

RICOCHET

Cleanliness in the city of nice

A DESIGN CASE STUDY

April 2023

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A partnership project developed at Besign, The Sustainable Design School in partnership with Métropole de Nice.

CIGARETTE BUTTS are by far the most common waste found on the ground, **OVER 1 MILLION A DAY** regardless of the type of public spaces studied.

These statistics were provided by the City of Nice Sanitation department.

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I- INITIATIVE OVERVIEW

TITLE

Ricochet, cleanliness in the city of Nice, France - 2020-2021

PARTNER CHALLENGE

“ How to encourage users to respect the cleanliness of the city of Nice ? ”

DESIGN TEAM



Besign, The Sustainable Design School Students:

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Led by Laetitia Wolff, professor/coach and design impact + strategy consultant

PARTNERS



Laurent Calatayud, Director of the Sanitation department, City of Nice

Mathieu Vierne, Head of Services (human and financial resources, and prevention) at the Sanitation department, City of Nice



Pierre-Paul Léonelli, Deputy Mayor, elected official at the City of Nice and at the Région Sud

Christophe Junac, Director of Innovation and Smart City, Métropole de Nice

Christian Gasquez, Head of Services (development of new usages)

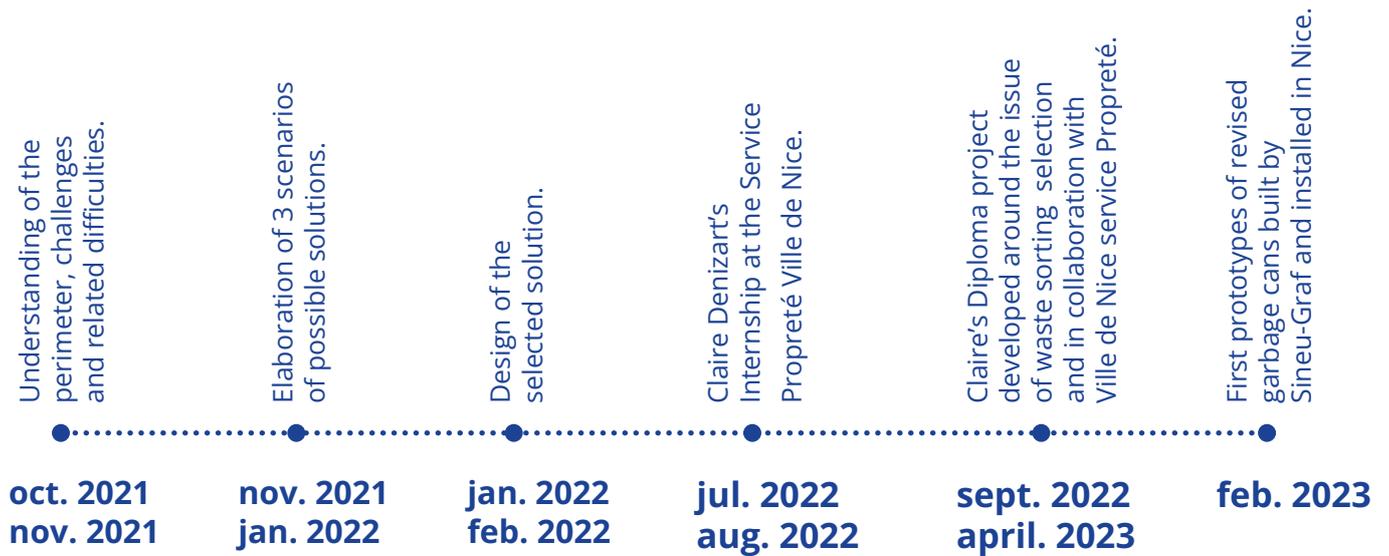


Claudia Montero et Philippe Courpron



Isabelle Demangeon

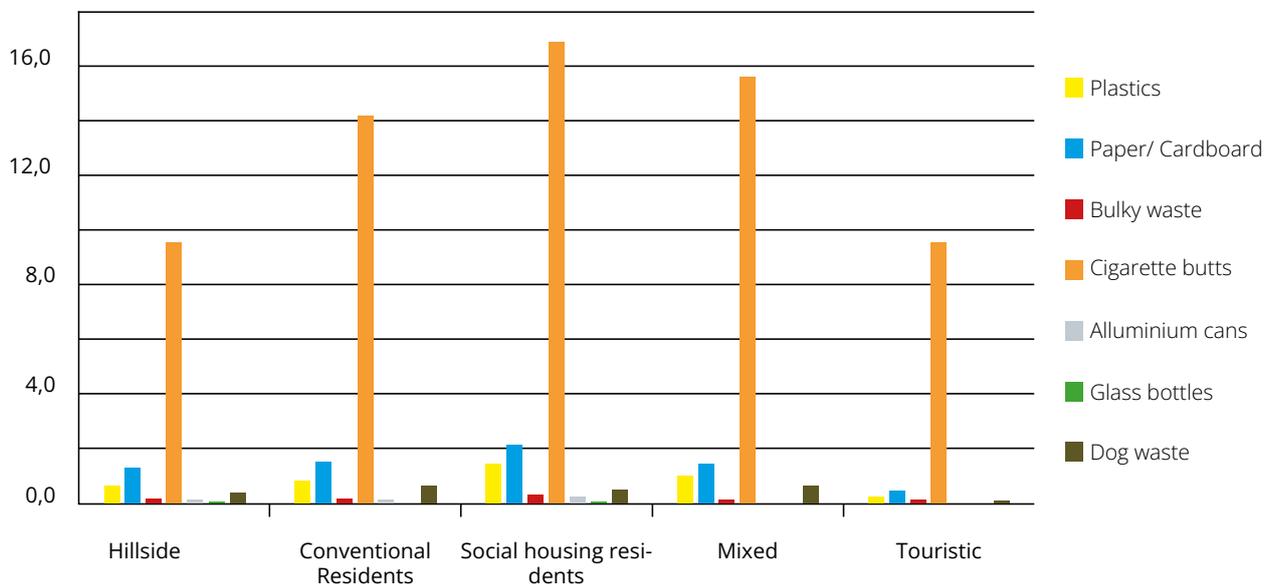
TIMELINE



STATISTICS

Distribution of waste densities (nb/100m2)

Source: Nice Cleaning Department (26/11/21)



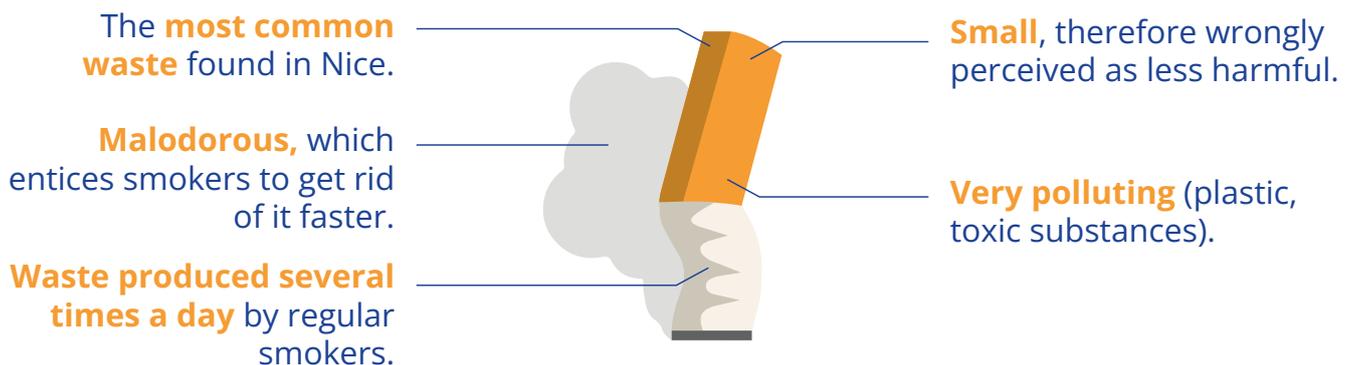
More info about the [sanitary service](#) of the city of Nice

Tag words: #propreté #sanitation #behavioral design #sustainable innovation #cities #social innovation #public space #human-centered design #civic design #incivilities #cities

II- DESIGN CHALLENGE NEED ASSESSMENT

Statistics provided by the City of Nice Sanitation department show that **cigarette butts** are by far the most common waste found on the ground, **over 1 million a day** regardless of the type of public spaces studied (residential hills above Nice, middle-class neighborhoods, social housing projects, or tourist areas, etc.).

CIGARETTE BUTTS HAVE SEVERAL COMPLEX CHARACTERISTICS



REVISED NEEDS STATEMENT

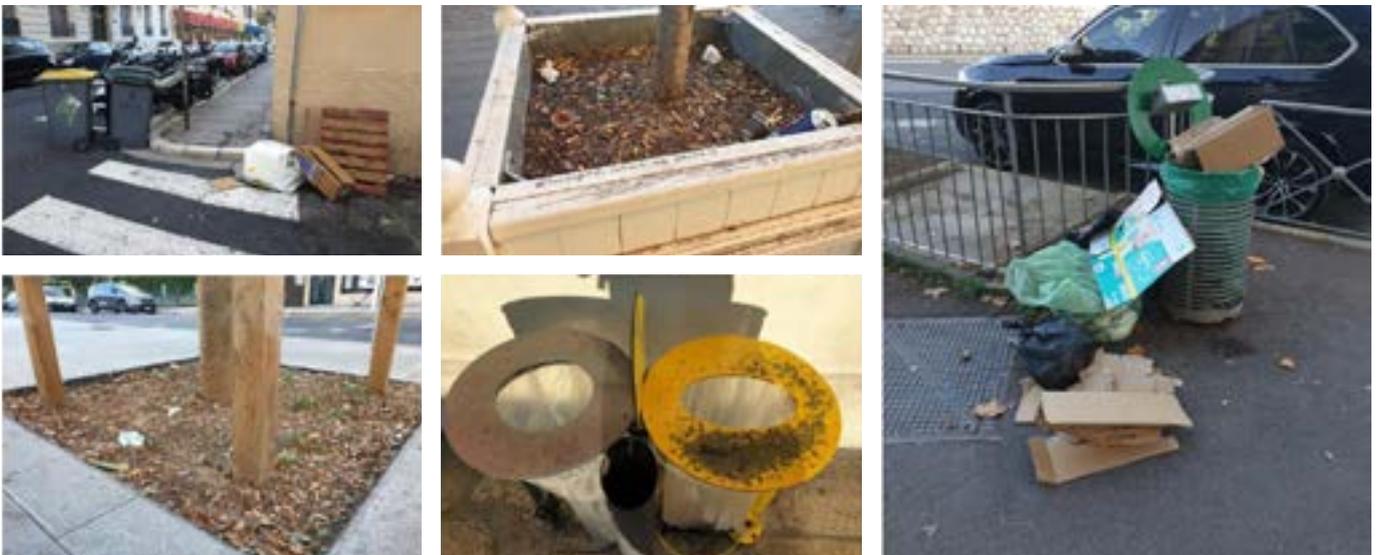
“ **How might we encourage smokers to respect implicit rules of cleanliness of the city of Nice ?** ”

III- PROCESS AND METHODOLOGY

The research method and community engagement strategy

started with the following tasks, i.e. a mix of secondary research (data, studies, behavioral design, etc) as well as primary research (mostly immersion in the field, photo reportage, observation and shadowing of the sanitation workers in situ):

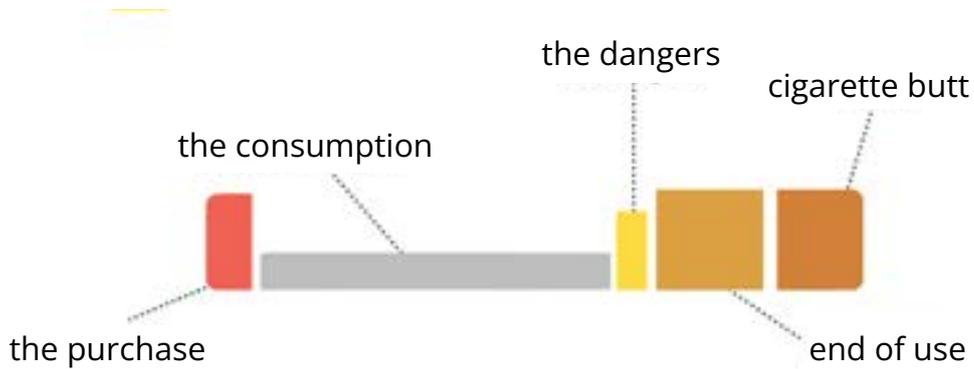
- We hierarchized the impact of different kinds of street wastes, and the various waste management tactics used to this day by the city.



