2024 Collaboration Impact Report

NFI - Bupa Collaboration

Norman Foster Institute
on Sustainable Cities

Bupa

Contents

1. Introduction

1.1 2024 Overview
Establishing the Partnership

The 2024 academic year marked the inaugural year of Norman Foster Institute (NFI) and the second year of collaboration with Bupa, a partnership grounded in a shared ambition to advance healthier, more resilient cities through education, research, and applied urban practice. This first year focused on embedding public health expertise into NFI's academic programme and city-based work, establishing a foundation for longer-term impact.

Key outcomes of the 2024 academic year include:
- Support for **24 postgraduate scholars from 20 countries** through the Master's Programme on Sustainable Cities, strengthening global capacity in health-informed urbanism
- Delivery of **five bespoke lectures and workshops** addressing urban health, mental wellbeing, environmental exposure, and public health–led design
- Integration of health metrics and analytical frameworks into **three city-based pilot projects across the European context (Athens, Bilbao, and San Marino)**, with emphasis on spatial, environmental, and social determinants of health
- Facilitation of cross-sector exchange among a **multidisciplinary academic body of more than 30 global experts** spanning public health, architecture, climate science, and urban planning.

By combining Bupa's health expertise with the Norman Foster Institute's city-centred research and design capabilities, the partnership positioned health as a measurable and actionable outcome of urban transformation. This first year established shared methodologies, language, and priorities that now underpin the collaboration's ongoing development.

Lord Norman Foster Addressing the NFI Cohort
Source © Norman Foster Institute. 2024

1.2 The Role of Urban Health
in Advancing Design Education

Student Engagement
Source © Norman Foster Institute. 2024

Cities play a defining role in shaping human health. As urban populations grow and cities confront accelerating pressures—from climate change and environmental stress to inequality, ageing, and declining wellbeing—the built environment increasingly determines how people live, move, connect, and thrive. The NFI–Bupa collaboration responds to this challenge by placing public health at the centre of design education and applied urban practice, reframing health not as a secondary outcome, but as a core measure of urban success.

2024 Big Takeaways

- **24 postgraduate scholars representing 20 countries**, building global capacity for health-led sustainable urbanism
- Diverse cohort backgrounds spanning architecture, urban planning, ecology, material science, urban design, and nonprofit management

Three pilot cities tested health-led diagnostics across a European context, demonstrating adaptability across scales and governance models:
- **Athens: 643,000+ residents across 39 km²** — students engaged with Mayor Haris Doukas and the municipal administration
- **Bilbao: 347,000+ residents across 41 km²** — students worked with Mayor Juan Mari Aburto, his administration, and local stakeholders and community groups
- **San Marino: 33,000 residents across 12 Castelli within 61 km²** — students engaged with state leadership and Stefano Boeri, working closely with Republic of San Marino

Education, Applied Practice, and Research Outcomes

Within NFI's one-year Programme on Sustainable Cities, health is embedded as a cross-cutting theme through lectures, analytical workflows, and city-based fieldwork. Bupa's contributions strengthened student capacity to assess how urban form, environmental exposure, and social conditions influence wellbeing, and supported the use of health indicators as practical tools for prioritising interventions. Across the pilot cities, scholars translated spatial diagnostics into place-based proposals targeting key determinants of health, such as thermal comfort, walkability, access to nature, inclusion, and social connection, creating strategies for local relevance and long-term measurability.

Beyond strengthening health literacy, the collaboration advanced a framework for translating health evidence into urban decisions. The 2024 work emphasised structured ways to identify who benefits from interventions, where impacts are likely to be strongest, and how to support implementation through clearer alignment with local priorities and governance mechanisms. By embedding a health lens into analytical and design stages, the programme strengthened the ability to evaluate trade-offs, prioritise equity, and develop proposals that can be assessed by their potential contribution to long-term wellbeing.

Through this approach, the NFI–Bupa collaboration demonstrates how health-led design can move from concept to practice—shaping education and informing city interventions with relevance beyond the academic programme.

2. Impact of Building Health Capacity in Education

2.1 Integrating Health in Norman Foster Insitute
Master's Programme on Sustainable Cities

The NFI Programme on Sustainable Cities is a one-year, postgraduate academic initiative designed to equip future urban leaders with the skills, knowledge, and values required for evidence-based city-making. The programme integrates education, research, and applied practice to address environmental, social, and public health challenges shaping contemporary urban life.

In collaboration with Bupa, the 2024 edition of the programme placed a renewed and explicit emphasis on health as a core dimension of sustainable urbanism. Health was embedded as a cross-cutting consideration—shaping and shaped by mobility, housing, public space, climate resilience, and urban governance—rather than treated as a standalone or specialised topic. Through lectures, workshops, city visits, and technical analysis, scholars were encouraged to identify and respond to the spatial determinants of health within diverse urban contexts.

The programme is delivered in partnership with the Universidad Autónoma de Madrid (UAM) and is structured around three progressive stages that guide students from systems understanding to applied intervention:

Foundations:
Students are introduced to urban systems thinking, governance structures, policy frameworks, and historical context. Core themes include public health, urban form, sustainability metrics, and the interdependencies between environmental and social systems.

Diagnosis:
The focus shifts to analysing challenges and opportunities within selected pilot cities. Students apply interdisciplinary methods to investigate issues such as heat mitigation, playability, social cohesion, mobility, and equitable access to resources, using spatial data and health-related indicators to inform their analysis.

Interventions:
Working in close collaboration with local stakeholders, students develop actionable strategies for urban improvement. Outputs include evidence-based design guidelines, mobility and public space frameworks, and spatial analytics tools tailored to the specific needs and conditions of each pilot city.

