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Outstitutions: Designing learning spaces beyond the classroom

Outstitutions: Designing learning spaces beyond the classroom

Atelier de recherche 2024-2025

TYPOLOGIES

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1 Introduction

1.1 Can nomadic and open-air architectural typologies offer a viable pedagogical alternative to the institutionalized school model in Belgium today?

Most schools are fixed, formal institutions, in terms of architecture and pedagogy. They are rooted in typologies that prioritize enclosure and control. The elements used are corridors that divide, fences that protect and classrooms that isolate children from their surroundings. These spatial features reflect a deeper assumption about what education is supposed to be; structured, standardized and centrally administered. Outdoor space is often minimal, for recreation or residual, and learning is still bounded by walls.

Nomadic and open-air typologies challenge the permanence of a school as an institution. They are a living proof that learning can happen outside, in motion or in response to context. They can be the beginning of new possibilities, such as a classroom in a forest clearing, a lesson on a floating deck, a discussion under the sky next to a field. These are not just utopias, these are pedagogical models that happened in the past.

1.2 Origin of the questioning

A school is a place of social encounters, where you should learn how to live in society. For me this part is what most of today's schools are missing. I grew up in a rural context, and my connection with nature was always strong. But I slowly lost that connection by the time I went to high school. What remained were my summer holidays, when I used to go to my grandparents, where I loved doing outdoor activities. My grandfather loved working with wood, and I always enjoyed helping him out, going to the woods and cut wood, then bringing it home and transforming it into pieces of furniture. I can say that these moments from my childhood made me interested in the art of building. In some of our occidental education system today, we can see more and more that children and young people have very little connection with nature or handcraft, which was also my case, so in my opinion reusing the open-air school concept seemed very relevant and helpful for a society that slowly loses these values.

By placing children for 12 years in a very strict and traditional architecture and forcing them to learn there for 8 hours a day, they lose some primordial values. We can see in the past architecture has a strong impact in the evolution of the children's temper, the way we design spaces can dictate the way we think. For example, let's take the auditoriums, we know by heart that we sit in rows, and one person speaks on the podium, imposing the fact that he speaks and the others listen, or the traditional classroom, where you sit at your desk where you write or read. Do we really need a traditional desk to be



Fig 1

Toronto's High Park Forest School was built to teach children with tuberculosis, but through the years it became a summer school for underprivileged children.

Image from City of Toronto Archives

able to learn, or can we use any other type of furniture or room. So, my question is, how can we use architecture to reconnect the pupil with nature? How can it become a tool to bring pupils outside to learn in and with nature? Can an outdoor classroom become a reason to go out in the wilderness more often?

1.3 How do we define a school today?

The word “school” has some intriguing roots, its etymology goes back to the ancient Greek world, where it originally meant “leisure” – to be more precise it meant a place for free time where you could pursue apprenticeship¹. In Japanese for example, the word for “school” is “gakuen”, which literally translates as “learning garden” or “garden of learning”²; these aspects capture a sense of natural growth in the educational process. Another similar term in German, “Kindergarten”, means “garden for children” and it suggests a nurturing place where children can grow in a natural way.

The Greeks played a crucial role in school evolution, since the character of Athenian life was based on commerce, it demanded a special attention to literacy, and because they had civic responsibilities, a minimum level of writing and reading was needed for citizenship. The ideal age for a child to start learning remained undefined, and only boys (pais) were placed under a trusted “slave” called “paidagogos” to be educated³. Later, a new occupation appeared in Athens, one of higher learning, called “sophistai”, derived from the word sophia which has more meanings: wisdom, skill or cleverness⁴; today we call them professors. These sophists used to travel from town to town looking for audience and of course charging a considerable amount of money for the classes. The locations they gave the classes are not specific, apart from amphitheaters or public markets.

So when did schools lose their original purpose?

The institutionalization of schools began in the late medieval times, when teenagers started doing most of the crimes in the big cities of Italy and they couldn’t punish them by sending them to prison. So a new institution emerged, the high school. Here the teenagers were kept under surveillance, using architectural means, the warden office was placed in the middle, and classrooms were placed on the sides, around a central courtyard in such a way that the principal or the teacher could watch over the students all the time. These types of plans didn’t change much over the time, and some of the schools today use the same system.

1 Liddell, Henry George; Scott, Robert. 2009 «σχολή». A Greek-English Lexicon

2 Tanabata the star festival, 2013

3 Bowen James, A History Of Western Education (Volumes 1, 2, 3), 80-81

4 Bowen James, A History Of Western Education (Volumes 1, 2, 3), 86-87



Fig 2

Image from Charles Doussault, 'A class in the open', wood engraving, approx. 1842.