- We consulted quantitative stats and evidence-based data gathered over the years by the Sanitation department.
- We attended immersion sessions with the Sanitation dept. professional teams, shadowing workers in trucks, by foot, including site visits of waste facilities, and training sessions held in primary school to teach about waste.



- We studied “Smokers and the management of their cigarette butts in outdoor spaces,” a key consumers [report by Opinion Way](#) published in 2019. These behavioral patterns are typically determined by three main factors: addiction, place, and context.

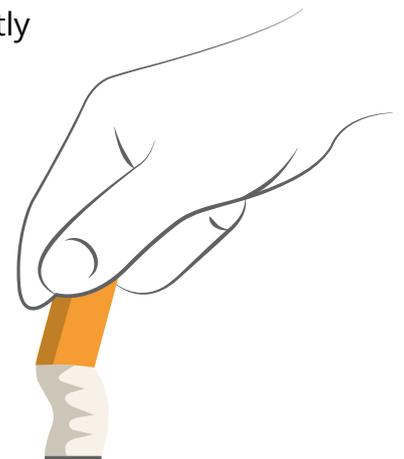


- We had qualitative sessions of in-situ observations and interviews of smokers and nonsmokers.



- We studied usage of existing ashtray and garbage cans currently available on the streets of Nice.

- We researched behavioral design science and the study of smokers' behavior.



- Mind-mapping tobacco consumption



INSIGHTS FROM BEHAVIOURAL STUDY

Our **target audience** included both smokers and non-smokers who were considered, observed, studied, and interviewed.

Many factors influence our daily behavior. It's a very complex topic that falls under the **discipline of behavioral and cognitive sciences**.

Behavioral design is an approach that aims to **understand, anticipate, even modify the behavior and habits of users**. In this project, it is what we sought to do with smokers: **encourage them to stop throwing away their cigarette butts on the ground**.

Behaviour is influenced by...

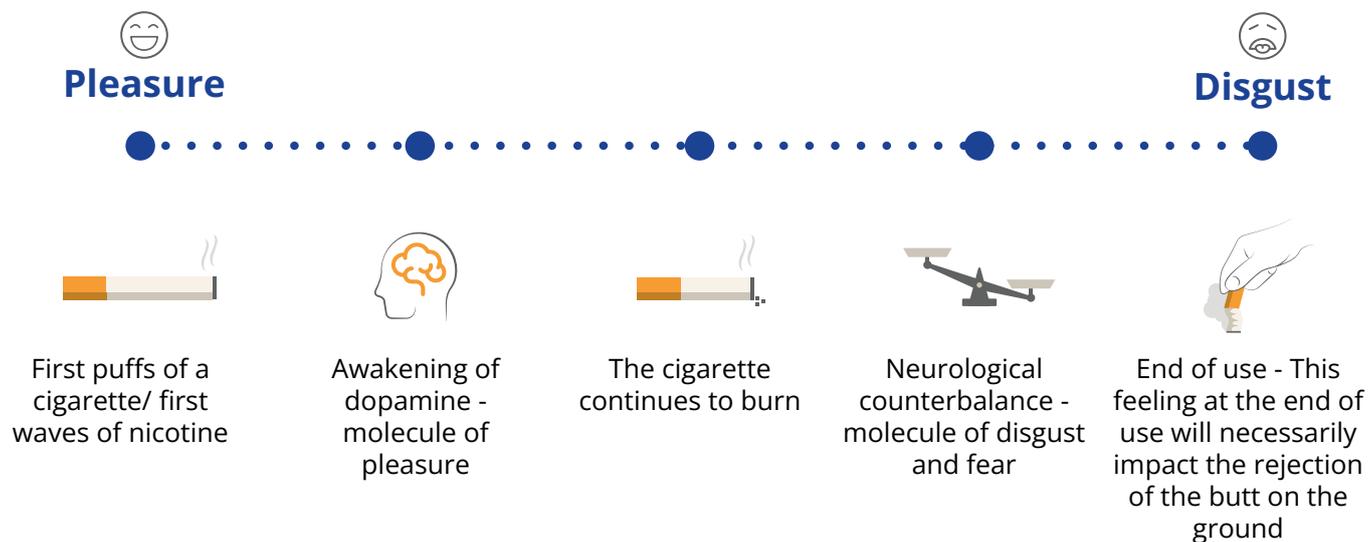
01
Addiction

02
Place

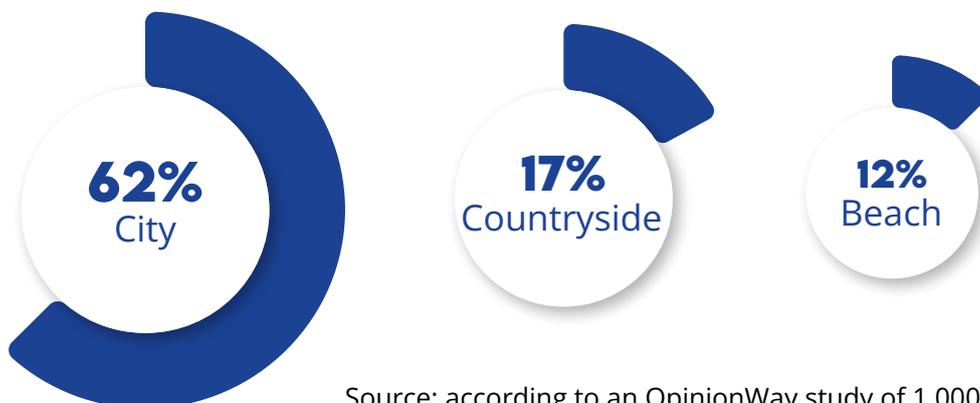
03
Context

1 ADDICTION

The n°1 factor influencing smokers' behavior



2 PLACE



Source: according to an OpinionWay study of 1,000 smokers. (2019)

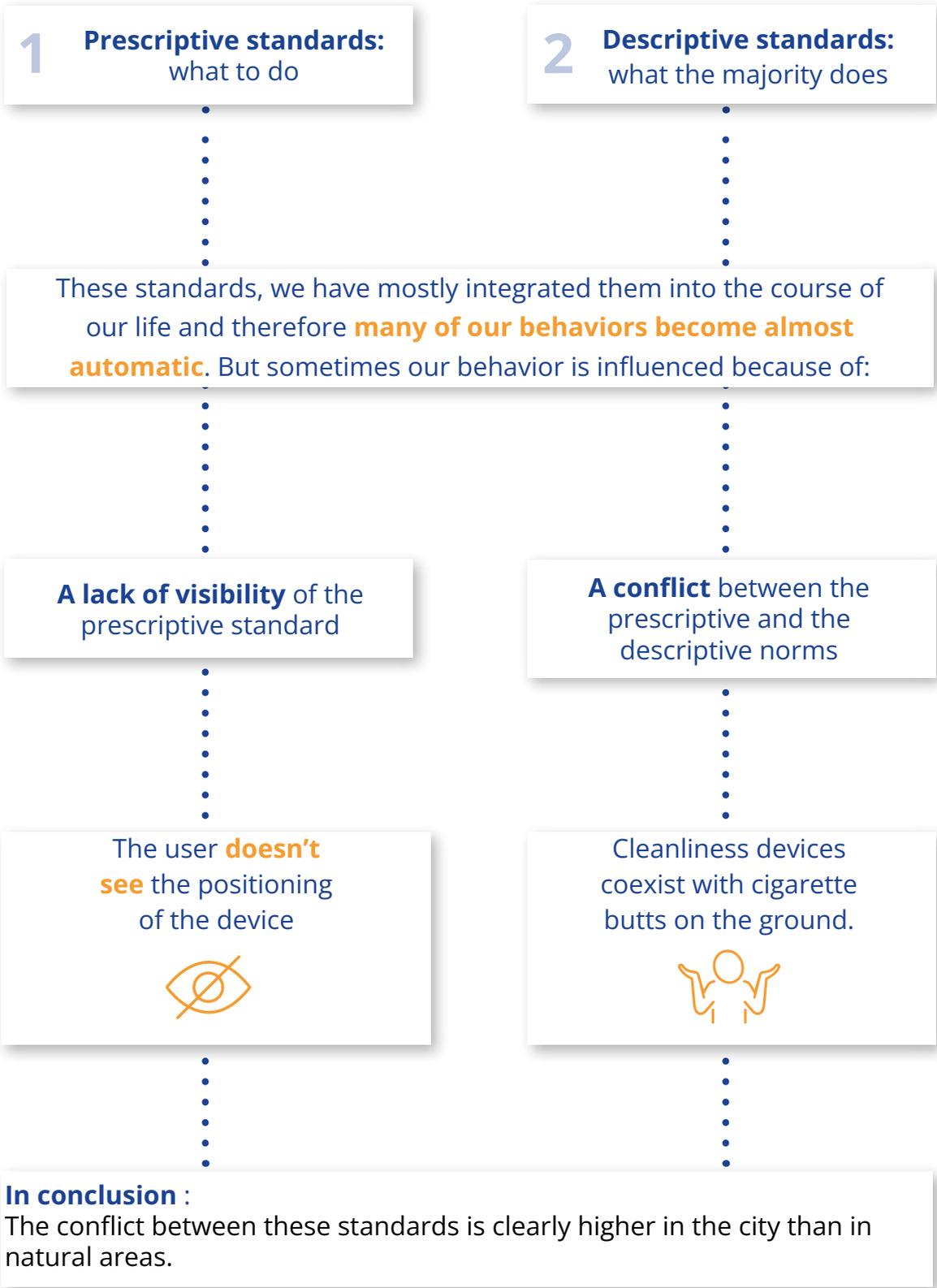
Unlike more natural areas, **the city is the environment which is the least spared by cigarette butts with 62% of smokers** who claim to throw they butt often or even systematically.