A defining feature of the programme is its direct engagement with real-world urban contexts. Each year, scholars are assigned to one of three pilot cities, which function as living laboratories for applied learning.
In the context of the NFI–Bupa collaboration, health considerations were embedded into each city brief, shaping research priorities, project outputs, and evaluation criteria across all stages of the programme.

Students are supported by the NFI City Lab, which operates as a research and development platform for applied urban analysis. The Lab provides access to advanced spatial data models, health and sustainability indicators, and visualisation tools, while facilitating collaboration between students, academic mentors, and city officials. This structure ensures that student proposals are both analytically robust and grounded in local realities, strengthening their relevance for real-world urban decision-making.

Bupa Sponsored Faculty Addressing NFI Students
Source © Norman Foster Institute.

2.2 Academic Impact
Bupa-Enabled Faculty & Teaching

Bupa Sponsored Faculty Addressing NFI Students
Source © Norman Foster Institute.

A core academic impact of the collaboration has been the enrichment of teaching through direct engagement with public health professionals. Bupa-led lectures, workshops, and technical sessions complemented the Institute's existing strengths in design, planning, and environmental analysis, introducing perspectives grounded in health systems, prevention, mental wellbeing, and the social determinants of health. This input helped faculty and students situate urban design decisions within a broader understanding of how health outcomes are shaped, measured, and influenced at population scale.

Expanding Interdisciplinary Teaching & Faculty Expertise

The partnership enabled a more interdisciplinary teaching model, bringing together architecture, planning, climate science, data analytics, and public health. Faculty were supported in integrating health considerations into studios, technical modules, and city diagnostics, strengthening the coherence of health as a cross-cutting theme across the curriculum.

Through collaboration with Bupa experts, academic staff:

- refine teaching approaches that link urban form and infrastructure to health outcomes
- incorporate health-relevant indicators and metrics into analytical frameworks
- align design pedagogy more closely with real-world public health priorities

This exchange has contributed to a shared language between disciplines, enabling more effective collaboration between design-led and health-led perspectives.

Strengthening Translation of Knowledge into Education

Beyond individual teaching sessions, the collaboration supported the translation of public health knowledge into educational tools and methodologies that can be reused and adapted in future programme cycles. Faculty worked alongside Bupa collaborators to embed health considerations into briefs, evaluation criteria, and analytical workflows—ensuring that health is not introduced as an isolated topic, but reinforced throughout the academic year.

This approach has strengthened faculty capability in:

- framing urban challenges through a health lens
- guiding students in applying health concepts to spatial analysis and design proposals
- assessing student work based on both design quality and potential health impact

Health Workshop External Speakers

Kathryn Gustafson, Founding Partner, Gustafson Porter + Bowman
Kevin Austin, Deputy Executive Director, C40 Cities
Shweta Narayan, Global Climate & Health Alliance
Giselle Sebag, Executive Director, International Society for Urban Health

Long-Term Academic Value

The academic impact of the NFI × Bupa collaboration extends beyond individual cohorts. By strengthening faculty expertise, interdisciplinary teaching models, and health-focused pedagogical tools, the partnership is building lasting institutional capacity. This ensures that health remains embedded within the Programme on Sustainable Cities in future years, supporting sustained impact across education, research, and applied urban practice.

3. Impact of Health Week Programme

3.1 Student Outcomes from Health Week

Health Week workshops are a critical mechanism for translating health theory into applied, interdisciplinary practice. For students, workshops accelerate learning by placing public health and design expertise in direct dialogue.

Strengthening Applied Health Literacy

A core outcome of workshops are a measurable shift in how students understand and operationalise health in design.

Through lectures, expert reviews, and collaborative studio work, students developed:
- a clearer understanding of how public space, buildings, and infrastructure influence physical and mental wellbeing
- an ability to propose design for preventive health outcomes
- confidence in engaging with public health concepts and terminology alongside spatial analysis

From Conceptual Design to Health-Informed Prototyping

The workshop structure—moving from visioning to prototyping and advocacy—supported rapid application of learning. Students worked in interdisciplinary teams to develop proposals addressing specific health contexts, including elder care, education, and community health.

Design work is informed by:
- climate vulnerability and exposure thresholds
- health outcome modelling and proxy indicators

This approach enabled students to test how design decisions could function as preventive health interventions, reframing buildings and public spaces as active contributors to wellbeing rather than passive backdrops.

Exposure to Expert Practice and Decision-Making

Direct engagement with practitioners and experts from the Bupa network is central to the student experience. Input from health experts support students in understanding how health considerations are evaluated in clinical, policy, and governance contexts. Bupa representatives contribute perspectives on clinical safety, health innovation, and systems governance, helping students link architectural concepts to health metrics and policy frameworks.

Developing Advocacy and Communication Skills

An outcome of the workshops is the development of student capacity to advocate for health-led design. Presentations to expert panels required teams to articulate feasibility, equity, and climate-health integration clearly and concisely—mirroring the expectations placed on professionals working with public-sector and institutional stakeholders.

Students demonstrated improved ability to:
- justify design decisions using evidence and health rationale
- communicate complex spatial and health data to non-specialist audiences

Early Signals of Educational Impact

By immersing students in an applied, interdisciplinary environment, Healthy Cities Week reinforces health integration into design thinking at a formative stage of professional development. For many participants, the workshops represente a pivotal moment in understanding how spatial expertise contribute to health outcomes.

Bupa Sponsored Faculty Addressing NFI Students
Source © Norman Foster Institute.

3.2 Academic & Professional Expertise during Health Week

Bupa Sponsored Faculty Addressing NFI Students
Source © Norman Foster Institute.

Healthy Cities Week has played a strategic role in expanding the academic and professional expertise embedded within the NFI Programme on Sustainable Cities. Beyond its value as a student-facing initiative, the programme has functioned as a concentrated platform for interdisciplinary knowledge exchange—bringing together experts in public health, architecture, climate science, policy, and healthcare delivery.