2 State of art

2.1 The origin of schools

2.1.1 Colleges in medieval Europe

During the 13th century, hospitia⁵ were considered the first colleges, and the term and institution spread really fast among western cities in Europe. The early colleges were often in modest forms such as annexes to hospitals or religious houses. It is also known that in the beginning they only admitted privileged people, in small numbers. But later on, they evolved into powerful institutions, one that we still know is Collège de la Sorbonne founded around 1257, meant for theology students. With this new institution came another reform; compared to earlier models where students would attend classes in different locations, such as the teacher's residence, or public spaces, the situation began to reverse. In this institution the pedagogical community would join the students, the term «pedagogy» also referred to a group of pupils places under the authority of a teacher. At this point the students no longer needed to leave the institution, because they had lodging, food and all the instruction they needed, and so the closed nature of schools was reinforced, and accessibility became a problem. The initial goal of a social diverse student was forgotten and the main goal was the pursuit of knowledge. This resulted in the emerging of the boarding school model.

The college became an institution isolated from the city life, with constant surveillance of the students.⁶ They were intentionally built away from everyday distractions and temptations, where their behavior can be governed by the environment they are in. The total institutionalization raised problems, because its isolated nature it didn't affect only the student, but the teacher and the teaching. The student is cut off from the rest of the world; spiritually and materially, living behind walls that become his new horizon, a horizon that he can't cross. The community that was imagined earlier was totally changed in the 19th century, when the supervisors became harsh and were often referred as «pions», and became a sort of prison ruled by a bureaucratic staff.

⁵ “...charitable individuals had the idea of founding establishments where a certain number of poor students would be housed and supported free of charge, through a perpetual endowment allocated to the institution.”

Durkheim, Émile. *L'Évolution pédagogique en France*. Paris: Presses Universitaires de France, 1938

⁶ “Those who wish to accomplish such a work must choose a location that is elevated or at least well exposed, far enough from the city's houses. The great treasure of acquiring knowledge grows best in retreat, silence, stability, and peace of mind.” -A symbolic text from the early 16th century



Fig 3

14th-century image of a university lecture
Image from Wikipedia, the free encyclopedia

2.1.2 The Jesuit Pedagogy

The Jesuits played the most important role in reshaping the western educational systems.⁷ The society of Jesus, was founded in 1549 as a missionary and religious order, but it evolved very fast into one of the most powerful educational organizations of the early modern era. Their strategy was clear, education was considered a mean of spiritual and social control, knowledge was power, and the power must be controlled by the church, and schools were not only places of learning, but a tool to prevent heresy, ignorance and rebellion. This was the point where school became a machine meant to change an individual morally.

In the beginning of the 18th century, after the Jesuit model of education that was admired for its values, began to be criticised from different directions, such as the Enlightenment's philosophers and reformers, who saw the Jesuit model as being too rigid, and it was hostile to critical thinking. At the same time it suppressed the intellectual autonomy, which was very prized by the Enlightenment thinkers. Voltaire also accused the Jesuit model of indoctrination rather than instruction.⁸ The Jesuit school also faced state repression in countries such as Portugal, France and Spain, and eventually Pope Clement XIV suppressed the Society in 1773. This repression occurred because they were wielding too much political influence, their loyalty towards the Papal authority started to decline, and their schools were too exclusive and focused on elites. It was thought that they were using education to build a religious and political empire.

But despite their purpose, the educational framework that was established by the Jesuits lived on, and many features from their model helped in shaping the modern secondary education, even in countries where religious orders had been forbidden. Some of the features include: public rankings and examinations, strict time discipline, the system of punishments and rewards, the teacher as moral authority and the most important, the notion of the school as being a complete environment for student formation.⁹

So as the Jesuit school was slowly replaced or transformed, secular education systems gradually took their place. These new models took the organizational strength and reoriented them toward a civic goal, rather than religious indoctrination. The Christian morality was replaced with national identity, and in this case the state became the church, and the teacher replaced the priest. This model was not meant to create an obedient, but a rational citizen, and their final reward wasn't salvation, but national progress. This transformation, was the beginning of the modern public school system. Notably we can see this example in countries like France, during the Third Republic, between 1870 and 1940.