Two major factors account for this discrepancy:

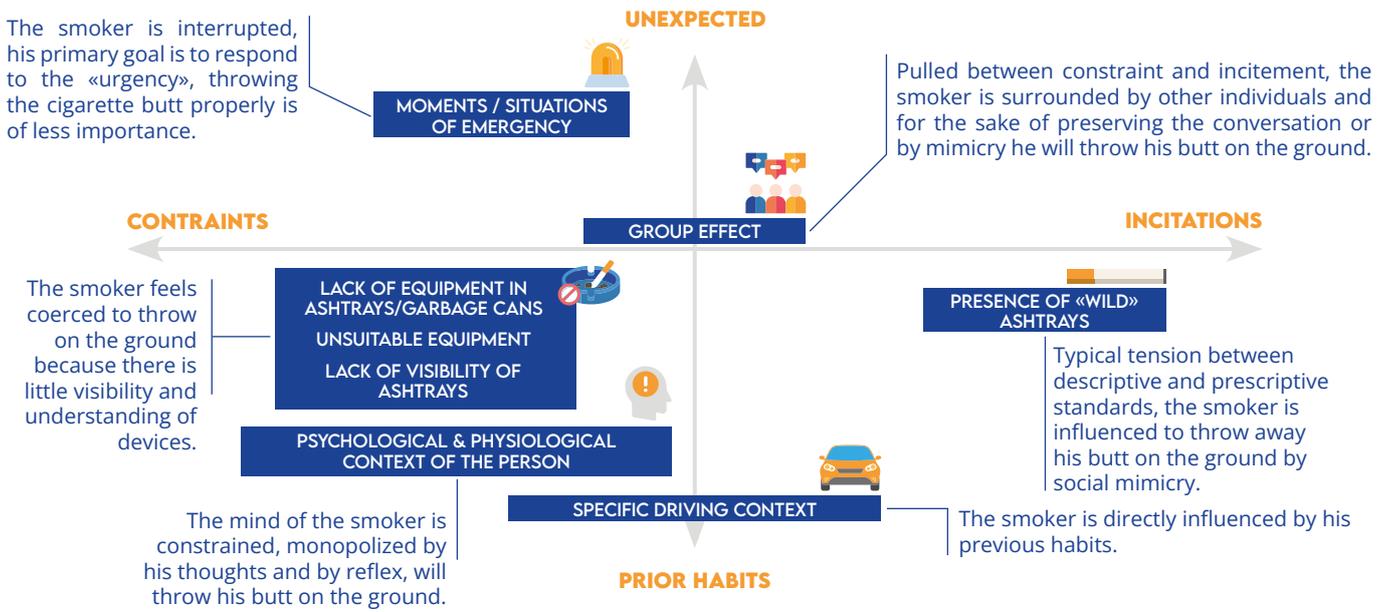
● The conflict between the norms conveyed by the city. 

● The idea that the environmental impact will be moderate in town since street cleaning is carried out daily. 

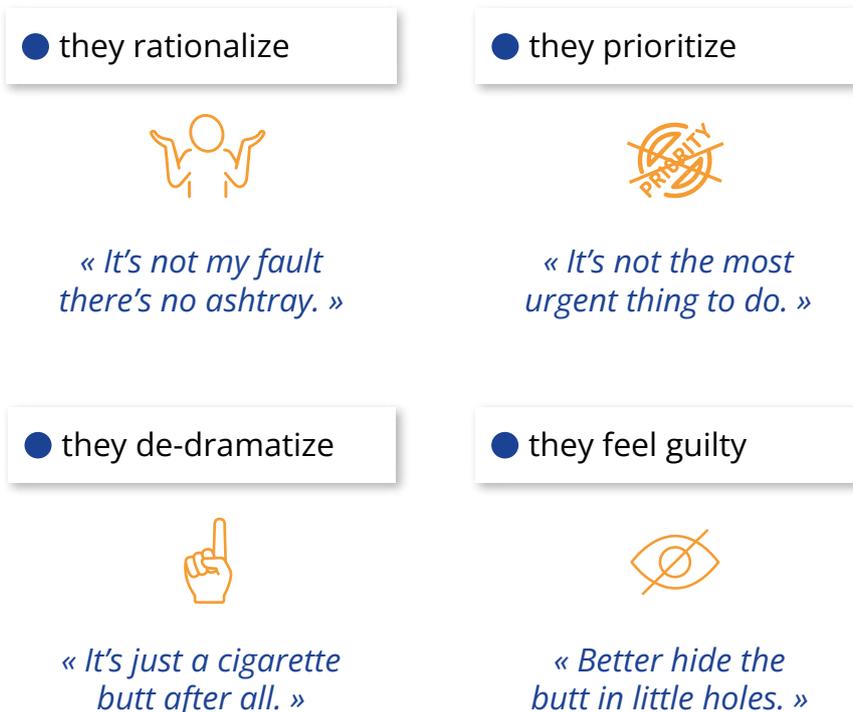
Places convey behavioral norms that fall into two categories:



The **context** in which the smoker consumes his cigarette influences his behavior. We can classify recurring behaviors in **6 main contexts and according to 4 major variables**:



The main postures of smokers during rejection



IN SUMMARY



All **this process is intricately linked and complex**. The smoker can feel responsible of the place where he is and of his cigarette butt, however throw it on the floor. He can understand where the sanitation devices are located but in seeing «wild ashtrays» nearby they might influence his judgement by mimicry.

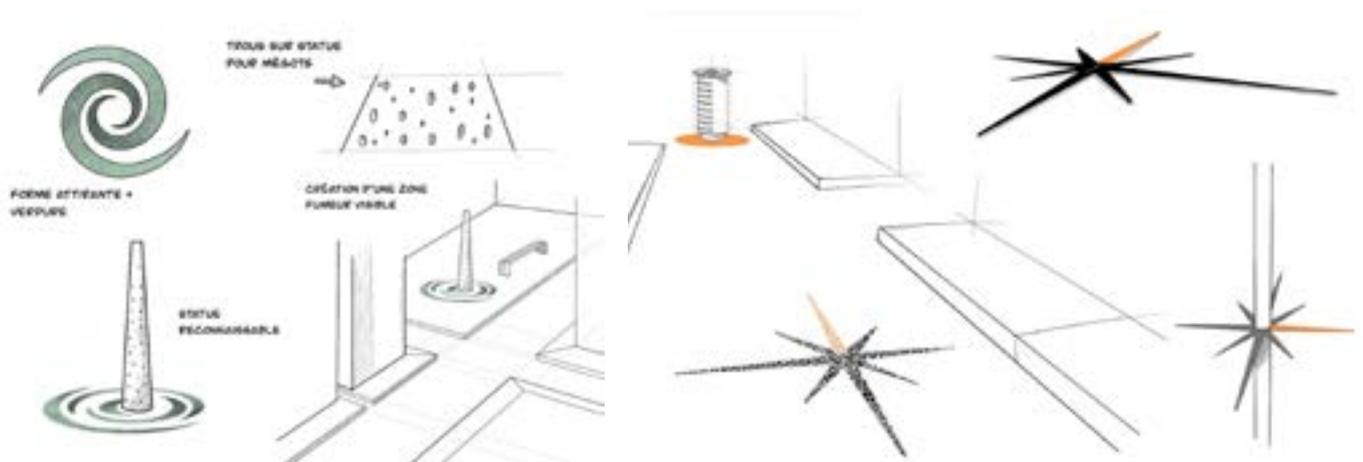
GOALS

Students decided to orient their work in two directions:

- **Devices** that allow the gathering of cigarette butts, and,

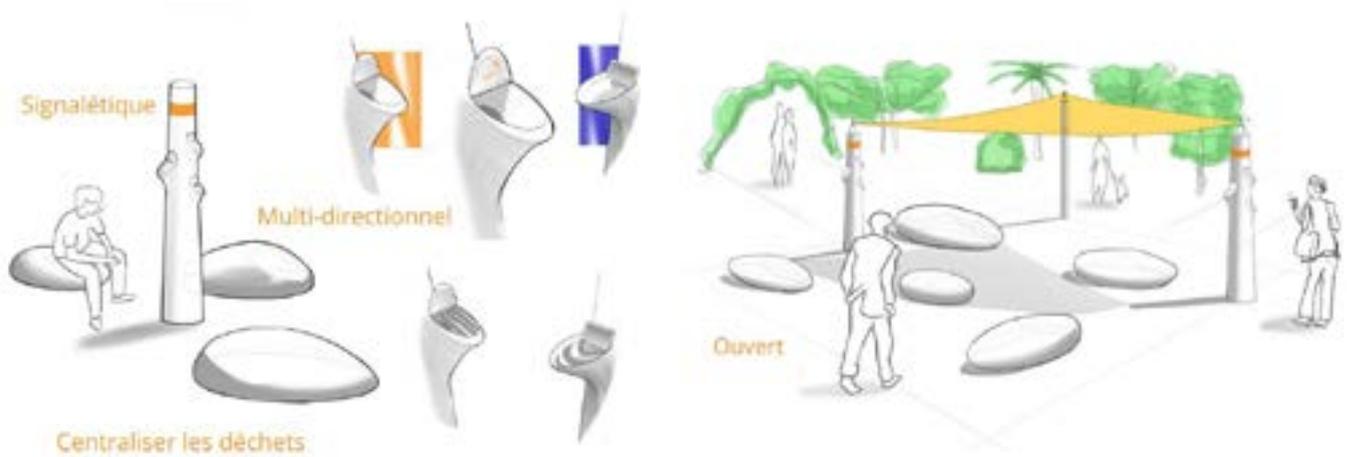


- ways in which to improve the **information** provided to smokers about these devices.

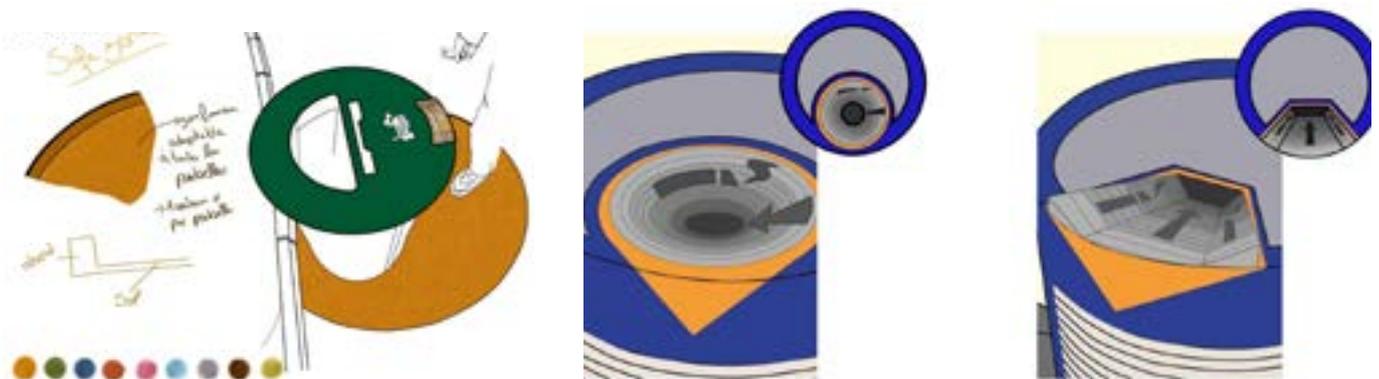


The existing ashtray-cum-garbage proved not to be visible enough and often misused. Students focus on improving solutions by:

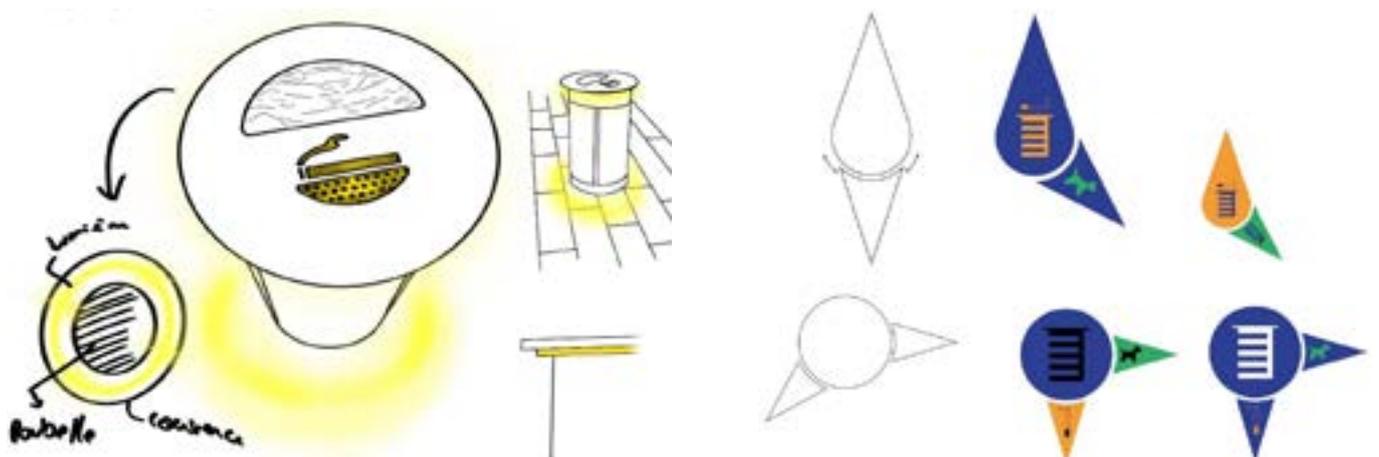
- designing a new device system and dedicated zones, more inviting to smokers



- redesigning the top of the existing ashtray cum garbage can



- informing smokers of the closest ashtray options available on the streets



IV- DELIVERABLES / SOLUTIONS

The design output used a diverse array of complementary design media, essentially physical (street furniture) and spatial (signage, public space communications).

The solutions proposed were purposely anchored in deep values and cultural references:



Vernacular

Playful



Evolutive

Inclusive



Pedagogical

IDENTITY COLOURS



Dominant colours



Klein blue : cleanliness identity

- Colour present in the landscapes of Nice
- Yves Klein the artist was born in Nice known for his blue
- Colour easily noticed by users according to a study by Pascal Moliner, sociologist and psychologist
- Colour of the Nice Côte d'Azur Métropole logo



Orange : cigarette butt identity

- Colour present in the Mediterranean landscapes
- Colour associated with cigarette butts



Complimentary colours : more visibility

REDESIGNING THE EXISTING

NEW TOP OF THE TRASH CAN

Inspired by the colours of Nice, this concept aims to **highlight the existing bins** and **encourage smokers to use the ashtrays**. By working on this sloping grid, we sought to **facilitate use** and make the act of rejecting cigarettes easier. The hole being in the extension of the scraper, it allows a single gesture of use.

Option n°1



Slanted grill to **maximise butt collection** and **atypical design** to attract smokers

Uncluttered signage to improve understanding

Make the city's ashtrays visible by using colour

Minimise unused space by reducing the outline



Option n°2



Keep the current half-lid with its standardised bin hole, and implement the ashtray on the remaining half surface to **optimise the surface area** of the top of the bin currently used by smokers for ashing.

ASHTRAY-GARBAGE CAN

Technical descriptions

The edges of the existing garbage cover and more generally the unused surfaces serve as scraping area to smokers, which thus damage them faster. To remediate this situation, it was necessary to reduce the overall size of surfaces.

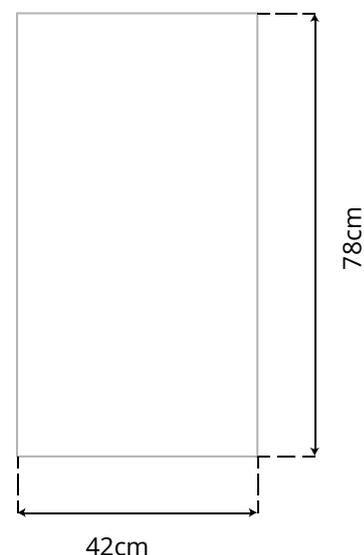
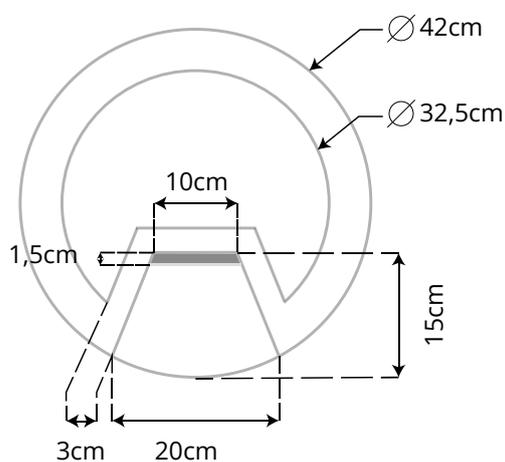
Secondly, smokers don't understand the object; instead of using the orifice conceived to throw cigarettes (in the actual shape of a cigarette), they think the holes in the grill (of identical diameter to a cigarette), are meant to throw butts, when they're meant to function as a scraping area. Butts are therefore abandoned on the grill, instead of being captured in a close container, and often the wind blows them away on the sidewalk.

The solution proposes to better define zones of extinction for the cigarettes to facilitate the user's global understanding of the device; it also integrates a slightly slanted grill that securely captures butts. The diameter of the garbage cover was reduced to better fit the periphery of the can cylinder. The garbage hole was also increased to receive more voluminous waste.

The ashtray space was reduced to encourage smokers to crush their cigarettes on the slanted grid, modified as an inclined funnel covered with ridges. The ridges promote the extinction of the cigarette butt. The slope automatically brings the cigarette butt into the hole. The ashtray hole in the center of the bin is large enough to throw a cigarette butt in, but relatively small to prevent other waste from being thrown in.

The signage arrow indicates in a simple and clear way the direction which must be given to the cigarette butt. All of these visual, usage-based, and material elements help facilitate the understanding of the device and the act of throwing a cigarette butt.

This concept was deployed with two different forms of grids. A grid in the shape of a cone (option n°2) and another made up of three grids of different inclinations (option n°1). These shapes optimize the collection of cigarette butts left on the grid.

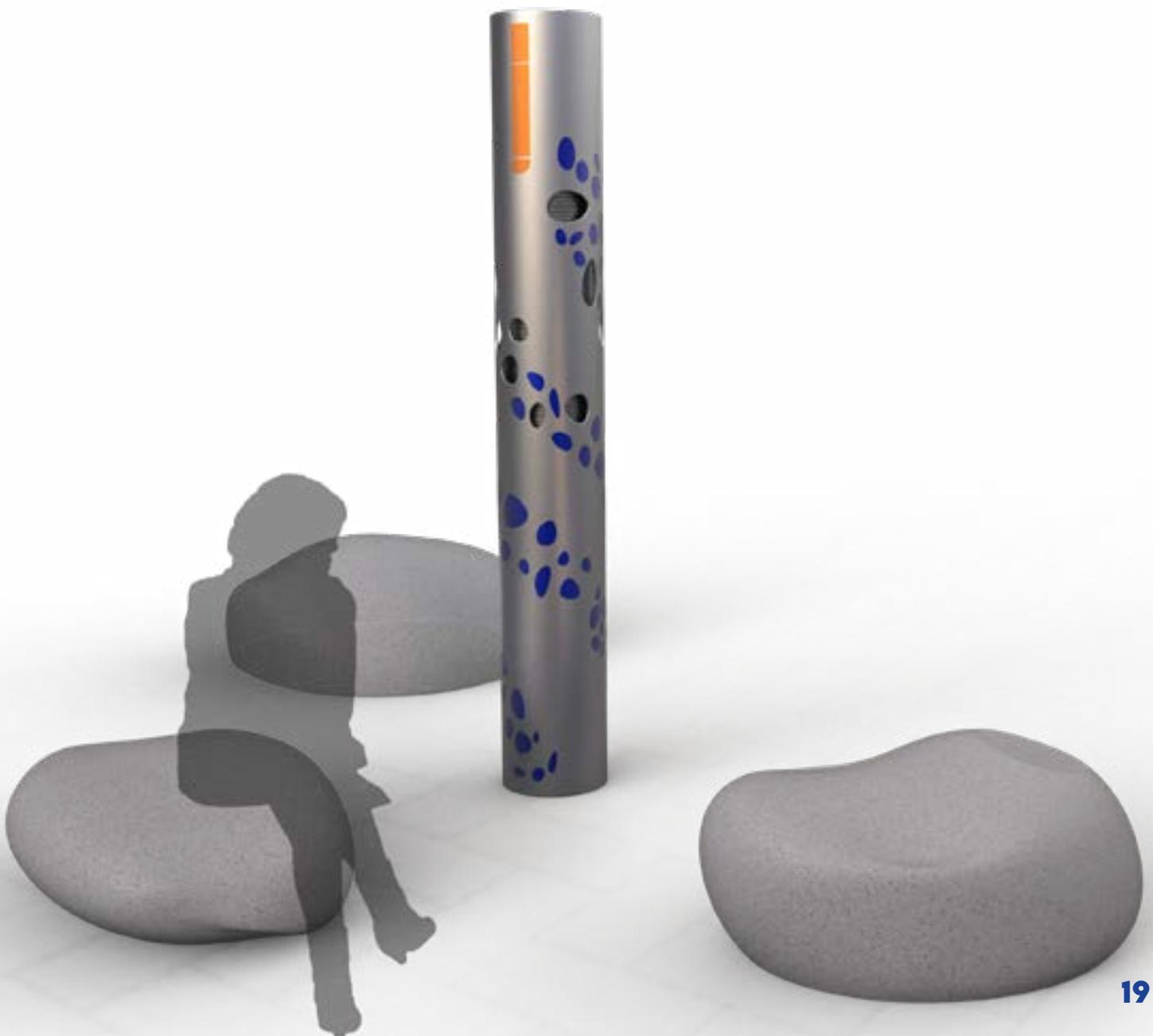


FACILITIES THAT GATHER

A TOTEM

Inspired by the organic shapes of Nice, this concept aims to **bring smokers together in one space** in the city. The totem pole, independent of the seats, can be placed anywhere.