Through the NFI × Bupa collaboration, Health Week strengthened capacity to integrate public health thinking into education and applied research. Contributions from Bupa professionals and external experts complemented NFI's academic body, ensuring that teaching and discourse reflects real-world health priorities, governance, and challenges.

Broadening the Academic Knowledge Base

This expansion helped faculty and students:
- engage with health evidence grounded in clinical and population-level practice
- understand how health data is interpreted and applied within institutional and policy contexts
- align urban design discussions with emerging health research and innovation

Strengthening Interdisciplinary Teaching Models

A key outcome of Health Week is the reinforcement of interdisciplinary teaching models that bridge spatial disciplines and public health. Faculty and experts work collaboratively in lectures and workshops, creating a framework and vocabulary to support integrated thinking.

This approach strengthened academic capacity by:
- reducing disciplinary silos in design, planning, and health
- enabling more coherent integration of health themes across studios and technical modules

Professional Exchange and Knowledge Transfer

Health Week functions as a forum for professional exchange between academia and industry. Engagement with Bupa representatives created opportunities for dialogue on topics such as clinical safety, health innovation, sustainability strategy, and governance—helping align academic inquiry with real-world decision-making environments.

This exchange informs teaching and research to have:
- more practice-relevant educational content
- stronger links in urban design and health system priorities
- increased capacity to translate academic outputs into policy- and implementation-ready insights

Building Lasting Academic Capacity

The expertise introduced during Health Week is not isolated. Insights, methods, and relationships developed through the programme are absorbed into the wider academic structure of NFI, influencing subsequent teaching cycles, research initiatives, and external collaborations. By expanding access to public health expertise and strengthening interdisciplinary collaboration, Healthy Cities Week reinforces the Institute's role as a platform for health-informed urban education.

3.3 Impact of 2024 Healthy Cities Public Debate

The Healthy Cities Public Debate Series is a flagship public-facing output of the NFF–Bupa collaboration, designed to extend the Institute's research impact beyond the academic programme and into public, professional, and institutional discourse. By convening leaders across health, government, design, and urban policy, the series strengthens the partnership's role as a platform for health-led spatial decision-making—positioning the collaboration as an active contributor to policy-relevant debate on preventive health, climate resilience, and equitable urban transformation.

2024 Edition: The Urban Scale

The second edition (2024) advanced the theme of health at the urban scale, focusing on the role of planning, ecological systems, and nature-based solutions in shaping long-term wellbeing. The programme reinforced the relationship between urban form and population health, highlighting how streets, public space networks, green infrastructure, and data-driven governance can reduce exposure to environmental risk factors and improve outcomes across diverse communities.

The 2024 debate brought together internationally recognised voices including Mark J. Nieuwenhuijsen, Catherine Cummings, Iñaqui Carnicero, Kathryn Gustafson, Lord Norman Foster, Yolanda Erburu Arbizu, and Giselle Sebag, followed by two moderated panel and conversational discussions. The event created a high-profile forum where health evidence, spatial practice, and public policy were discussed together—accelerating cross-sector alignment around common priorities.

Bupa's Contribution and Collaboration Impact

As strategic partner and co-convenor, Bupa played a visible and active role in shaping both the agenda and the framing of discussion, ensuring that the debate remained grounded in real-world public health priorities. The opening by Catherine Cummings (Sustainability Director, Sanitas ELA, Bupa Group) strengthened the link between climate action and health leadership, reinforcing Bupa's focus on prevention, long-term wellbeing, and the health implications of environmental change.

Through Bupa's involvement, the series achieved outcomes beyond a standard architectural debate format:
- Health system relevance: Topics and discussion were anchored in population health, prevention, and the lived impacts of environmental exposure—strengthening the translation of design discourse into health outcomes
- Expanded reach and credibility: Bupa's presence helped broaden engagement beyond design audiences, attracting attention from healthcare-aligned stakeholders and strengthening the partnership's legitimacy as a health-led urban platform.
- Shared language across disciplines: By positioning health as a measurable outcome of spatial decision-making, the event supported a common vocabulary for policymakers, clinicians, planners, and designers—enabling more integrated approaches to urban interventions.

Key Insights and Influence

Across the 2024 programme, speakers reinforced that the strongest health gains come from upstream action—shaping

2024 Healthy Cities Public Debate
Source © Norman Foster Institute.

2024 Healthy Cities Public Debate
Source © Norman Foster Institute.

environments before illness emerges. Major contributions included:
- Public policy leadership, with Iñaqui Carnicero (Secretary General for Urban Agenda, Housing and Architecture, Government of Spain) emphasising architecture and urban quality as instruments of public benefit.
- Evidence-driven urban health, with Mark J. Nieuwenhuijsen (ISGlobal) demonstrating how measurable planning and environmental indicators can guide healthier city strategies.
- Upstream prevention and equity, with Giselle Sebag (ISUH) highlighting place-based interventions as drivers of long-term population health and reduced inequality.
- Nature and wellbeing, with Kathryn Gustafson underscoring the role of landscapes and public realm design in supporting human experience, restoration, and social life.

Together, these perspectives strengthened a shared conclusion that health must be embedded earlier and more explicitly within spatial decision-making, aligning closely with Bupa's preventive health agenda and the Institute's mission to connect design intelligence with measurable wellbeing outcomes.

Extending Impact Beyond the Event

The debate series strengthens the NFF–Bupa collaboration as a long-term vehicle for thought leadership. It provides a recurring platform for disseminating emerging insights, building cross-sector networks, and shaping a collective agenda for healthier cities. The series will culminate in a co-authored professional publication synthesising findings across the three-year cycle, consolidating lessons learned and reinforcing the partnership's contribution to the growing field of health-led urban and architectural practice.

