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Designing Smoke-Responsible Spaces: Rethinking Smoking in Public Transport Areas

AT Research Series



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1 Executive Summary

This project explores passive smoke exposure in public transport settings in Switzerland, where current legislation does not fully address partially enclosed environments such as train stations and other public transport stops. Despite the 2010 Federal Act prohibiting indoor smoking, outdoor areas remain largely unregulated, exposing large numbers of non-smokers, including vulnerable populations, to harmful secondhand smoke (SHS).

Field observations at various Swiss public transport stops, supported by desk research and thematic analysis revealed recurring problems such as unclear smoking boundaries, inadequate signage, infrastructure that unintentionally promotes smoking and lack of physical separation between smokers and non-smokers. International best practices and recent scientific evidence, including elevated PM2.5 levels up to 21 meters from smoking sources, further confirm the need for spatial interventions.

The strategy promotes voluntary compliance through embedded communication, intuitive zoning, infrastructure adjustments and positive norm reinforcement. This approach aligns with the global tobacco control frameworks and can support healthier, more inclusive public environments in Switzerland and beyond.

2 Background

Passive smoke exposure is a systemic public health challenge that affects millions of people worldwide. According to the World Health Organization (WHO), an estimated 1.6 million people die each year due to secondhand smoke (SHS) exposure (WHO, 2025), may it be from indoor smoking or passive smoke exposure in public spaces, such as train stations, bus and trams stops. The health risks associated with passive smoke are substantial. In adults, it can cause coronary heart disease, stroke and lung cancer, while in children, it can lead to ear infections, respiratory infections and asthma attacks. And in infants it can cause sudden infant death syndrome (SIDS). In WHO 2023 report on the global tobacco epidemic they state the following:

“Voluntary smoke-free policies are not effective and the adoption of legislative, executive or administrative measures is necessary. Partial smoke-free laws simply fail to protect people from the harms of second-hand smoke.”

2.1 Context

Switzerland has failed to ratify the WHO Framework Convention on Tobacco Control (WHO FCTC) for 20 years. As such, Switzerland as a whole has been slow to introduce passive smoke safeguards in public places, or so-called quasi-outdoor spaces, a category into which many public transport waiting areas fall. Since May 1, 2010, the Federal Act on Protection against Passive Smoking has prohibited smoking in all enclosed areas accessible to the public. In practice, this means that smoking is banned in restaurants, public buildings, offices and all forms of public transport. However, the law leaves out so-called “smoke-grey zones.” Because the ban applies strictly to indoor spaces, it does not cover outdoor areas such as restaurant terraces, entrances to public buildings or public transport waiting areas. Thus, while some policies do exist nowadays to regulate smoking in public areas, enforcement and compliance remain inconsistent. This creates ongoing health risks, particularly in heavy foot traffic zones where individuals cannot easily avoid exposure to passive smoke. Recent data show that in Switzerland, 20.8% of the population above the age of 15 are exposed to passive smoke for at least one hour per week (AT Schweiz, 2022, <https://www.at-schweiz.ch/en/knowledge/data-figures/passive-smoking/>). Some actors tried to take things into their own hands.

SBB Case:

This measure was not mandated by Swiss federal law but introduced under the entrepreneurial freedom of transport companies. The Swiss Public Transport Union (Verband

öffentlicher Verkehr, VöV) emphasized that the ban was based on the autonomy of transport operators rather than a legal requirement (VöV, 2019). As a result, enforcement relies on the cooperation of passengers and the presence of station staff, without the backing of legally enforceable penalties for non-compliance.

Today, the results are concerning, signage is often unclear and compliance is consistently poor. The lack of a clear legal framework limits systematic enforcement and creates inconsistencies across transport infrastructures in Switzerland. This stands in contrast to many European countries where national legislation mandates smoke-free environments in both enclosed and certain outdoor public spaces, allowing for fines and structured enforcement mechanisms (WHO FCTC, 2017).

According to the “Station ordinance” section in the SBB website, the following is stated under “Station Rules”:

“Smoking, including e-cigarettes and vaping, outside of designated smoking areas. Cigarette butts must be disposed of in the containers provided.” (SBB, n.d.)

3 Aim and Objectives

As part of AT Switzerland’s broader mission to reduce exposure to passive smoke in public spaces across Switzerland, we conducted a design analysis of passive smoke exposure public spaces. We specifically focused on public transport stops, such as bus and train stations, given that public transport is used by a wide demographic, including children, the elderly and daily commuters; this issue affects a significant portion of the population.

While this report centers on public transport settings, it acknowledges the broader systemic nature of this issue, shaped by social norms, policy gaps and spatial design. Public transport is used as a focused case study to illustrate how targeted interventions can contribute to broader efforts in reducing passive smoke exposure across various environments.

As such, we aimed to offer design-based recommendations for reducing exposure to passive smoke in public transport areas.

To support this aim, the research will pursue the following objectives:

1. Analyze spatial and behavioural patterns at selected public transport stops to identify where, why and how passive smoke exposure occurs.