- **Creating a zone** for interacting
- **Gathering smokers** to collect cigarette butts
- Tall and original visual to **maximise visibility**
- **Clear signage** to improve understanding

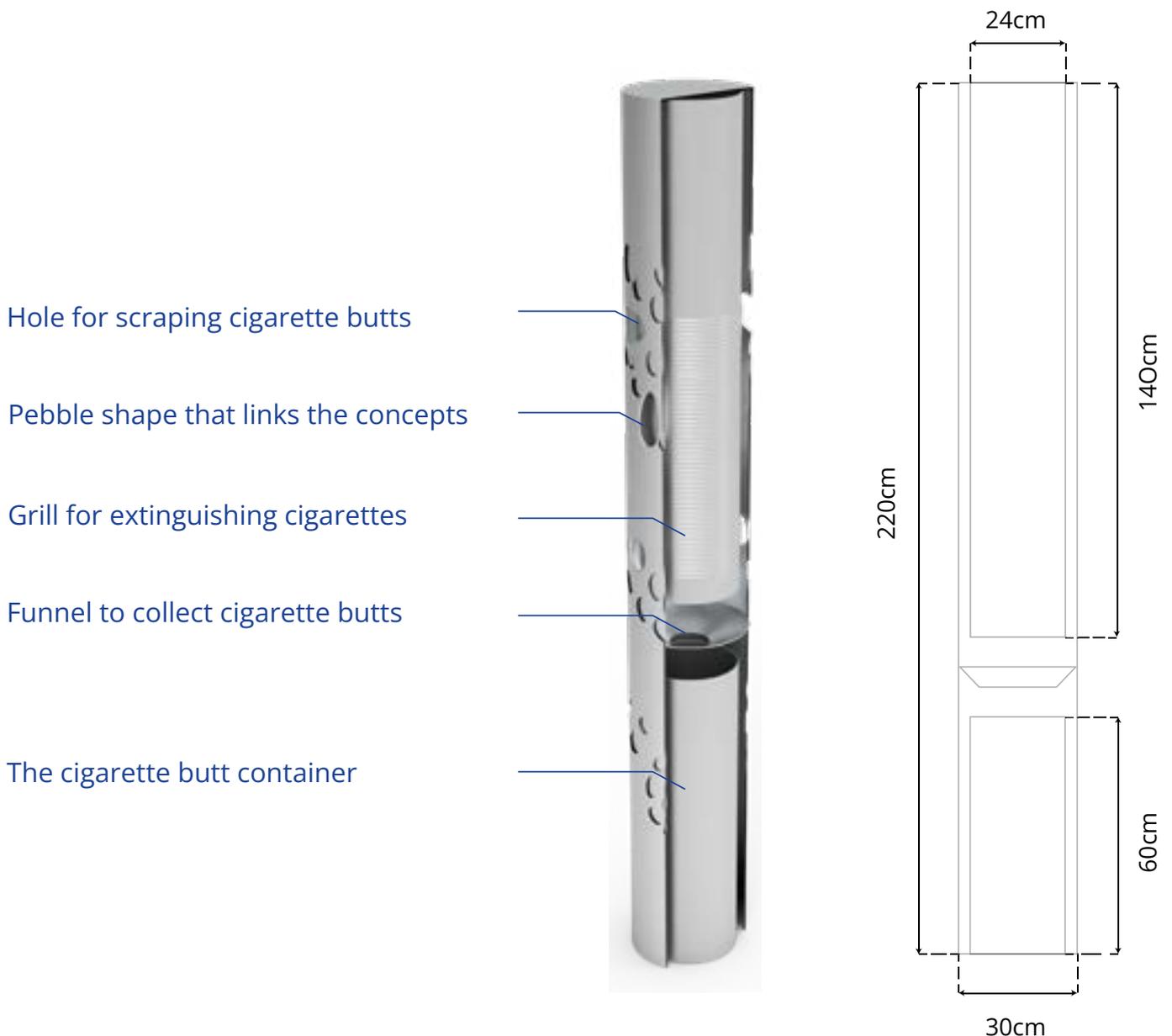


TOTEM

Technical descriptions

The second proposal aims to limit the dispersal of cigarette butts by bringing smokers together in the same place: the "smoking area." The goal is to induce positive behavior by mimicry in smokers: if the smoking area is clean and without cigarette butts on the ground, then future smokers will be encouraged to properly dispose of their cigarette butts. The area revolves around a large ashtray (220 cm high, 24-30 cm wide) in the form of a totem. It is thus visible to all.

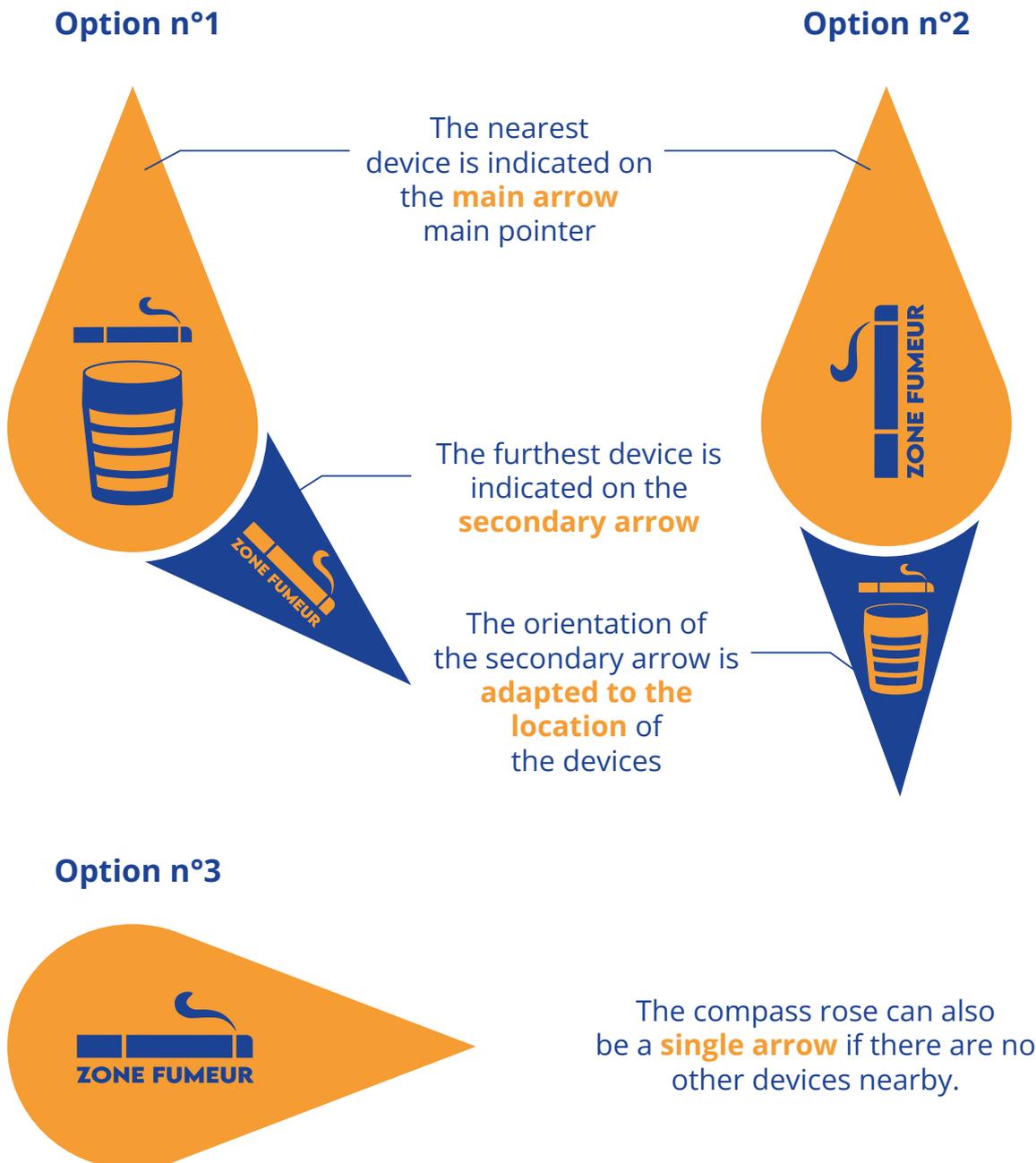
The totem ashtray offers numerous receptacles for extinguishing cigarettes (grid), scraping butts (holes) and collecting them (funnel, container). The totem is surrounded by seats in the form of pebbles, available in several sizes and promoting the gathering of users in the smoking area, open, inclusive, and welcoming. Finally, signage on and around the totem would make the smoking area all the more visible and easier to use.



SIGNAGE

A revisited compass rose

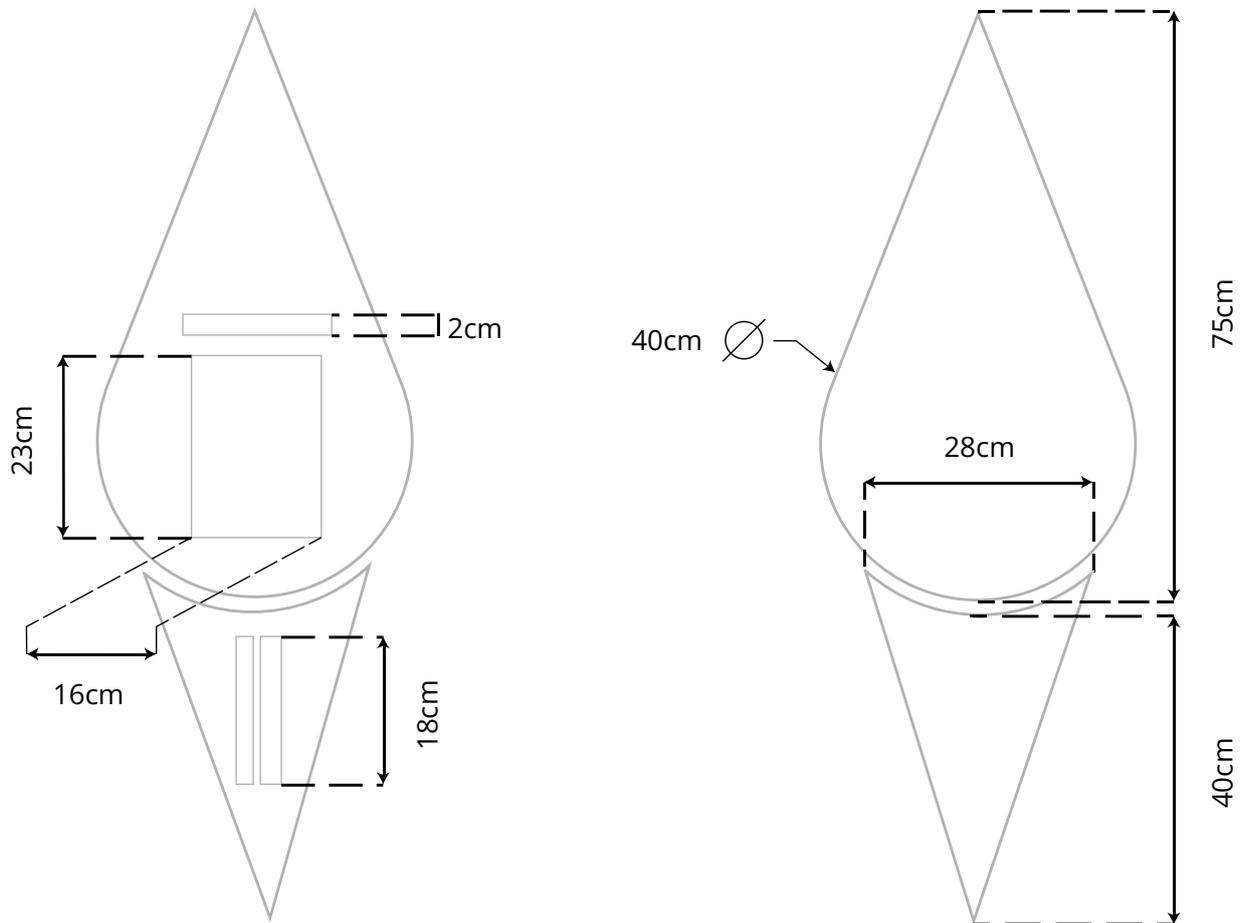
Inspired by the compass rose, this concept aims to **guide users through the city**. The signage **indicates the location** of litter bins with an ashtray and also indicates the presence of smoking areas.



The signage adapts to the orientation of nearby facilities in the city. The **choice of bright colours** allows it to attract the eye from a considerable distance, and its shape gives it good modularity.