2024 Healthy Cities Public Debate (Second Edition)

The 2024 edition convened leading voices from health, policy, research, and design to explore how urban-scale decision-making can improve wellbeing, equity, and long-term resilience. The programme featured keynote contributions:

Opening Remarks
Catherine Cummings — Sustainability Director, Sanitas ELA (Bupa Group)

High-Quality Architecture as Public Policy to Improve Lives
Iñaqui Carnicero — Secretary General for Urban Agenda, Housing and Architecture, Ministry of Housing and Urban Agenda, Government of Spain

The Power of Place: Advancing Urban Health Upstream
Giselle Sebag — Executive Director, International Society for Urban Health (ISUH)

Healthy Urban Planning in Numbers
Mark J. Nieuwenhuijsen — Director, Urban Planning, Environment and Health Initiative; Director, Climate, Air Pollution, Nature and Urban Health Programme; Research Professor, Barcelona Institute for Global Health (ISGlobal

Landscapes for Humanity
Kathryn Gustafson — Founding Partner, Gustafson Porter + Bowman

These presentations were followed by two moderated panels, featuring speakers and invited participants including Lord Norman Foster and Yolanda Erburu Arbizu, expanding the debate into applied insights on governance, design responsibility, and implementation pathways for healthy cities.

2024 Healthy Cities Public Debate
Source © Norman Foster Institute.

2024 Healthy Cities Public Debate
Source © Norman Foster Institute.

2024 Healthy Cities Public Debate
Source © Norman Foster Institute.

2024 Healthy Cities Public Debate
Source © Norman Foster Institute.

4. NFI Athens Pilot City Student-Led Case Study

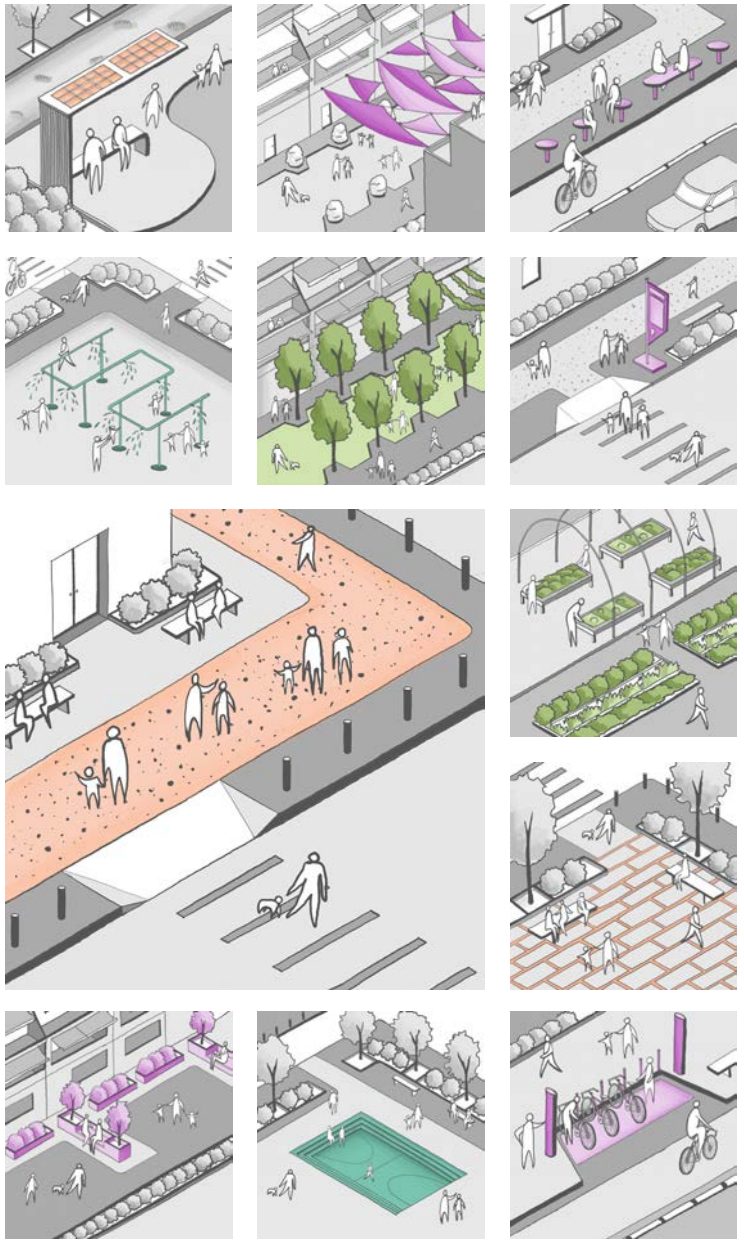
4.1 Athens Outcome Summary
Heat Stress and Pedestrian Well-being

Athens was the first pilot city in the NFI and Bupa collaboration to apply a pedestrian health and comfort led diagnostics approach to identify environmental stressors and socio-spatial inequalities that shape everyday resident wellbeing. The pilot project confirms urban heat as a major and escalating public health risk in Athens, driven by limited tree canopy, extensive hard surfaces, poor pedestrian comfort, and heat exposure concentrated in densely built areas. Central to this analysis is the urban heat island effect, a critical issue exacerbated by rising temperatures, reduced precipitation, and impervious urban surfaces. Temperature patterns have risen from an average of 17°C in 1979 to 18.4°C in 2023, with peaks reaching up to 45.5°C. Although annual mean precipitation remains relatively stable at 339.1 mm, rainfall has become increasingly erratic, with heavier bursts leading to flash flooding due to limited soil permeability and an over-reliance on hard-surfaced infrastructure. These conditions are compounded by car-dominated streets and fragmented public space networks, which reduce opportunities for safe, comfortable movement during peak summer periods. By exploring topics ranging from climate and environmental conditions to governance, energy, and cultural dynamics, the project built a holistic understanding of the factors driving the city's vulnerabilities and potential for resilience.