- Evaluate existing design elements (e.g. signage, zoning, infrastructure) and their effect on smoking related behaviour and passive smoke exposure.
- Review international policies and best practices regarding smoke-free public transport environments to provide contextual grounding.
- Develop actionable design criteria and intervention strategies that can be applied in Swiss public transport settings to support healthier and more user-friendly spaces.

This project focused on the following research questions:

- What spatial design factors contribute to passive smoke exposure at public transport stops?
- How does the spatial design of public transport stop influence smoking behaviour?
- How are the current smoking and non-smoking zones designed at public transport stops?

4 Methodology

This project used a mixed-methods, design-led approach combining desk research, field observation, spatial analysis and thematic analysis. The aim was to understand how spatial design and human behaviour influence passive smoke exposure in public transport waiting areas and to develop spatial strategies that promote healthier public spaces.

4.1 Field observation

Field visits were conducted at selected public transport stops and stations in Switzerland, with a focus on spaces that vary by density, geographic context and user demographics. Observation was chosen as a primary method to gain direct, real-world insights into how people use these spaces, where smoking tends to occur and what spatial features contribute to exposure or avoidance. Five locations were selected as field observation targets:

- Zürich HB (Platforms and general waiting area on ground level)
- Zürich Paradeplatz (Tram stop)
- Aarau Bahnhof (Platforms and bus station in front of the station)
- Bahnhof Bern (Platforms, general waiting area, tram stop and bus stop adjacent to the train station)
- Basel SBB (Platforms)

Approximately one hour was spent at each location, often outside of rush hours. Zürich HB was the only station that was visited twice.

To support consistency across locations, an observation framework (Figure 1) was developed as a part of the research planning. This structured tool guided the systematic documentation of:

- User behaviour (e.g. where people smoke, wait or move)
- Spatial design elements (e.g. seating, ashtrays, signage, boundaries)
- Environmental and social dynamics (e.g. crowding, vulnerable groups, user interaction)

This observation framework (Figure 1) ensured that key data points were captured during each visit, supporting later analysis and comparison. These insights were later coded and thematically analyzed to inform the development of design criteria and intervention directions. The frequencies collected in the thematic analysis reflect how often each behavior was recorded across different locations, rather than how many times the behavior occurred in total. During the field work, each code was typically noted only once per location, even if it occurred multiple times. This means many of these behaviors were more prevalent than the recorded numbers suggest.

Site:

Date/time:

Weather conditions:

Station type:

Peak or off-peak:

Guiding questions:

User Behavior

- Where do people wait? (shelters, benches, near entrances?)
- Where do people smoke? (specific zones, near signs, open areas?)
- Do smokers and non-smokers overlap in space?
- Are people moving through or lingering?
- Are families/vulnerable groups (kids, elderly) present?
- How long do people stay in the space?

Smoking-Specific Indicators

- Are there ashtrays present? Where?
- Is smoking prohibited? Are there signs? Are they visible?
- Do people follow the rules (if any)?
- Are there cigarette butts on the ground?

Design & Spatial Cues

- Is there shelter/covering?
- Are benches or seating placed strategically?
- Are there clear boundaries or zones (e.g. platforms vs waiting zones)?
- Are there barriers or screens that influence flow or division?
- Is there wayfinding signage or public health messaging?

Impressions & Anomalies

- Did anything unexpected happen?
- Does the space feel "inviting" or "tense"?
- How would you describe the atmosphere of the space?

Figure 1

4.2 Desk Research

In parallel, desk research was conducted to build contextual understanding and provide foundation for design exploration. This included:

- Reviewing international and Swiss policies related to smoking bans, public health and public space management
- Studying best practice case studies from other countries or cities
- Analyzing previous research on passive smoke exposure in outdoor and public settings

The insights gathered through desk research helped frame the problem as a systemic and behavioural challenge and offered useful comparisons and benchmarks for future recommendations.

4.3 Thematic analysis

To structure and interpret the observational data, a thematic analysis was conducted. This method was selected for its strength in identifying patterns across large volumes of unstructured data and transforming them into meaningful insights relevant for design.

In this context, codes (Figure 2) refer to specific, recurring observations identified during fieldwork, such as behaviours (e.g. smoking near entrances or trash cans), spatial features (e.g. unclear signage) and social or environmental dynamics (e.g. crowding, mixing of smokers and non-smokers). By grouping related codes, broader themes were developed that reflect key systemic challenges influencing smoking related behavior in public transport environments. These themes (Figure 3) provide a deeper understanding of underlying drivers of passive smoke exposure and helped shape the design criteria and intervention opportunities proposed in the project.