COMPASS ROSE SIGNAGE

Technical descriptions



An iconic symbol



The symbol of this cigarette can be found **on all concepts** for a strong and recognizable identity.



The signage will probably be implemented in the city in the form of stickers on the ground.

COMMUNICATION ON THE GROUND

A communication in "ricochet"

Inspired by the principle of ricochet, this concept is a **continuation of the compass rose**, it aims to **guide users from message to message** to the totem.

To encourage the passer-by to answer this question, we imagined a **path of pebbles** represented on the ground, ranging from 20cm to 80cm in width and from 10 to 40cm in length.

The ground makes sense because it is where the cigarette butts are discarded, it also avoids the visual saturation of other communication already present at sight level.

We find on these pebbles **strong messages on which the user's step will ricochet** through several distinct paths.



A path to discovery

This communication on the ground will intrigue the passer-by and **invite them to move towards the totem pole**.



A path of reflection

Ricocheting from message to message, the smoker is led to anticipate and reflect on his future behaviour.



A path to exchange

The arrival of the path is a place of potential encounters. It allows the smoker to spread their experience around them and to **become a co-creator of this new behaviour**.



A path to harmonisation

Our pebble path will **work in conjunction with the compass rose**. The pebbles will start by informing and guiding the user to the device, arousing his curiosity and finally attracting him to the totem pole, thus enhancing its value.

These paths allow for **personal accomplishment** in a gesture that is more respectful of the environment and of other users of the city. The smoker is then proud of his or her **new habit** and will remember the gesture to be carried out, as when one carries out a first series of ricochets and retains the way of carrying it out.

SIGNAGE CAMPAIGN

Technical descriptions

The signage system on the ground aimed to guide users towards the totem and the dedicated smoking area, supported by short and striking messages, in the form of pebbles drawn on the ground. These would respond to each other by echoing the principle of ricochet. This path makes it possible to intrigue, educate and empower smokers in the management of their waste through organic and iconic forms (the pebbles), symbolizing the waterfront and the Promenade, and thus conveying a strong vernacular identity.

Messages contained in these "bubbles" in crescendo: "your cigarette butt", "your gesture", "your waste", "your damage", "your duty", "your coast", "your city", "your responsibility."

TON MEGOT

TON GESTE

TON DÉCHET

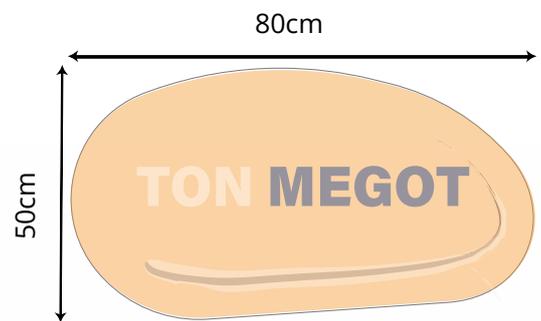
TON DÉGAT

TON DEVOIR

TON LITTORAL

TA VILLE

TA RESPONSABILITÉ



V- OUTCOME / IMPACT

PRIMARY CATEGORIES OF IMPACT, IN ORDER OF IMPORTANCE



SDG 3 Good Health and well-being: mentions that the World Health Organization's Framework Convention on Tobacco Control (FCTC) *"helps countries strengthen their laws or adopt new tobacco control legislation."*



SDG 11 Sustainable Cities and Communities: By 2030, target 11.6 aims to *"reduce the environmental impact of cities, including by paying special attention to air quality and municipal and other waste management."* Also, by 2030, the target 11.7 encourages city governments to *"provide universal access to safe, inclusive and accessible, green and public spaces."*



SDG 12 Responsible Consumption and production: By 2020, i.e. 3 years ago, the target 12.4 recommended to *"achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment."*



SDG14 Life below water: 17 Million metric tons of plastic entered the ocean in 2021, and are projected to double or triple by 2040, and cigarette butts are included in this plastic content. By 2025, the goal is to prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities. An indicator used is the index of plastic debris density in the ocean. **Despite a global consciousness of the problem of cigarette butt pollution, and its consideration in the highest instances, as a health hazard and taken along other forms of air/soil/water pollution, every city of the world continues to fight against the plague of cigarette butts on the ground (SDG15, Life on Land is also concerned).** Nice is unfortunately no exception to the rule.

METHODS OF EVALUATION USED IN THIS PROJECT

Since 2021, the city of Nice's Sanitation department has attempted to tackle their problem of cigarette butt pollution through a **technical and quantitative approach**, with the characterization of waste on the ground (using national standards such as the Objective Indicators of Cleanliness), including regular counts, analysis of density and the waste's geo-localization. Encouraged by European standards of organizations they belong to, such as the Association of Cities for the Urban Cleanliness ([AVPU](#)), they've adopted a proactive and almost mathematical observation of the phenomenon.

In contrast, our approach attempted to propose a more **qualitative, human-centered approach**, which started from the observation of the social behavior of the smoker, the problem of addiction, our relation to public space, rather than focus on the final product of the cigarette waste itself.

NB: In an attempt to evaluate our project impact, we have decided here to reuse some of the qualitative evaluation criteria proposed in *Design for Social Innovation, Case Studies from Around the World*, a book edited by Mariana Amatullo, Bryan Boyer, Jennifer May, Andrew Shea (Routledge, 2022) who are respected colleagues of the professor and case study writer Laetitia Wolff.



QUALITATIVE EVALUATION

We gathered feedback from various stakeholders via informal debrief interviews, including technical municipal services that manage the problem of cigarette butt waste, as well as the city's innovation department. We also reached out to elected officials who were instrumental in making this partnership project happen.

In January and February 2023, twice we interviewed Laurent Calatayud, Directeur de la Propreté Ville de Nice chez Métropole Nice Côte d'Azur, to touch base with him on the development and implementation of the project. We also spoke to Christophe Junac, Directeur de l'Innovation et de la Ville Intelligente chez Métropole Nice Côte d'Azur, who financed the partnership, as well as Christian Gasquez, Head of new usages, also at the Département Innovation et Smart City. Métropole Nice Côte d'Azur.

Criteria 1: Adoption by the organization and/or other organizations

Design prototyping and implementation, a systemic change

The city of Nice had invited Sineu-Graf, the Alsace-based industrial manufacturer of trash can solutions and urban furniture, currently under contract with the Métropole de Nice, to the final oral presentation by students back in February 2022. They attended on their own money and appreciated the solution so much they immediately offered to build the prototypes. Since then, they've been asked by the City of Nice to create 2 prototypes of the revised trash can, based on the students' revised specs.

The Sanitation department director followed Besign school's recommendation to adopt a rapid prototyping approach to install the proposed new product on select pilot locations, identified as "trouble shooting locations," where cigarette butts have been particularly numerous (for e.g. the commercial Avenue Jean Médecin in central Nice). Once one of the 2 prototypes is validated a small batch (approx 50 garbage cans) will be produced and enable the city to test and quickly observe results. The challenge for the city remains, before anything else, efficacy: can a new "specialized" piece of furniture fight against a particular type of waste as ubiquitous as cigarette butts ?

However, for the totem element of the Ricochet project, the city favored their traditional process, that is to further develop an RFP (Request for Proposal). Public market regulations in France impose the publication of such RFP opportunities to several companies to prevent favoritism.

The city is currently benefiting from the expertise of a contracted designer who is overseeing the entirety of Nice's public furniture. His goal is to provide a global view of all street structures, including benches, chairs, lights, garbage cans, to create coherence, art direction, and cost-effectiveness while respecting the vernacular identity of Nice. To fully implement the new Totem solution, proposed by Besign students, the city has to follow a few more steps in the near future:

- Given that the totem needs to be produced within the constraints of public markets, the city has to consider a cheaper material than metal (the recommended steel is too expensive these days). This input will directly influence the future Call for project specs. document (cahier des charges).
- The city has to create a whole new public market for this new piece to exist, aside the existing trash cans contract already in place with Sineu-Graf
- The city has recently filed a patent for the Totem.

Criteria 2: Assessment of change to internal organizational practices

Leadership, Human resources, professional practices

For a new product to be launched and a campaign to take root within a complex, silo-ed, bureaucratic administration such as the city of Nice, it was important for Laurent Calatayud and Mathieu Vierne to gain buy-in from various key stakeholders, including, among others:

Internal stakeholders

For the HR department of the Sanitation department, it was an eye-opener to the power and creativity a design point of view can bring to solve complex problems that have been addressed in very traditional ways. For the city of Nice, it was an opportunity to gain leadership on the topic of waste management, activating its membership to the European consortium of clean cities (AVPU, Association des Villes pour la Propreté Urbaine) with original approaches and pioneering practices.

“ *As part of the study on trash cans, Besign School students came to share the daily life of sanitation workers by shadowing them in their cleaning missions. This immersion was particularly well received by the agents who felt listened to and valued. This approach is quite relevant to facilitate the adoption of the new cleanliness furniture and accessories by the agents.* ”

says Mathieu Vierne, director of resources and prevention at the Sanitation Department

The **Sanitation workers** can better understand the relevance of characterizing waste, the environmental challenges at play in cleaning street waste, and their role in it. The buy-in of the sanitation workers to this day remains critical especially given the fact that their profession is too often underrated. Adopting new devices and processes, using different communication tactics, is no easy task. Early this year, The Nice Department of Sanitation earned the first Grand Prix 2022 of the National Trophies awarded by the AVPU, for a video clip honoring the role played by sanitation workers. This department was then celebrated internally for its remarkable and innovative actions and strategies, making cleanliness one of the essential steps to environmental protection.

Additionally, **the diploma project of Claire Denizart** continues to engage the sanitation workers in a collective reflection, seeking to find co-created solutions, not only to improve their working conditions, their understanding of their mission, but also augment their capacity through innovative accessories and devices, such as their street cleaning trolleys. A year after our project, it might still be too early to undertake such reflections on the topic of implementation and practice change. Revisiting the adoption level, and evaluating the implementation of the new solution on the ground should ideally happen again, once the new prototypes are being deployed on the streets of Nice (an operation scheduled for Winter-Spring 2023). Then an additional, more detailed evaluation can follow as an annex to this document.

External stakeholders

We can assume that the wide-ranging involvement and cooperation of entities – Sanitation, Innovation, and representation by elected officials as well as external partners – generated a wider conscience and appreciation of design in administrations typically not familiar with design process.

The partnership with **EuroConsulting Group**, which was instrumental in managing this city partnership project with Besign School, encouraged a cross-agency work relation, introduced new project management skills (such as project reporting), and de-dramatized the endorsement of design as a complementary discipline to municipal strategy.

Calatayud also convinced his superiors and colleagues of the relevance of a behavioral design approach, for instance **Luc Favier, General Administration Director**, in charge of public space quality. Indeed, in March 2022 he presented the student project in the presence of the heads of sanitation workers. Favier, positively impressed with such a human-centered design approach was instrumental in connecting Calatayud to the recently hired city-wide designer and celebrated the service's coordinated efforts to contribute to the region's environmental protection.

The City's innovation department was instrumental in establishing the contract with Besign, and helped identify the waste management challenge of the Sanitation department as a topic for design innovation. Other services of the city could potentially benefit from such partnership.

From a professional practice standpoint, the project allowed a shift in perception of design as a discipline that provides a valued holistic approach. "The added value of this design research centered on the analysis of needs, the in-depth understanding of behaviors and uses made it possible to outline the sociology of smokers, which is at the heart of the problem of cigarette butt pollution. The technical services of cities do not yet have the natural reflex of these approaches, nor the habit of using design. But my positive takeaway of this partnership experience with Besign School is that it demonstrated that the pollution problem could be addressed not by the usual consulting firm study, but by design!" comments **Christophe Junac**.