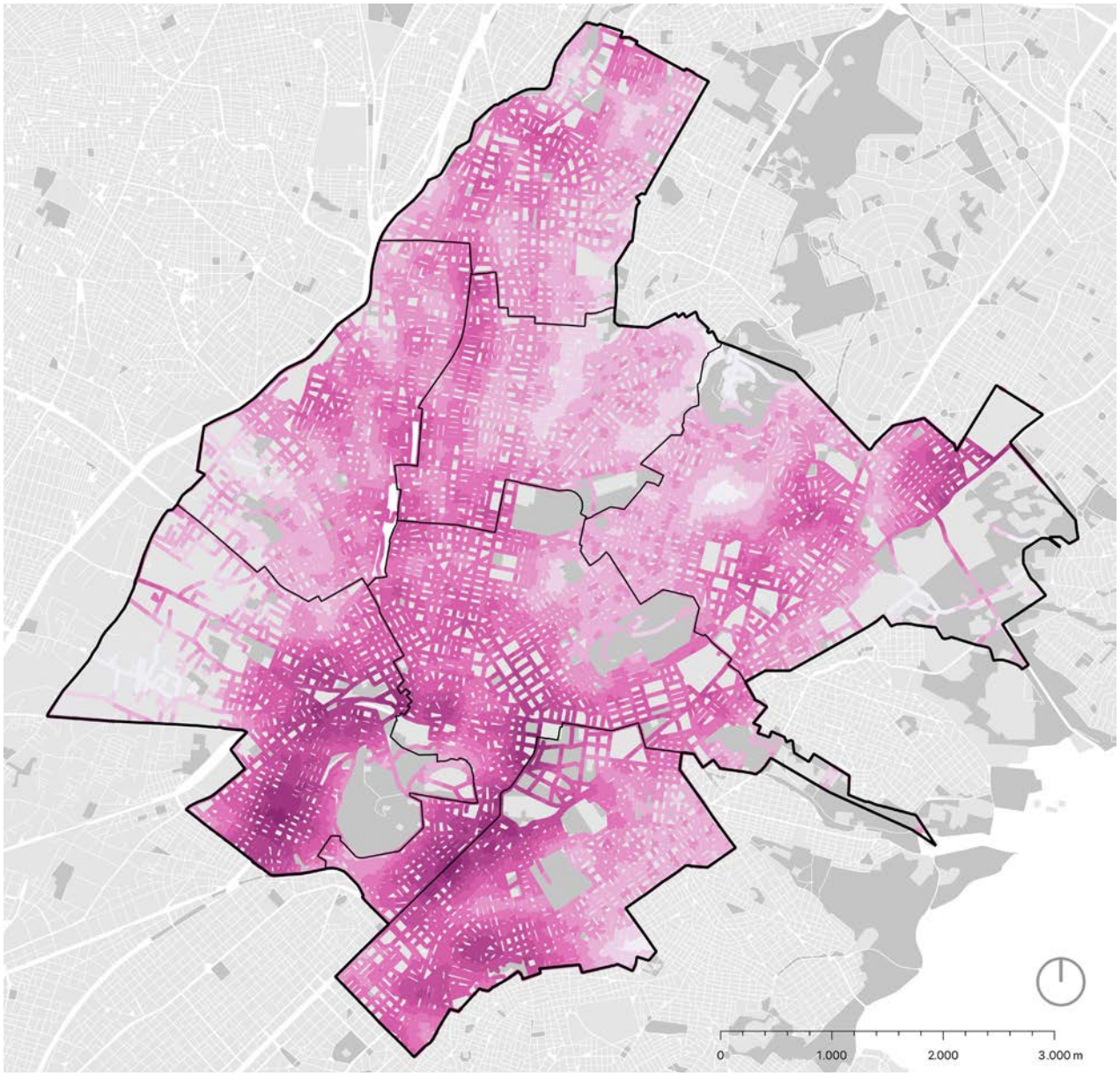
Kypseli is selected as the focus neighbourhood due to its high density and social diversity, offering a representative case of how heat vulnerability intersects with urban form and everyday lived conditions. With approximately 26,000 residents per km², Kypseli illustrates how socio-spatial conditions contribute to unequal health risks. The analysis revealed a strong overlap between the hottest zones and the residents most exposed to harm—older adults, families with young children, and low-income households—many living in thermally inefficient buildings with limited ability to mitigate indoor and outdoor heat stress. In parallel, the research highlighted structural barriers to healthy daily mobility, including low-quality sidewalks, limited shaded routes, and inconsistent access to green and social infrastructure. Together, these conditions contribute to reduced walkability, increased reliance on private vehicles, and heightened environmental burdens such as poor air quality and noise.

Project Outcomes

The Athens pilot translated these findings into a clear, neighbourhood-scale package of interventions designed to reduce heat stress and improve pedestrian wellbeing in ways that can be monitored and scaled. Student proposals prioritised street-level cooling and comfort measures—expanding urban canopy, improving walking conditions, and reallocating space toward safer, more inclusive public realms. Collectively, the interventions aim to deliver measurable health benefits, including lower exposure to extreme heat, safer and more attractive walking routes, increased everyday physical activity, and improved mental and social wellbeing through calmer, greener streets and accessible community spaces. The work supports the Municipality of Athens' climate resilience objectives—particularly around urban greening and improved public space—and aligns with Bupa's preventive health agenda by addressing upstream environmental drivers of health inequality at the neighbourhood scale.



NFI Athens Catalouge of Urban Elements
Source © Norman Foster Institute.



NFI Athens Urban Comfort Index Analysis
Source © Norman Foster Institute.

Proposed student interventions in Kypseli Neighbourhood:

- Kypseli is selected as neighbourhood case study because 9.91% of residents in the Municipality live here, with 32,955 people per square kilometre. The city prioritises finding locations for planting trees and incorporating green spaces.