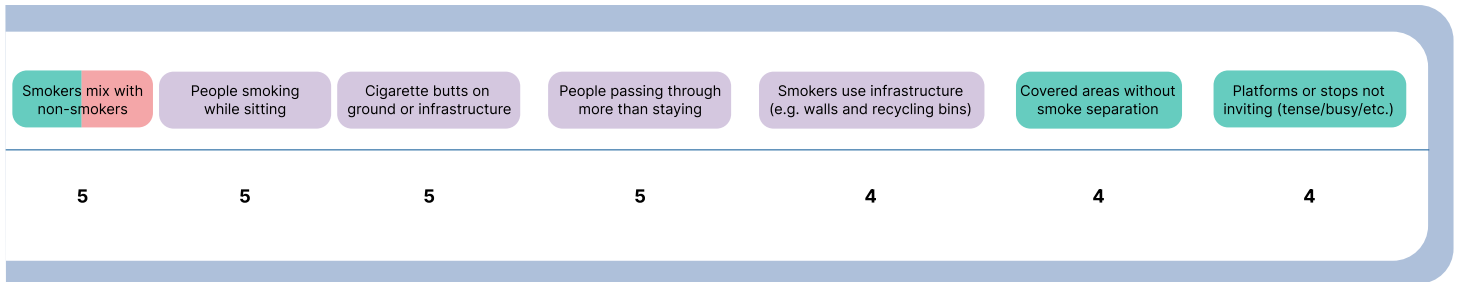
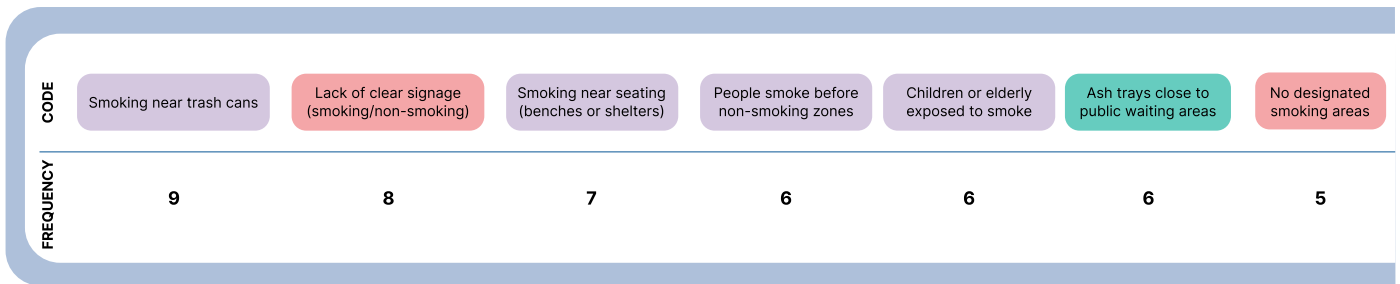


Figure 2

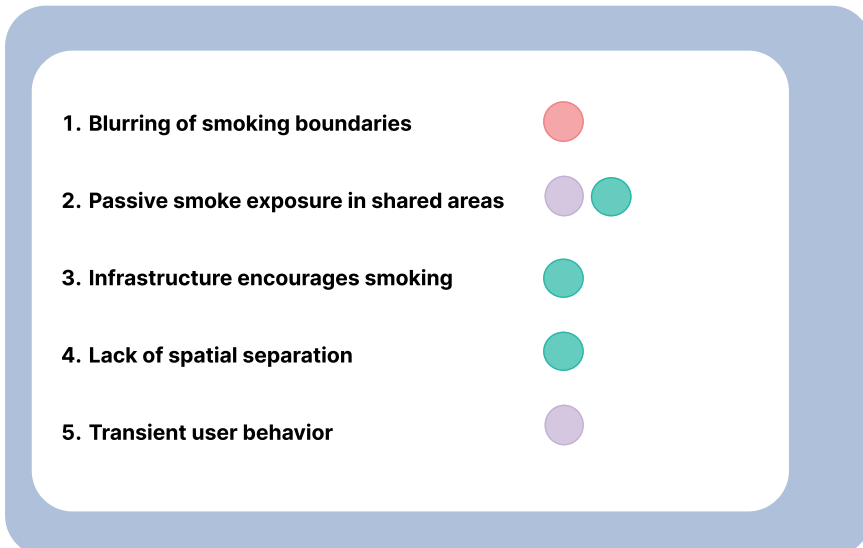


Figure 3

4.4 Visual synthesis and process tools

Throughout the research and design process, Figma was used as a central tool for conceptualization and knowledge synthesis. It supported the collection, organization and interpretation of complex information by allowing visual mapping for insights, codes, themes and system dynamics. Figma enabled the integration of various frameworks and design tools, helped illustrate relationships between different observations and served as a living document to track research progress and intervention development. The visual approach facilitated a holistic understanding of the project context and helped bridge insights across research and design phases.

4.5 Adaptive Methodology

The research methodology remained intentionally flexible. This adaptive approach ensured the process remained responsive and iterative, enabling the researcher to align methods with what the situation required rather than applying a fixed framework from the start.

5 Research Findings

The findings from both, field observation and desk research, revealed clear patterns in how public transport users experience and contribute to passive smoke exposure. The field observation insights were analyzed through thematic analysis and categorized into five key themes that emerged across multiple locations and contexts. These themes represent the key design-related barriers contributing to passive smoke exposure in public transport stops.

