

Applicants for building permits must submit an Urban Context Report based on the criteria listed above dealing with factors such as sustainability, ground-floor facades and their visual impact on the local environment, crime prevention, and the impact on sunlight and wind conditions and infrastructure.

Close encounter architecture in new urban areas

Comparing the ground-floor mapping of rebuilt Stockholm with the traditional city fabric in Copenhagen clearly pinpoints the problems in new urban areas and new buildings. The buildings themselves are large, as are the functional units and building elements. The streets are wide and the traffic is fast. The large mono-functional buildings turn their backs on the street and close off their facades. This smooth structure-less corporate architecture is the last link in a chain of factors that create dismissive, uninspired cityscapes. The target group is motorists and the primary objective is apparently to enable them to drive directly into car parks at ground-floor level.

Everything has become bigger, except the people walking alongside the buildings (Figure 21).

The dilemma arises when we also want an attractive city to walk about in.

The two seem irreconcilable and certainly need a targeted approach to ensure attractive ground floors in new urban areas and new buildings.

Fortunately, quite a few examples exist to show that this is indeed possible. It goes without saying



Figure 21. 'Everything has become bigger, except the people.'

that a success criterion should be a non-negotiable requirement when designing new urban areas whose environment must also be attractive to people on foot.

It is also important to analyse functions in new urban areas and buildings to establish where close encounter architecture can play a role. Where are the most important pedestrian routes? Which facades are the most important? Where will people in the new urban area come in close contact with buildings? Where and how can the design of new buildings contribute to life and vitality in new urban areas? (Table 1).

The question is not what the new urban context can do for your building, but what your new building can do for the context!

Case study: Aker Brygge, Oslo, Norway

Aker Brygge in Oslo (1985–1992) stands out among new urban areas. It has become an extremely attractive and popular part of the city, and a number of basic qualities and planning principles can tell us why (Figure 22).

Building density is compact, functions are mixed, urban spaces carefully designed to accommodate the attractions in the area, and active, varied ground floors face the most important public spaces.

Ground-floor attractiveness was followed up in the year 2000 by an 'inspection' of all facades in order to remove any later additions that blinded windows or closed off doors, and to impress on shop and building owners the importance of maintaining active ground floors.

The simple recipe used for Aker Brygge has so improved the overall attractiveness of the area that Linstow ASA, the private property developer that owns the lion's share of Bryggen today has decided to apply the main principles to future areas, including the Bjørvika/Bispevika area along the Oslo waterfront.

The most important lesson learnt from Aker Brygge is that lively attractiveness in new urban areas is the best investment in the long term.

The overriding planning principle has to be: first life, then space, then buildings. Thus the first step

Table 1 Factors to consider and include in the planning process to create living city streets

LIST OF KEY WORDS			
SCALE	MANY UNITS – VERTICAL DIVISIONS Minimum 10 units per 100 m provides an interesting façade and a vertical façade expression that shortens the perception of distance	RHYTHM Narrow units, many doors and a wide mix of functions provides a dynamic rhythm in the streetscape	SPACE SCALE The width of the street relative to surrounding buildings, for example, a scale of 2:1, 1:1 or 1:2
	TRANSPARENCY Visual contact between inside and outside increases the street space as well as opportunities for interaction with buildings	LIGHT IN DARKNESS Night lighting maintains transparency	ACTIVE FACADES Interesting window displays Many entrances The opportunity to observe ground-floor activities
DESIGN TRANSPARENCY	UNBROKEN FACADES No gaps in the row of facades Keeping the façade in line with the other facades on the street	FACADE RELIEF Doorsteps, edges to sit on or stand next to, benches, niches and columns enrich sensory impression and enhance opportunities for stopping and staying	MATERIALS AND DETAILS Wealth of details Quality materials Good sensory experiences
	EXCHANGE Function and content with street appeal Pleasant smells along the street and wares out on the street	FUNCTION AND CONTENT Rich variation of functions to create life and a feeling of security at any time of day or night	EDGE ZONES Detailing of the base of buildings Displays and wares on the street Soft edges
EXT. CONDITION	CLIMATE Utilize good sun conditions Avoid wind problems	LIGHTING Good evening and night lighting – also in street space	TRAFFIC Wide sidewalks that have few breaks and are accessible to all user groups



Figure 22. Aker Brygge.

of a design plan must be to establish the location and quality criteria for the city's most prominent public spaces, based on specific preferences about

the character and extent of public life in the new part of town. Urban design guidelines can then be drawn up for new buildings (Gehl Architects 1998 & 2000).