- Streets occupy 31.8% of total area in Kypseli (over 59 linear kilometres) so interventions should focus on streets.

- There are 593 orthogonal intersections in Kypseli. If 8 trees are planted at each intersection, assuming that 42% of the sites are feasible for planting, this would add 1,992 trees.

- There are 17 triangle intersections in Kypseli. If one of the sides of the triangle reconnects to the adjoining street, one could conservatively plant 12 trees per intersection. If all 17 triangle intersections are feasible, this would add 204 trees.

- 75% of the street network are one way streets with parking on one side or both sides. If one car parking space is removed, three street trees can be planted comfortably. With 12,144 street parking in Kypseli, with 5% of parking removed, this would add 1,815 trees.

- By removing 5% of on street parking from Kypseli, this would remove 605 parked cars from the street. If 25% of on-street parking is removed, 3028 cars would be removed.

– In total, with the design templates of streets for Kypseli, which is approximately 5% of the municipality in area with almost 10% of the population residing here, **students designed a framework to plant 11,280 trees and remove 3,028 cars from the streets in Kypseli neighbourhood.**

4. NFI Bilbao Pilot City Student-Led Case Study

3.2 Bilbao Outcome Summary

Health Equity and Inclusive Public Spaces

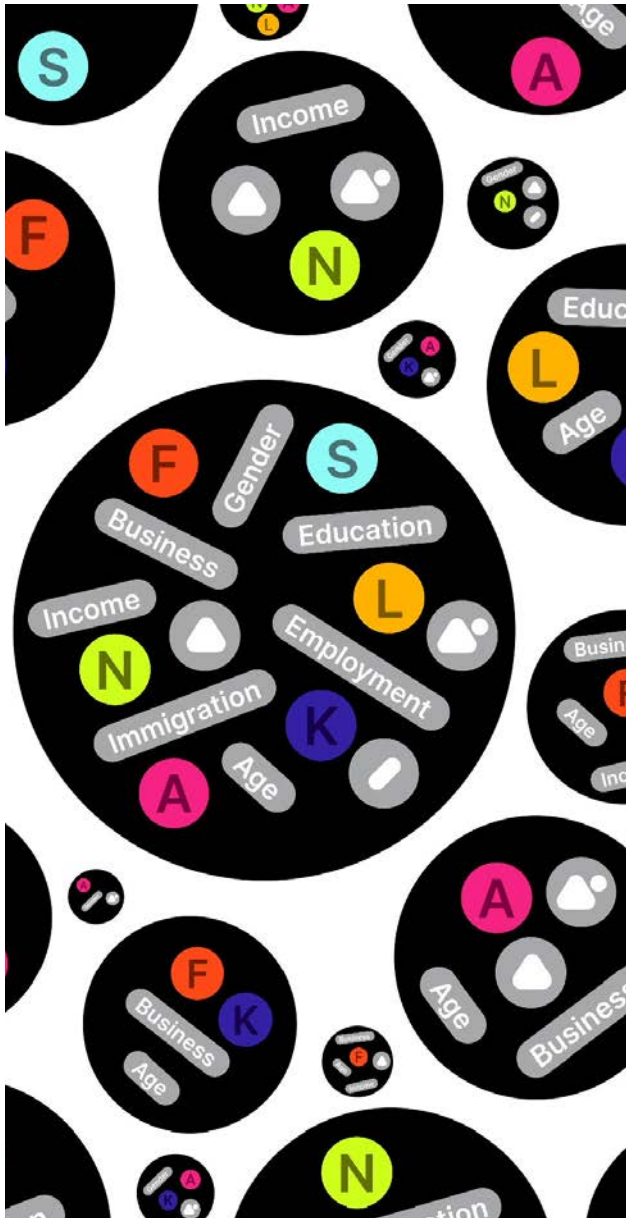
Bilbao was selected as a pilot city in the NFI and Bupa collaboration to test how health-focused urban strategies can strengthen social resilience, reduce inequalities, and improve quality of life across diverse neighbourhoods. The pilot responds to a set of overlapping urban health challenges that shape everyday wellbeing in the city, including an ageing population, social fragmentation, migration dynamics, and uneven access to public space and essential services. While Bilbao has undergone major regeneration over recent decades, the project highlights how the social and environmental determinants of health remain unevenly distributed—particularly between central areas and peripheral neighbourhoods where vulnerability and service gaps are more pronounced.

A central outcome of the Bilbao pilot is the prioritisation of social cohesion as a public health intervention, recognising that loneliness, reduced community trust, and limited spaces for everyday interaction contribute directly to poorer mental health outcomes. The project positions inclusive public space as a key health asset—supporting cross-generational and cross-cultural engagement, fostering a stronger sense of belonging, and reducing social isolation, especially among older residents and newly arrived communities. Student proposals respond to the risk of separation between social groups by designing environments that encourage contact, shared activity, and civic participation through accessible and welcoming public realms.

In parallel, the pilot identifies equitable access to daily health resources—including walkable streets, local food options, sport and recreation infrastructure, and proximity to nature—as a critical driver of physical wellbeing and long-term prevention. The project emphasises that where services are decentralised or difficult to reach, health outcomes worsen through reduced physical activity, weaker support networks, and limited opportunities for healthy routines. By improving neighbourhood connectivity and strengthening local provision in underserved districts, the interventions aim to reduce barriers that disproportionately affect low-income residents, older adults, and communities living farther from the city's most well-connected public amenities.