5.1 International Best Practices

The best international practices in the prevention of SHS exposure in public transport settings emphasize the importance of a complete smoking ban in these shared environments (Carnicer-Pont et al., 2024; Possenti et al., 2024). Countries such as the Netherlands and Estonia have implemented total bans on smoking in public transport areas. Joint Action on Tobacco Control 2 (JATC2, 2023) suggests that these measures have led to reduced PM2.5 levels, less cigarette litter in the surrounding areas and fewer public complaints about SHS exposure. Additionally, studies suggest that non-smokers are more likely to be disturbed by smoking in high-density urban environments compared to lower-density areas.

These findings align with Article 8 of the WHO Framework

Convention on Tobacco Control (FCTC), which states that all people should be protected from exposure to tobacco smoke in indoor workplaces, public transport and other public places. The accompanying WHO guidelines recommend the implementation of 100% smoke-free environments as the only effective way to fully protect people from the health risks of tobacco smoke exposure.

Recent scientific evidence further reinforces the urgency of generous smoke-free perimeters. A 2024 study measuring outdoor tobacco smoke (OTS) through PM2.5 concentrations found that harmful particulate levels remained significantly elevated up to 21 meters away from a smoker. The study also showed that OTS levels were strongly influenced by wind and distance but still exceeded average background levels even in open-air environments. These findings underscore the need to carefully consider spatial buffers and environmental factors when designing effective outdoor smoke-free areas (Kim & Lee, 2024).

As highlighted in the sources above, policy measures alone are not sufficient. Even if all public spaces were made smoke-free, people who smoke would likely still seek out alternative places, potentially shifting the problem rather than solving it. A sole focus on prohibition also risks further stigmatizing smokers, rather than encouraging healthier behavior. The research emphasizes that smoke-free policies should be accompanied by supportive elements, such as clear signage, designated smoking areas and inclusive communication strategies, that improve usability and public understanding. Creating healthier public environments is therefore not just about regulation but also about thoughtful spatial design and a balanced approach that fosters respectful coexistence. Smoke-free policies are crucial to improve public health but it should be a part of larger, systematic tobacco control aims.

In Switzerland, where a nationwide smoking ban in public transport areas has not yet been implemented, the responsibility often falls on public transport companies to take initiative. This underlines the need for complementary measures, such as those proposed in this report, that use spatial and behavioral design to better protect non-smokers in these shared public spaces.

5.1.1 Geneva Smoking Ban in Public Spaces

From June 1, 2023, Geneva has completely banned smoking in some public outdoor locations including but not limited to, children's playgrounds (including a 9-meter perimeter around them), schools and day care centers and outdoor swimming pools. Additionally, it is forbidden to smoke at

local bus stops. The law is being monitored and includes punitive measures to ensure compliance. The Individuals who fail to comply may be fined between 100 and 1000 francs.

Until today, Geneva is the only Swiss Canton that has adopted such a progressive cantonal legislation for the protection against passive smoke.

5.2 Identified Themes

1. Blurring of Smoking Boundaries

Smoking often occurred in areas where boundaries between smoking and non-smoking zones were unclear. People frequently smoked near entrances, platform edges, trash bins or other objects. These areas are not officially designed for smoking but commonly used for it. As a result, smoker and non-smokers share the same spaces unintentionally.

2. Passive Smoke Exposure in Shared Areas

Non-smokers were regularly exposed to passive smoke in shared waiting zones, such as benches, shelters or crowded platform areas. Vulnerable users (e.g. children and the elderly) were especially affected due to limited ability to relocate. The observations revealed that smokers, children and the elderly are more likely to gravitate toward the benches

on the platforms. Smoking policies are not clearly communicated through signs. Existing signage is often poorly placed and contradicting each other, making it difficult for users to know where smoking is allowed or prohibited.

3. Infrastructure Encourages Smoking

Design elements, such as ashtrays, seating arrangements and trash cans unintentionally encouraged smoking in heavy foot traffic zones. Their placement often conflicted with intended smoke-free areas, contributing to behavioural inconsistency and confusing signage to commuters.

4. Lack of Spatial Separation

There were limited physical or perceptual separation between smoking and non-smoking zones. Even when signage was present, spatial layout often allowed smoke to drift into waiting and walking areas, especially under shared shelters or bottlenecks.

5. Transient User Behavior

Many users were observed only briefly at stops, such as during quick transfers or short waits. This transient nature makes enforcement difficult and emphasises the need for intuitive, low-effort design cues that promote smoke-responsible behavior without relying on active supervision.