Sample guidelines for project development:

- To respect façade lines,
- To establish ground-floor functions that invite the public (shops, cafes, restaurants and other active components),
- To ensure a minimum of 10 doorways per 100 m of façade in order to create life and variation at eye height,
- To ensure a minimum ground-floor height of 4 m to provide room for public activities,
- To set design requirements for facades such as variation, niches, details and verticality.

Finally a sharply reduced ground-floor rent can secure small units, many doors and an attractive mix of units facing the most important pedestrian spaces and routes.

Case study: Almere, The Netherlands

Along with the principle of vertical integration (various functions above each other in buildings), narrow units and many doors have been a recurring planning theme in significant parts of the new town of Almere, 20 km east of Amsterdam. In less than 30 years, Almere has been transformed from reclaimed land to a new town with more than 100 000 inhabitants. A careful planning scheme that encourages life between buildings has resulted in an attractive town with a dynamic urban environment highly unusual for a new town (Figure 23).

Case study: Java Island, Amsterdam, The Netherlands

Several new city districts were developed on the islands in Amsterdam harbour during the 1990s. One of the more interesting developments is on Java Island. Designed by Architect Sjoerd Soeters, the master plan is based on a number of large city blocks stretching from coast to coast on the narrow island. Generous green spaces abound inside the blocks and new canals intersect the island between blocks.

The Java Island development demonstrates careful treatment of the interface between buildings and public spaces. The principle of 'narrow units, many doors' is used systematically, especially along the intersecting canals, where narrow row houses designed by different architects stand side by side in combinations that vary from one canal street to the other (Figure 24).

Case study: Vauban, Freiburg im Breisgau, Germany

Two new city districts, Rieselfeld and Vauban, with 11 000 and 5000 inhabitants respectively, are currently being built in the city of Freiburg in Germany. Both districts are concentrated around a main street served by tramlines to the city centre. Retail shops, offices and residences are stacked above each other in the 4- to 6-storey buildings



Figure 23. Narrow units, many doors and a diversity of urban functions facing a local square in Almere.



Figure 24. Java Island, Amsterdam.

lining the main streets. The principle of 'soft edges' has been used in local residential streets to ensure careful treatment of the transition zones between private and public territories. Combined with the principle of 'narrow units, many doors', the result is unusually inviting and interesting walking environments.

The residential street in Figure 25 is from Vauban, where residential buildings are generally restricted to 3–4 storeys. In Rieselfeld, the buildings are 5–6 storeys high.

Dialogue between city and building

'I don't do context', was Frank Gehry's response when asked about his considerations on adapting the new School of Law to the rest of the beautiful campus at Case Western Reserve University in



Figure 25. Vauban.

Cleveland. Many excellent arguments can be made in defence of his distinctive and unique building whose strength lies in its departure from its context and surroundings.

It can occasionally be refreshing when a building does not insist on a friendly conversation with the people entering and leaving or passing by. However, when departures from the norm and lack of dialogue become ordinary practice in designing new buildings, it can also be a problem. It can be too much of a good thing when Gehrys, great and small, drop buildings onto streets and squares from great heights without concern for the noticeable people environment.

Large units and powerful contractors do not make it easy for building partners to ensure that close encounters can happen. There is also considerable confusion about scale regarding the interface between large and small and fast and slow architecture.

Despite the difficulties, however, it is a challenge that should and must be addressed. When new buildings are planted in places people frequent, the buildings must learn to make meaningful conversation with city spaces and the people in them. Buildings and city spaces must be seen and treated as a unified being that breathes as one.

And ground floors, in keeping with tradition and good sensory arguments, must have a uniquely detailed and welcoming design.

Good close encounter architecture is vital for good cities.

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