For the territory at large and its elected officials, such as Pierre-Paul Léonelli, Deputy Mayor of Nice, in charge of cleanliness, collection and the fight against incivilities, Metropolitan Councilor and Chairman of the Cleanliness and Collection Commission, the complexity of the issues at play required the input of innovation practices and sustainable design strategy rather than just technician and technological approaches.

“ Starting from a seemingly mundane subject matter (i.e. cigarette butts on public roads) Besign students were able to not only find heaps of ideas, show interest and even feel concerned about the subject, but also proposed a fine reflection and exhaustive analysis of the problem.

In the end, they designed objects that can guide our fellow citizens in adopting more civic behaviors. Engaging this youth – so naturally conscious of the climate issues - reinforces my idea that we should submit other subjects to them to improve user behavior, and put design expertise at the service of other important public service challenges.

says Pierre-Paul LEONELLI, Deputy Mayor of Nice, Delegate for Cleanliness, Waste Management, Parks and Gardens, Vice-President of the Metropole, Regional Councilor for the Region “Le Sud.”

The final public restitution held at the school in February 2021 also included influential VIP guests such as elected official Patricia Demas, the Alpes-Maritimes Senator, passionate about environmental issues and the role of students in shaping innovation.

Criteria 3: Collaborating with youth, students, in a learn by doing environment - Feedback from partners and students

“I admit the student team did more in 6 months than we had been able to achieve in 6 years!” joked **Laurent Calatayud**, director of the Sanitation department of the city of Nice the day of the students' final presentation in February 2022.

A year later, when interviewed, Calatayud added: *“We really needed an outsider to look into our daily reality, in order to gain a different point of view on our problem.”*

“It was a great undertaking! I'm always pleasantly surprised by the work of Besign students, because their training is so centered on uses and people, and not technological solutions, as we are often used to doing, ” added **Christian Gasquez** who has collaborated with the school in recent years.

“I found the students' appropriation of the subject really enthusiastic, even the youngest - although cleanliness wasn't the sexiest subject. I expected a very scholarly approach, instead I saw people who really tried to understand, and develop a deep understanding of the issue. We saw them professionalize as the project progressed, in a way they grew with the project. I was impressed...” added **Christophe Junac**.

Added value of a real-world partnership for students

Most students were motivated by the opportunity to work on real-world, meaningful challenges, in their own city, and be able to be in touch with very engaged, knowledgeable and passionate professional partners. Following her experience in this partnership project, Claire Denizart, a 4th year student designer leader in the project, was recruited to conduct her summer internship at the Sanitation department (Service de la Propreté).

Over the summer 2022, she worked closely with partners Laurent Calatayud and Matthieu Vierne, mostly on citizen engagement tactics, waste sensitization and eco behavior. Subsequently, Denizart embarked on a longer-term collaboration with the Sanitation department to focus her diploma project on waste sorting strategy and city cleanliness as her research topic and site study. She has initiated a new model of partnership-based diploma project at the school. She recently published her diploma thesis, entitled “*Expotentielle*,” focused on the topic of waste selection, transformation and management, and is currently developing her design diploma project on design solutions that further enables sanitation workers (due April 2023).

“ *Waste management is a fascinating, complex and complicated subject, for which there is no single solution. It’s a systemic problem, and without sociology and the added value of behavioral design we cannot settle it.* ”

says Claire Denizart, Besign School 5th year student.

“ *When we began designing ways to utilize waste devices for the long term, we recognized the importance of reevaluating the current practices and processes from within. This involved not only fostering meaningful interactions with users and maintainers but also embracing a shift in mindset.* ”

says Holly Bartley, Besign School 4th year student on a gap year.

“ *This project is a proof of concept that design has its place to serve public service. Admittedly public services are not the easiest thing to change and a big challenge still lies in demonstrating that, contrary to popular belief, design is not an aesthetic practice, but a social practice, conveying meaning and values, which aims to solve major issues of the 21st century.* ”

says Marianne Giraudon, Besign School 5th year student.

For Besign, The Sustainable Design School

This partnership consolidated an existing and established relation with the City of Nice/ Métropole de Nice; it diversified the services the school has collaborated with, following earlier partnerships with the Police, Urbanism, Port departments prior to this project. It connected the school to a larger ecosystem of public service administrations, such as UGAP, a key agency that provides innovation tools, contracts, and processes to local governments.

“ *The team has successfully shown that design can have a profound impact far beyond its traditional domains, that is into the sector of social innovation.* ”

says Grant Lindscott, Director of Pedagogy at Besign.

THEORY OF CHANGE SUMMARY

Conditions to be changed and assumptions	cigarette butts are the most thrown away waste on the ground and unfortunately the phenomenon of incivilities has increased in Nice and elsewhere.
Proposed interventions (activities and resources deployed)	behavioral design study and demonstration of its value, drawing insights to improve consumers' existing choices; user-centered and workers observations and interviews; to nourish a design solution that would be based on a human-centered approach.
Objectives	encourage smokers to respect rules of cleanliness of the city of Nice
Output	a redesign of the existing trash can, plus a new typology of design system that includes a public ashtray totem and a signage/communication campaign to support it
Outcome (changes in competences, behavior, practice)	a sustainable design approach introduced in public municipal services; the realization that change should happen first by involving the workers responsible for the city's cleanliness; and new methods of sensitizing the general public.
Desired impact (change in conditions)	a test installation would allow stakeholders to measure the impact of the solution, both qualitatively in terms of behavioral patterns, and quantitatively in terms of butts counted on the ground and around the new devices deployed.

VI- IMPLEMENTATION CHALLENGES & LESSONS LEARNED

What surprises and pitfalls have we encountered?

A public administration innovation and culture shift...

For the Sanitation department, a municipal government entity with high political pressure from the mayor of the City of Nice and its elected officials, the topic of cleanliness and incivility is a constant battle and a true electoral stake. Despite limited time and budget, 1,000 km of streets to take care of, and an in-house team not accustomed to design processes, students received a warm welcome from the department heads and HR department. The project first and foremost brought a change in work methods and points of views, but also in work culture with an attitude of care, empathy, and possibility students brought to workers who remain often under-estimated in innovation processes.

Additionally the silo-ed waste management as it is organized in the city today doesn't facilitate collaboration across departments, although some pooling of resources would make sense. Aside from the sanitation department focused on cleaning, we learned there was a separate department of waste collection and some of the responsibilities also fell on the green spaces department.

One of the epiphanies from the stakeholders involved, specifically the elected official PP Léonelli, was his genuine surprise about the ability of the young designers to provide qualitative research on human needs, to provide a deep analysis of the "why" – for instance delving in the behavioral science of social norms in urban public spaces. He truly valued this foundational approach, combined with the sustainable creativity, to explain so many undesirable incivility phenomena on the streets of Nice.

What lessons have we learned along the way:

Insights from the design team on the challenge of addressing waste management, **Quoting student Claire Denizart**, interviewed in January 2023

1. *The complexity of the overall process to clean cities.*
2. *The importance of the service in terms of public health and hygiene.*
3. *The realization of the key role of the sanitation workers (Cantonniers), putting the spotlight on an underestimated profession that needs to gain more respect and recognition.*
4. *The complexity of public service, a slow process, with limited autonomy in the sanitation centers.*
5. *The inadaptation of a centralized communication department to the needs, technical knowledge, and lived experience of the Sanitation service.*

Quoting student Tom Maquard, Besign 5th year diploma student, involved in the Ricochet project., interviewed in March 2023

"I discovered with this partnership with the city of Nice my first practical field experience with agents of the Metropole de Nice, who were always available to exchange, listen, and were really passionate about their work.

The invitation to shadow the cleaning agents made me appreciate the project in a whole new dimension: I realized how important it was, in our job as designers, to take into account ALL the ecosystem stakeholders. From the elected officials to the municipality to the sanitation workers, we were nourished by real human experiences which have enabled us to develop an authentic project.

Our proposals stem from the deep desire to bring together the citizens of Nice around "on the ground" solutions, in order to improve their consideration of the urban environment and therefore ensure that they take care of it and can project themselves into a cleaner common future."

Insights from the partners,

Quoting Laurent Calatayud, interviewed a year later

"Four months for a project is too short, although it was very positive for us! One element I'd suggest you develop would be to ask students to learn and figure out "how much does such a project cost." What's the financial feasibility, its technical implementation evaluation, elements that could help me fundraise my initiative further.... such as the cost of manufacturing, operation, deployment. Thinking about cheaper materials, etc.

More than ever, a circular economy using local materials is a must: as steel has become unaffordable since the war in Ukraine, and that change occurred for us literally overnight... agility, and adaptation are key values for a designer.

It was a brilliant idea to gather smokers in a smoking area! It facilitates optimization, to not have to duplicate baskets. I'd go further and say that it empowers smokers in certain places where smoking is clearly marked as allowed.

The design recommendations of the students were very concrete which was great for us to share and explore further implementation with other Municipality leadership."

CONCLUSION

Design at the service of public innovation, societal challenges, and changing practices in municipal services is what this project demonstrates. It also shows design's ability of sense making of everyday life's complexity.

Such experiential "learn by doing" project make Besign students more aware of ways to solve seemingly intractable issues, and debunk interrelated myths and address sustainable development goals.

When using research techniques and methods such as deep listening, observation, immersion, shadowing, coupled with an understanding of behavioral science, designers are enabled to develop empathy for the user's problem, and propose truly innovative solutions, that are grounded in a deep understanding of who and what's at stake.

"This long-term project is a great example of using design to navigate the complexities of the real-world environment. Driven by applied design research together with the posture of creative confidence," adds **Grant Lindscott**, director of pedagogy at Besign.

As Besign gets ready to celebrate its 10th anniversary, such partnership signals the importance to anchor itself even more within a territory that is so meaningful to its community of students, teachers and administrators, working along its local partners, be it public or private. The role the school can play in facilitating innovation by doing has only started.

RICOCHET

A ricochet is the rebound of a stone thrown obliquely on the surface of the water.

The pebbles of Nice are the inspiration for this project because of their organic and iconic forms, for a strong identity.

The ricochet effect makes sense when the smoker bounces the messages around to adopt the right behaviour.

Our concepts **bounce off each other** to create a more virtuous and sustainable circle around the cleanliness of the city of Nice.

A SYNERGY

For this project, we wanted to create a real **synergy between our concepts** in order to **create a continuity** in the smoker's path. The sole aim is to get them to throw into the litter bin. **Non-smokers** are not left out of our approach, and will also benefit from the signs on the ground indicating the nearest litter bins.

Moreover, if the project is a success, it will inevitably be impacted by the reduction in the quantity of cigarette butts on the ground and by the presence of cleaner devices, just like the city's **cleanliness agents** who will **benefit from this synergy**.