Project Outcomes

The Bilbao pilot translated these priorities into a set of place-based interventions designed to deliver measurable public health benefits through improved inclusion, mobility, and environmental quality. Student proposals focus on strengthening neighbourhood wellbeing by expanding spaces for social life, supporting active movement through safer walking and cycling connections, and enhancing access to green and recreational infrastructure. Collectively, the interventions aim to improve mental and emotional wellbeing through stronger community interaction and reduced isolation; increase everyday physical activity through better-connected, age-friendly environments; and improve environmental health by reducing exposure to air and noise pollution while expanding the availability of restorative public space. The work aligns with Bupa's preventive health agenda by targeting upstream drivers of inequality—particularly those linked to inactivity, isolation, and uneven access to health-supporting environments—while reinforcing Bilbao's broader ambition for inclusive, people-centred urban transformation.



NFI Bilbao Social Booster Clustering
Source © Norman Foster Institute.

NFI Bilbao Social Booster Proposal
Source © Norman Foster Institute.

Proposed student interventions in Bilbao:

- Developed a framework for Social Boosters: an intervention catalogue and engagement platform to systematically provide conditions for social interaction.

- Every Bilbao Social Booster is a temporary, progressive, micro-intervention that facilitates interaction across a range of dimensions through the exploration of different themes in public spaces. Aimed to activate underperforming public spaces and their existing infrastructure by incorporating physical devices, activites, and programmed events.

- Six themes guide the design and programme of the social booster: arts and culture, food, sports and fitness, knowledge, nature, and leisure.

- Three dimensions guide the quality of social interactions: bonding, bridging, and linking.

- Five Types of Public Space are targeted: Park, Rivers, Squares, Streets, and Voids.

- Students followed the framework in the neighbourhood of San Francisco, a lower income neighbourhood that struggles with social cohesion and interaction. Students designed a sports court, pictured left, focusing on children in the area.

- In total, more than 50 Bilbao Social Boosters were conceptually designed and proposed for implementation across the municipality.

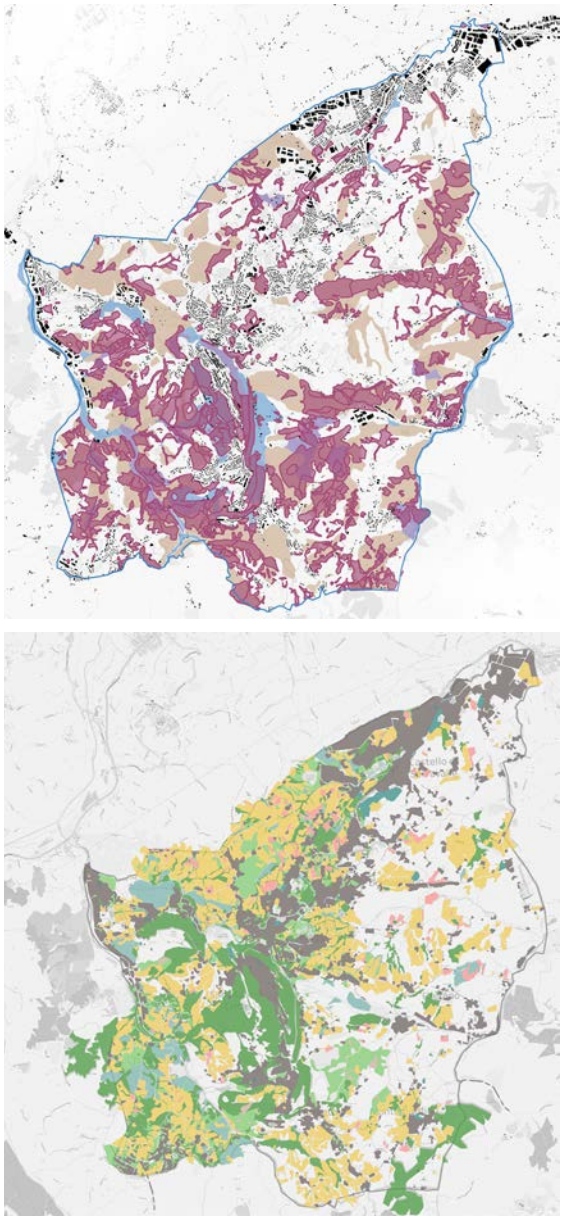
5. NFI San Marino Pilot City Student-Led Case Study

3.3 San Marino Outcome Summary
Mobility, Aging and Health Accessibility

San Marino served as a distinctive pilot within the NFI and Bupa collaboration, applying health-led urban diagnostics to understand how small, compact territories can better support population wellbeing through everyday infrastructure, mobility systems, and public space. As one of the world's smallest and oldest republics, San Marino combines heritage preservation with peri-urban expansion and a dispersed settlement pattern shaped by steep topography. These conditions create unique constraints for walkability and access, making the built environment a critical determinant of health—particularly for residents who depend on safe, comfortable movement to maintain independence and social connection.

A key outcome of the pilot was the identification of mobility barriers and social isolation as linked public health risks, reinforced by limited public transport options and a strong reliance on private vehicles for even short-distance travel. The diagnostics highlighted how steep gradients, discontinuous footpaths, narrow pavements, and gaps in crossings reduce pedestrian safety and comfort across many residential areas outside the historic core. These challenges are intensified by San Marino's demographic profile, with a high proportion of older adults who are more vulnerable to falls, reduced physical activity, and the health impacts of loneliness. Despite the country's strong governance, high living standards, and proximity to nature, the pilot revealed that access to green space, shaded routes, seating, and inclusive neighbourhood-level public realms is uneven, leaving some communities with limited everyday opportunities for movement, rest, and informal social interaction.

NFI San Marino Student Analysis
Source © Norman Foster Institute.



NFI San Marino Urban Analytics
Source © Norman Foster Institute.