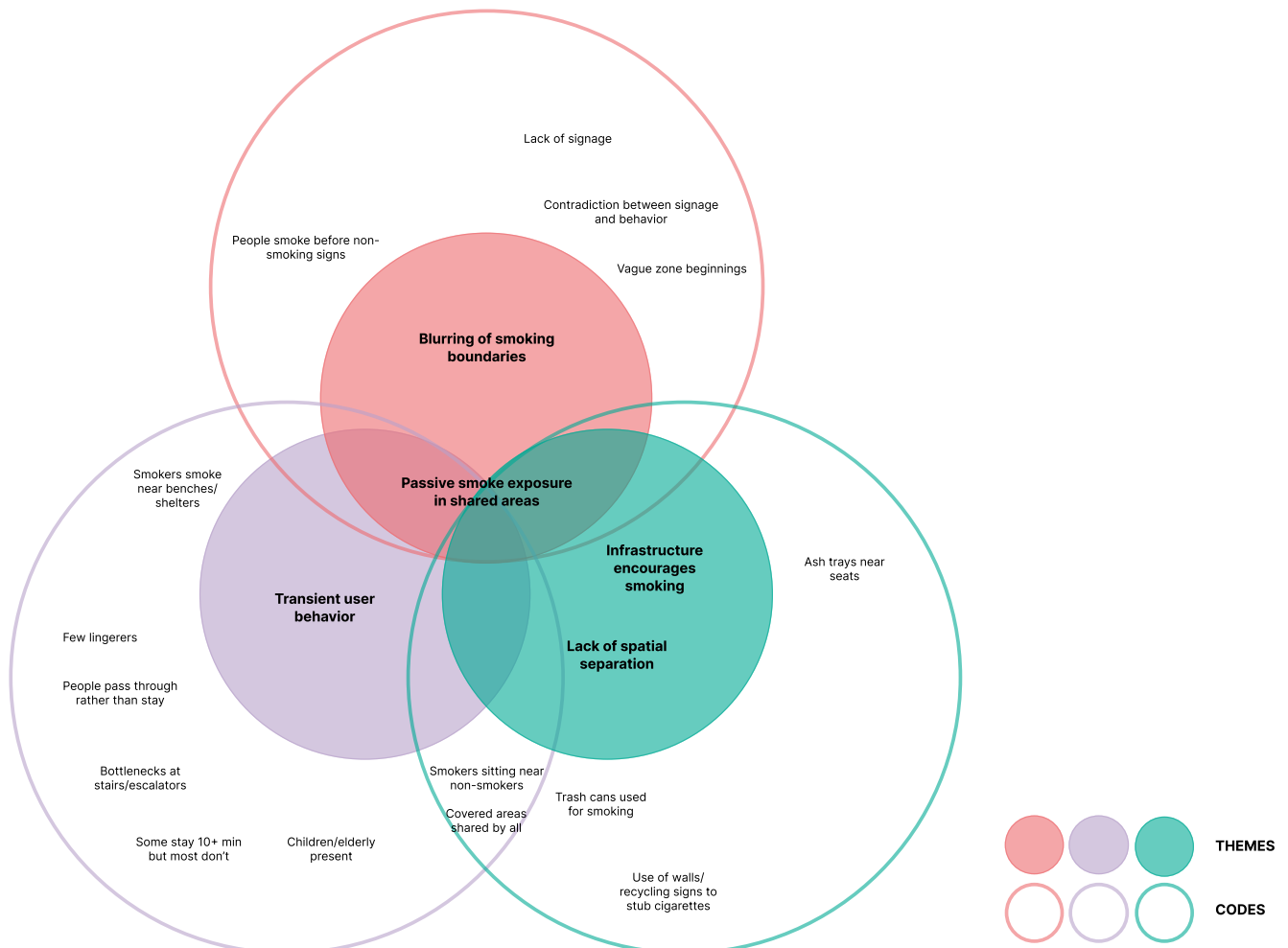


Figure 4

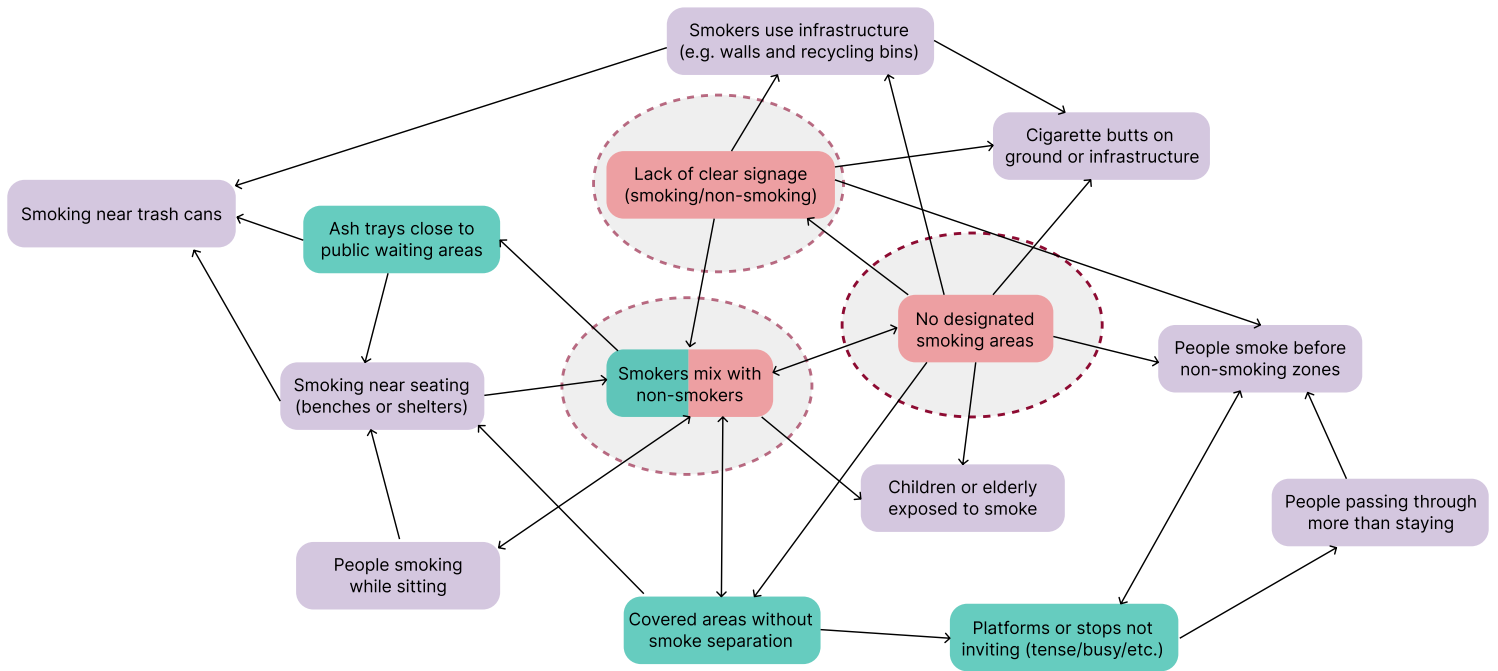


Figure 5

5.3 Observational Codes and Frequency

A total of 14 codes were identified during the field observations. In the Figure 2, you can find all identified codes. The following Figures (Next page Figure 6 - Figure 10) provide examples of identified codes.

Among the most frequent were:

- Smoking near trash cans (9 mentions)
- Lack of clear signage (8 mentions)
- Smoking near seating (7 mentions)
- Children/elderly exposed to smoke (6 mentions)
- Ashtrays too close to public waiting zones (6 mentions)

These patterns reinforce the need for spatial and behavioural design interventions that address not just isolated incidents but recurring environmental triggers present across multiple public transport settings.

5.4 Linking Findings to Design

Each theme was translated into a corresponding performance specification, outlining what the space should enable, prevent or support in order to reduce exposure. Performance specifications are specific actionable criteria that identify the key details that must be included in the design in order for it to be successful. They reveal the key performance indicators. These specifications are rooted in observed user behavior, site specific conditions and known best practices, serving as the foundation for later design development. The following sections will sections will

further describe the performance specifications as well as expected outcomes of the research.

This research aims to deliver practical and evidence-based design strategy that reduces passive smoke exposure in public transport settings. These outcomes include a set of spatial and behavioural design criteria, a visual concept proposal for a design intervention and actionable recommendations for public transport stakeholders. The expected outcomes will support decision-makers in creating clearer, more user-oriented smoke-free environments and contribute to healthier, more inclusive urban spaces. Additionally, the findings aim to serve as a foundation for potential future collaborations, testing or implementation efforts.

5.5 Design Guidelines

Key elements for effective design:

1. The space must clearly communicate where smoking is permitted or prohibited through spatial or visual cues, reducing ambiguity and unintentional rule breaking
2. The space must include clear, visible and contextually relevant signage to indicate smoking policies.
3. The design should position smoking areas away from entrances, waiting zones and pedestrian flows.
4. The design should account for short-stay behaviour by encouraging actions that reduce passive smoke exposure. This includes making spatial cues intuitive, signage visible and healthy norms easy to follow.
5. The space must include well-placed ash trays in designated smoking area to discourage smoking elsewhere.



Figure 6



Figure 7



Figure 8



Figure 9



Figure 10

5.6 Design Criteria

Based on the research findings and thematic analysis, a set of design criteria was developed to translate user behaviour insights and spatial challenges into actionable, intervention-oriented design goals. These criteria aim to guide the development of healthier, more inclusive public transport environments that reduce exposure to passive smoke and better support smokers and non-smokers in shared spaces. The criteria are grounded in recurring behavioural and spatial patterns observed during field visits, such as smoking near trash bins or seating, confusion about smoking boundaries and overlapping use of space between smokers and vulnerable groups. They also on findings drawn from previous policy reviews and user behavior insights.

To make them more usable for design development, the criteria are categorized into four key focus areas:

1. **Communication & wayfinding** – how information and cues guide user behaviour
2. **Spatial Layout and Zoning** – how space is physically arranged to separate functions
3. **Infrastructure & Functional Elements** – how fixed elements like ashtrays or benches shape use
4. **Behavior & User Experience** – how design responds to real-world behavior, movement and need

Each category includes specific principles that address one or more of the issues identified during research. Together, these criteria create a structured foundation for the next phase of concept development.