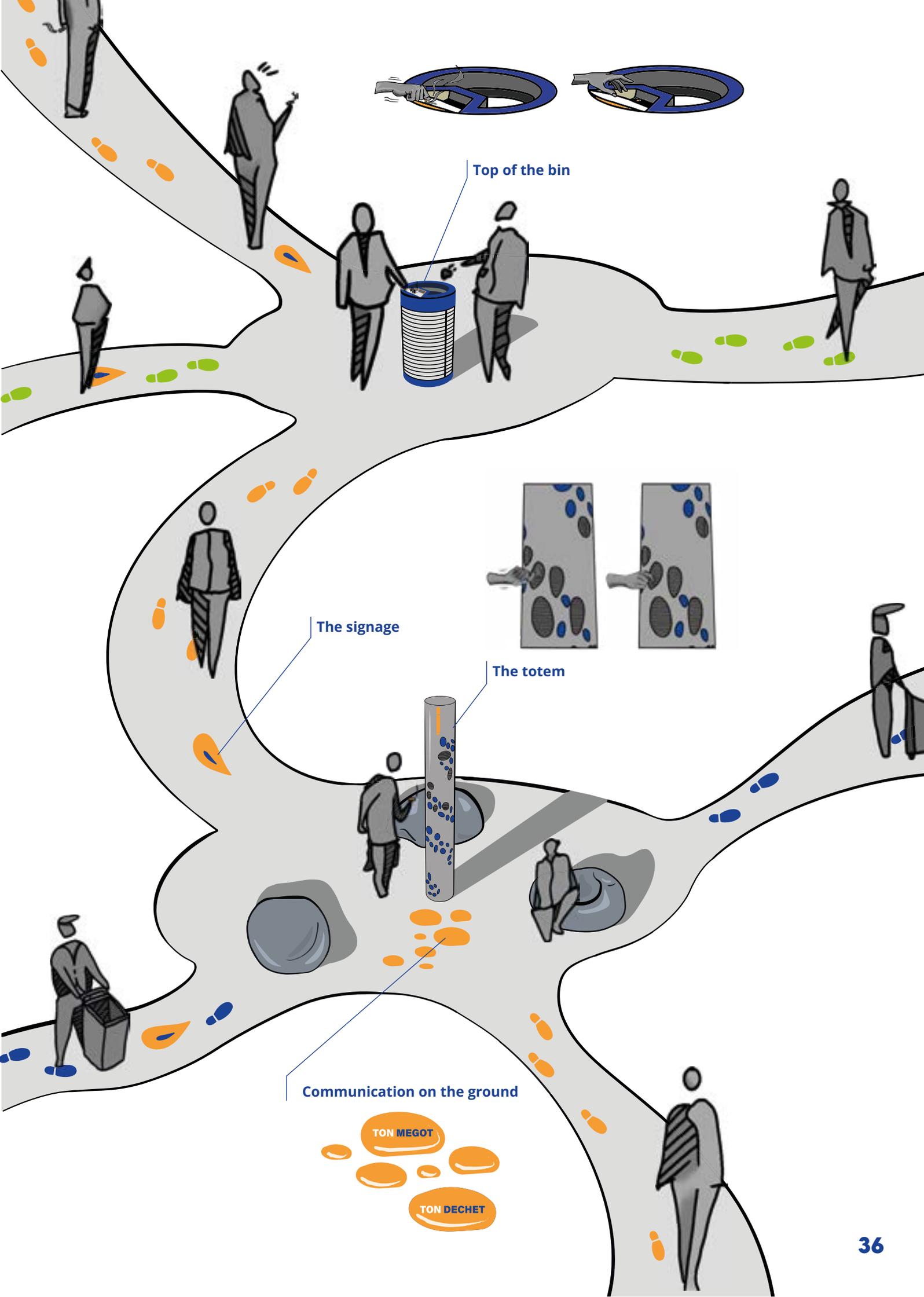
Smoker's path



Cleaner's path



Non-smokers path



Top of the bin

The signage

The totem

Communication on the ground

TON MEGOT

TON DECHET

FINAL PRESENTATION

February 10, 2022 at Besign campus in Cagnes sur mer all photos © Besign School



Introduction of the final presentation by coach-teacher Laetitia Wolff



Presentation of the project by students, with the totem-ashtray in foreground



Pierre-Paul Leonelli, Maurille Larivière and Laetitia Wolff debriefing after the presentation



Explanation of the behavioral pattern by student Claire Denizart to senator Patricia Demas and Metropole innovation department Christian Gasquez



Explanation of the Totem ashtray and related smokers zone thanks to floor signage and communication campaign, by student Claire Denizart to senator Patricia Demas



Student group photo, with, in the spotlight on the right, Laurent Calatayud, director of the Sanitation department.



THE DESIGN TEAM

THE COACH

Claire DENIZART Tom MAQUARD Marine DHALLUIN Samantha BUFNOIR Elisabeth Nazarova Laetitia WOLFF
 Mariane GIRAUDON Emma WEBER Henri BORDE Leonor CASSINI Justine BIASI
 Holly BARTLEY Romain DESREZ Ombeline GONIN Ines VANHOENACKER Arpiné SAAKIAN

From top to bottom row, so we understand how to match names and faces.



LAST WORDS

Introduction speech by Laetitia Wolff at the final project presentation, February 10, 2022

SDS Besign = design for life

Convinced that the world can change through design, we address the major issues of the world, the planet, society, and here, of the city = through the prism of design we aim to resolve those issues in a desirable, inclusive and sustainable way.

Design rimes with desire / design = purpose

Before giving the floor to the students...

What would public action look like?

What if... it were designed with and for the populations?

What if... we changed method to draw from design but not only... designs plural - behavioral design, strategic design, graphic design, industrial design, urban design... the various scales complement each other as we will see...

What if... we borrowed from cognitive sciences (e.g. Behavioral design), sociology and anthropology

What if... we were inspired by the values of social innovation and believe in a sensitive apprehension of the world

What would public action look like?

What if... we took more time to diagnose the problems UPFRONT rather than wanting to find solutions immediately, too quickly, and too prescribed,

What if... we took the time to frame and reframe the problem, as that's the designer's job too!

What if... we accepted that innovation isn't always a technical solution...

This experience as a coach to accompany the team of Besign SDS students confirms me in my aspiration to take design ever further ...

"Dal cucchiaino alla città" as Italians say. (from the spoon to the city)

My plea is therefore for a school-laboratory of design as a place for research-action, as an engine of transformation with and for public services.

Colophon

The Ricochet project, Cleanliness in the city of Nice

This design case study, written by Laetitia Wolff a year after the project was presented, inspired by her role as partnership coach (Semester 1, Winter-Spring 2020-2021) and as Design Impact instructor. It also quotes part of the report prepared, in French, for the city of Nice by project partner Philippe Courpron of EuroConsulting.

The document was designed by Holly Bartley, Besign graduate student, inspired by the original deliverables prepared by the team, reusing its graphic and visual identity, and art directed by Laetitia Wolff. Kudos to Marianne Giraudon, Henri Borde and Claire Denizart, for their original content and graphic design coordination.

Special thanks to Maurille Larivière, Director of Besign, The sustainable design school.

Grant Lindscott, Director of pedagogy, Besign, The sustainable design school.

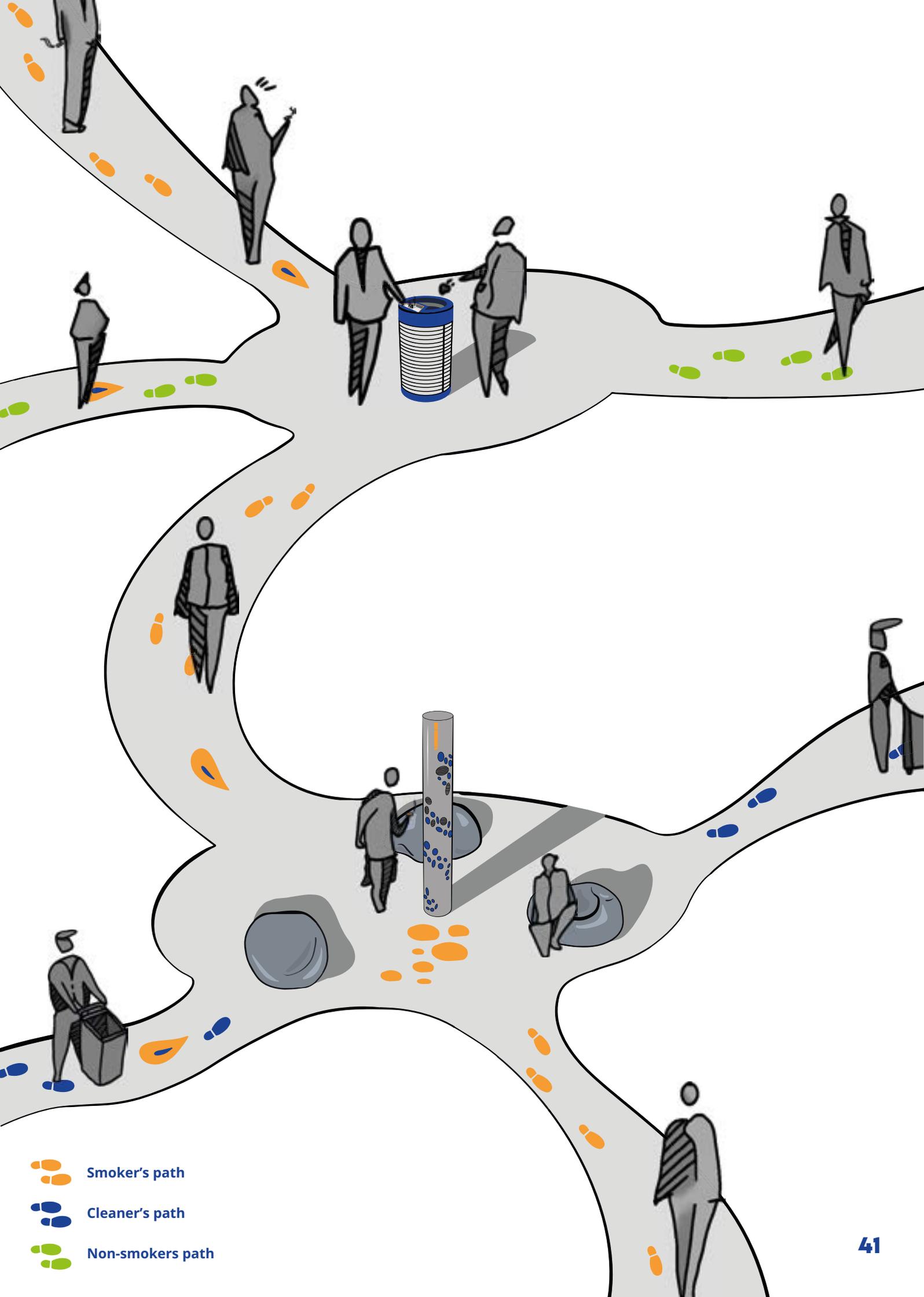
Saurabh Bedarkar, Lab manager, Besign, The sustainable design school, Claire Denizart, Marianne Giraudon, Tom Macquard, 5th year students.

Laurent Calatayud, Directeur de la Propreté, Ville de Nice, Pierre-Paul Léonelli, elected official at the city of Nice and at Région Sud. Christophe Junac, Directeur de l'Innovation et de la Ville Intelligente. Christian Gasquez, Directeur innovation, développement des nouveaux usages. Mathieu Vierne, Chef de service Ressources (humaines et financières) et Prévention de la Direction de la Propreté

Typeface names : Lemon milk and Open Sans

NB *Design for Social Innovation, Case Studies from Around the World*, a book edited by Mariana Amatullo, Bryan Boyer, Jennifer May, Andrew Shea (Routledge, 2022) who are respected colleagues of the professor and case study writer Laetitia Wolff was a major inspiration for this case study and others to come soon.

www.besignschool.com



-  Smoker's path
-  Cleaner's path
-  Non-smokers path

Thank you

To know more write to contact@thebelab.org

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