Project Outcomes

The San Marino pilot translated these findings into a set of targeted interventions designed to strengthen healthy ageing, improve everyday mobility, and expand opportunities for social connection across the territory. Student proposals prioritised the creation of safe, continuous pedestrian networks and low-impact mobility routes adapted to steep terrain, enabling residents to move comfortably between homes, services, and public spaces. Interventions also focus on activating neighbourhood-level public realms through small-scale gathering points, shaded rest areas, and inclusive spaces for intergenerational activity. Collectively, these strategies are intended to deliver measurable health benefits including increased daily physical activity, improved mobility equity for older adults and non-drivers, reduced isolation through more sociable public environments, and safer streets through traffic calming and reduced car dominance in residential zones. The work aligns with Bupa's preventive health agenda by addressing upstream determinants of chronic disease risk and mental wellbeing, while offering a replicable model for how compact territories can embed health outcomes into spatial planning and infrastructure investment.

Proposed student interventions in San Marino:

- Students analysed 12 Castelli town centres of San Marino against five thematics: Mobility, Environment, Urban Planning and Development, Culture and Heritage, Social and Economic Activity.

- Through analysis of existing conditions, students found: 8 of 12 towns lack pedestrian infrastructure. 7% of San Marino residents use public transportation routinely. 5 of 12 towns lack public green space. Only one town has all eight core amenities (Grocery Stores, Restaurants, Clinics, Pharmaces, Schools, Kindergartens, Post Offices, and Retail).

- Following the 17 Sustainable Development Goals, students prioritised design that incorporates access to transportation, pedestrian connectivity, bicycle infrastructure, higher tree canopy, access to public parks and green spaces, diversity of eight core amenities, access to heritage sites and a high concentration of jobs.

- For the area of green space to reach a UN Habitat threshod of 20 square metres of green space per inhabitant, San Marino needs to add 5,600 square metres of green space.

- Additionally, San Marino needs to add 1200 metres of sidewalks, 500 metres of bike lanes, 250 street trees, 300 metres of public space, one more cultural centre, and 200 jobs to reach the goals set by the UN standards of health.

- Students engaged in many design charettes to plan for these additions to the future planning of San Marino.

7. Demonstrated Bupa Impact Beyond the Programme

6.1 Thought Leadership and Joint Advocacy Highlights

New York Climate Week 2023

Bupa and the Norman Foster Foundation (NFF) undertook a coordinated programme of advocacy to promote the cross-sector collaboration required to build healthier, more sustainable cities. During New York Climate Week 2023, we co-convened a high-level roundtable bringing together 26 senior leaders from organisations operating at the intersection of climate, health and urban development, including the WHO, Lancet Countdown, C40 Cities, Wellcome Trust, Health Care Without Harm, and AstraZeneca.

The discussion explored innovative practices for making urban environments healthier and more climate-resilient, and examined what more is needed to ensure cities become "healthy by design." The event engaged a wide range of stakeholders around a preventative agenda, encouraging collaboration to better manage the health impacts of a changing climate on urban populations.

COP28 and the Launch of the First Healthy and Resilient Cities Report

Also in 2023, Bupa and NFF launched the first Healthy and Resilient Cities white paper at the 28th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) COP28, in partnership with the Lancet Countdown and C40 Cities. Drawing on data from the 2023 Lancet Countdown on Health and Climate Change, the paper is designed to support mayors and their teams, urban planners, architects, engineers, health practitioners, government ministries, community organisations and the private sector in accelerating urban action to address climate change and its growing health impacts.

Norman Foster Institute

The white paper was unveiled during a special event coinciding with COP's first-ever 'Health Day'. Co-hosted by Nigel Sullivan, Chief Sustainability Officer at Bupa, and Lord Norman Foster, the event gathered city leaders, academics, healthcare professionals, public health experts and funders.

Attendees included representatives from the Mayor of Dhaka North, the Deputy Mayor of Barcelona, WHO, Seed Global Health, Lancet Countdown, Wellcome Trust, the World Economic Forum, Holcim, the Clean Air Fund, Reckitt, Bayer and the London School of Hygiene and Tropical Medicine.

2024: Continued Momentum and Public Engagement

Second Edition of the Healthy and Climate-Resilient Cities Report

In 2024, we co-launched the second edition of the Healthy and Climate-Resilient Cities report with C40 Cities. This edition built on the foundation of the first report, outlining what is needed to help the next generation of city leaders and urban designers create new urban models that place health at the centre of design—supporting communities to thrive despite a changing climate.

Healthy Cities Documentary

Bupa also launched the Healthy Cities documentary in 2024, exploring the complex connections between climate, health and urban living. Featuring insights from leading urbanists, academics and thought-leaders - including Lord Norman Foster - the film highlights the power of collaboration and showcases how Bupa is partnering globally to help make cities healthier. The documentary aims to inspire broad public engagement in a movement for healthier, more sustainable urban futures and has been viewed more than 3 million times to date.

New York Climate Week 2023
Source © Bupa.

COP28 - Launch of Healthy and Resilient Cities Report
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COP28 - Launch of Healthy and Resilient Cities Report
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7. Acknowledgements

NFI Centre for City Science
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NFI Student Review
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We extend our deepest gratitude to Bupa, whose visionary support has been instrumental in advancing the NFI mission to integrate public health into the design and transformation of cities and the built environment.

This partnership has enabled a pioneering exploration of how the built environment directly affects physical, mental and social well-being. Through Bupa's commitment to preventive health, research excellence, and system-wide change, we have been able to embed health as a central theme in the NFI's educational programme, research agenda, and city-specific collaborations.

Together, we have supported a new generation of urban practitioners who are not only equipped with the tools to address complex spatial challenges, but who also understand the importance of equity, mental health and community well-being in sustainable urban development. From co-developing academic content and analytical tools to launching new platforms for interdisciplinary dialogue, such as the annual Health Week in Madrid, Bupa's contribution has gone far beyond patronage. It has helped shape a long-term vision in which health and the city are treated as inseparable and interdependent.

With Bupa's partnership, we look forward to expanding this vision globally, empowering cities to deliver healthier environments for future generations.

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on Sustainable Cities