5.6.1 Communication & Wayfinding

These criteria address how information, signage and visual cues help people understand where and how to behave.

1. **Make smoke-related policies visible and intuitive**
 - a. Signage indicating smoking and non-smoking areas must be clear, visible and contextually placed to reduce confusing or unintentional violations.
2. **Clarify smoking rules through spatial design**
 - a. Spaces should clearly communicate permitted and prohibited smoking zones through layout, markings and physical elements (e.g. ground markings, icons and color cues).
3. **Discourage smoking at ambiguous spatial edges**
 - a. Elements like walls, recycling bins and corners should not become informal smoking zones; use design details and cues to guide behaviour.

5.6.2 Spatial Layout & Zoning

These criteria address how space is organized and how passenger flows and waiting areas are designed.

- 1. Separate smoking areas and non-smoking areas**
 - a. Smoking zones should not overlap with seating, entrances or passenger flows to avoid unintentional exposure. Create visible or spatial boundaries (e.g. planting, distance, materials) to clearly distinguish between smoking-permitted and protected areas.
- 2. Ensure separation even under shared shelters**
 - a. Covered areas must be designed so they do not automatically signal smoking permission; introduce separation with shelter if necessary.
- 3. Prevent passive smoke exposure through layout**
 - a. Ensure that seating and waiting zones are physically placed at a distance from smoking zones, accounting for wind, flow and dwell time.

5.6.3 Infrastructure & Functional Elements

These criteria relate to how the physical infrastructure of a space, e.g. ashtrays, bins, benches, reinforces or undermines smoke-responsible behavior.

- 1. Discourage smoking in inappropriate areas**
 - a. Ashtrays must be located only in clearly designated zones to prevent smoking near shared-use infrastructure like bins or shelters.
- 2. Avoid reinforcing unwanted smoking behavior**
 - a. Infrastructure such as benches or trash cans should not be placed in a way that subtly encourages smoking in undesignated areas.
- 3. Provide appropriate disposal infrastructure**
 - a. Ensure there are ashtrays in all designated smoking areas to reduce littering and reinforce where smoking is accepted.

5.6.4 Behaviour & User Experience

These criteria reflect how users interact with the space, including how intuitive, inclusive and health conscious the experience is.

- 1. Design for vulnerable groups**
 - a. Protect children, elderly and other sensitive populations by guiding smoke away from commonly used waiting areas or providing protected zones.
- 2. Accommodate transient users intuitively**
 - a. Design should support smoke-responsible behaviour for short-term users (e.g. commuters or tourists) through spatial clarity, visible norms and passive guidance.
- 3. Reduce confusion and promote a healthy atmosphere**
 - a. Create legible, calm and inviting environments that naturally encourage respect for smoke-related boundaries and make healthy choice feel effortless.

These design criteria form the link between the research and concept development. Each criterion addresses a specific observed challenge and points toward design actions that are both preventative and supportive. Rather than relying on enforcement and policy alone, these strategies emphasize how space itself can influence behaviour and promote public health, subtly, intuitively and effectively.

5.7 Examples

The following figure (Next page Figure 11) present example illustration generated using artificial intelligence (AI), accompanied by the prompt used to create them. These visuals demonstrate how AI tools can be leveraged to quickly, affordably and effectively support public communication strategies around smoking norms and regulations.

By producing friendly, clearly understandable visuals, such as posters reminding people to avoid smoking in shared public areas, AI-generated illustrations offer a scalable and accessible way to reinforce smoke-free policies. This approach can support transport providers, cities and health organizations in improving user experience and protecting public health through engaging visual communication.

Prompt example:

“A poster showing a young boy at Zürich HB train station, wearing a red beanie, yellow jacket and backpack. He is smiling, waving and standing on the platform next to a train. A large speech bubble says: “Thank you for not smoking near me.” The station sign “Zürich HB” is visible in the background.”



Figure 11

6 Designing Smoke-Responsible Public Spaces

Based on the findings, a cohesive design strategy titled “*Designing Smoke-Responsible Public Spaces: Rethinking Smoking in Public Spaces*” is proposed. It addresses the pain points by rethinking how public transport environments communicate smoke-related policies through physical and visual design.

6.1 Key Elements

1. Embedded communication

- Directional cues like painted arrows or colored floor paths to subtly guide smokers toward designated smoking areas.
- Universal no-smoking and smoking icons are embedded into pavement, shelters or floor texture, ensuring passive rule communication

2. Positive norm reinforcement

- Friendly signage like “Thank you for not smoking here” reinforces the desired behaviour.
- Lighting, floor patterns or other visual elements around entrances reinforces smoke-free zones visually

3. Zones with co-benefits

- Smoking zones are supported with features like seating, greenery and appropriate disposal measures to make the DSA easy to use and an attractive choice.

4. Design for transient use

- Spaces are structured and designed to be immediately understandable for short-stay users.
- Behavioural prompts and intuitive layouts replace complex or non-existent instructions.

5. Ashtray and boundary placement

- Ashtrays are placed only in the DSAs to reduce smoking in shared spaces.
- Material transition and spatial boundaries (e.g. greenery and other objects) help clearly separate smoking and non-smoking zones.

The overarching goal is to reduce exposure to passive smoke exposure in public transport settings by design rather than enforcement. The strategy encourages smoke-free behaviour through environmental cues and norm reinforcement. Protecting the public, especially vulnerable populations, while respecting all users of the space. The following figures (Figures 12-15) provide examples on how the intervention could be implemented into the public transport spaces.



Figure 12



Figure 13



Figure 14

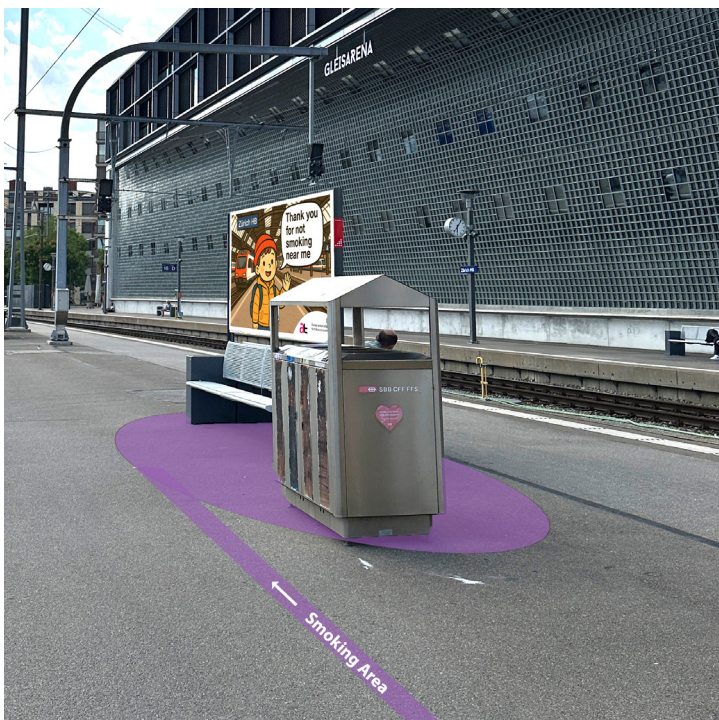


Figure 15

7 Outlook

This research aims to deliver a practical and evidence-based design strategy to reduce passive smoke exposure in public transport settings. The outcomes include:

- A set of spatial and behavioural design criteria
- A visual concept proposal for a design intervention
- Actionable recommendations for public transport stakeholders

These outcomes are intended to support decision-makers in creating clearer, more user-oriented smoke-free environments and contribute to healthier, more inclusive urban spaces. They also serve as a foundation for potential future collaborations, testing or implementation efforts.

To ensure the longevity and scalability of this work, the following implementation plan and “handover” guidance is proposed:

1. Documentation and Accessibility

All findings, design criteria, visual concepts and recommendations have been documented in this report. These materials can be used as a toolkit by public transport companies, urban designers, policymakers or researchers seeking to address similar challenges.

2. Handover for Further Development

The project can be taken over by:

- Design or Public Health Teams within transit companies like SBB, who could use the design criteria to guide renovations or new projects.
- Urban planning researchers looking to test the effectiveness of the design concepts in real-life pilot environments.
- Communication or policy units, who may adapt the visual examples for awareness campaigns.

Clear next steps for implementation include stakeholder workshops, collaboration with architects and behavioural researchers and small-scale trials at public transport stations.

3. Future Potential (If More Time Were Available)

If given more time, the project could be extended through:

- User testing and prototyping of the visual concept in a live public transport setting to gather feedback and measure behavioral impact.
- Co-design workshops with commuters, transport staff and vulnerable groups to refine interventions.
- Quantitative data collection (e.g. air quality monitoring)

before and after design changes to evaluate impact.

- Expanded communication material, such as multilingual signage or educational visuals, tailored to different audiences.

Further resources

This report is accompanied by a separate design manual that translates the research findings into practical, real-world applications. The manual offers a clear, accessible guide for public transport authorities, urban designers and other stakeholders on how to implement the proposed design strategies and principles in public transport settings. By condensing the key insights into actionable recommendations and illustrated examples, the manual serves as a bridge between academic research and practical implementation. It is intended to support the creation of smoke-free environments that are both user-friendly and aligned with public health goals.

The full design manual is available at: at-schweiz.ch.



8

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9 Glossary

DSA = Designated Smoking Area

SHS = Second-hand Smoke

WHO = World Health Organization

WHO FCTC = World Health Organization Framework Convention on Tobacco Control

OTS = Outdoor Tobacco Smoke

PM2.5 = Particulate Matter with a diameter of less than 2.5 micrometers; fine inhalable particles that pose significant health risks when present in air pollution

PM10 = Particulate Matter with a diameter of less than 10 micrometers; inhalable particles that can enter the respiratory system and affect health