7 Vienne, Philippe. Aspects socio-historiques, psychologiques, culturels et éthiques de l'enseignement, Socio-histoire des systèmes d'enseignement, ULB

8 Vienne, Philippe. Aspects socio-historiques, psychologiques, culturels et éthiques de l'enseignement, Socio-histoire des systèmes d'enseignement, ULB

9 "The methods survive, even when their original religious purposes are forgotten" Durkheim, Émile. *L'Évolution pédagogique en France*. Paris: Presses Universitaires de France, 1938



Fig 4

La Liberté guidant le peuple

Image from Eugène Delacroix - photo Shonagon 2024-05-02

2.1.3 A new educational paradigm

A new school model was born during the late 18th century and 19th century, especially after the French Revolution, the moment when the universal education became political and moral objective. This model was no longer tied to the church but to the state authority. This system treated the school as an public administration matter and it was the state's responsibility to provide basic education to all citizens. This logic was reversed compared to the traditional system where wealthy people founded schools for poor students. This led to the idea of equality, thanks to the Enlightenment movement, and the principle that every child should have access to the same kind of schooling as wealthier children. This revolutionary idea marked a new beginning after centuries of selective and class-based education.

These new ideas and principles also changed the architecture of schooling, to reflect its new function. There was no need anymore for monastic or aristocratic architecture, and the schools became rationalized, with spaces designed to supervise a large number of pupils, optimize their instruction and create a standard behavior. The layout of classrooms became clear and uniform in size, and the location of schools moved from the outskirts to the heart of towns, becoming a symbol of public and civic function. The administration of schools also evolved, the schedules were much more organized, bell system were also implemented, and a graded curricula replaced the older model used in Jesuit schools. The pedagogical community became civil servants, and they were trained in institutions own by the state. They were also expected to serve national goals instead of spiritual ones. From Durkheim's sociological perspective, the modern school functions as a moral institution. Its role being to socialize children into the values of the state, to shape them into citizens and improve the social status through culture and knowledge. He also criticized religious schools because they oriented students toward the after life, unlike the new schools that aimed to encourage the obedience towards the law, promote economic productivity and create a rational citizen. He also calls the new school "the Republic's church"¹⁰.

This new system brought some new contradictions, despite the idea of equality, schools often created new class hierarchies, especially through the separation of students into vocational or academic paths. And although the modern school was meant to liberate the children, they created a new barrier through architecture, becoming sites of surveillance, ranking and exclusion. This created tensions and raised questions: does education serve the democratic system, or does it reinforce the social discipline? Are students only being shaped to fit in the roles of a capitalist economy?

2.1.4 The duality of the modern school

The new system had been divided in two, although it was often celebrated for its universalism: one school for the elite, that was preparing students for university, intellectual professions and of course the positions of power; and the other one for the middle and low classes, focused only on basic instruction, social discipline and vocational

¹⁰Durkheim, Émile. *L'Évolution pédagogique en France*. Paris: Presses Universitaires de France, 1938

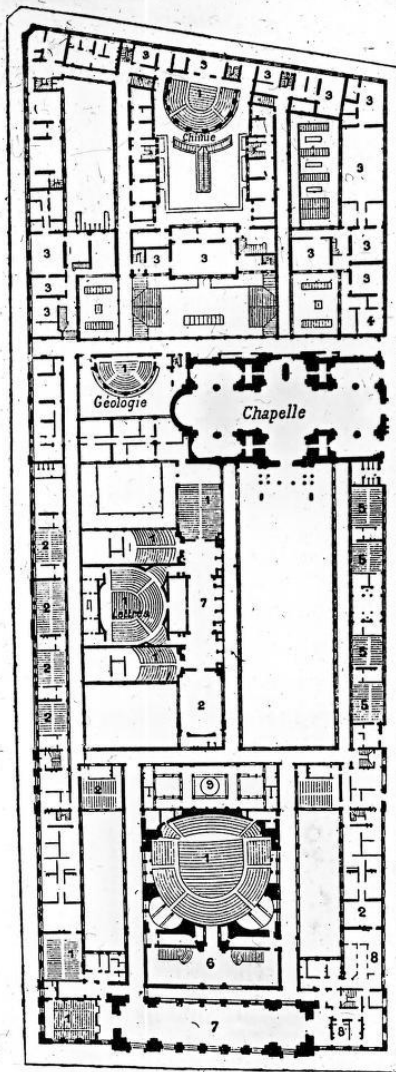


Fig. 666. — La Nouvelle Sorbonne. Plan du rez-de-chaussée.

1, amphithéâtres. — 2, salles de cours et de conférences. — 3, laboratoires. — 4, bibliothèques. — 5, salles de baccalauréat. 6, grand escalier. — 7, vestibule. — 8, administration et personnel. — 9, salles des autorités.

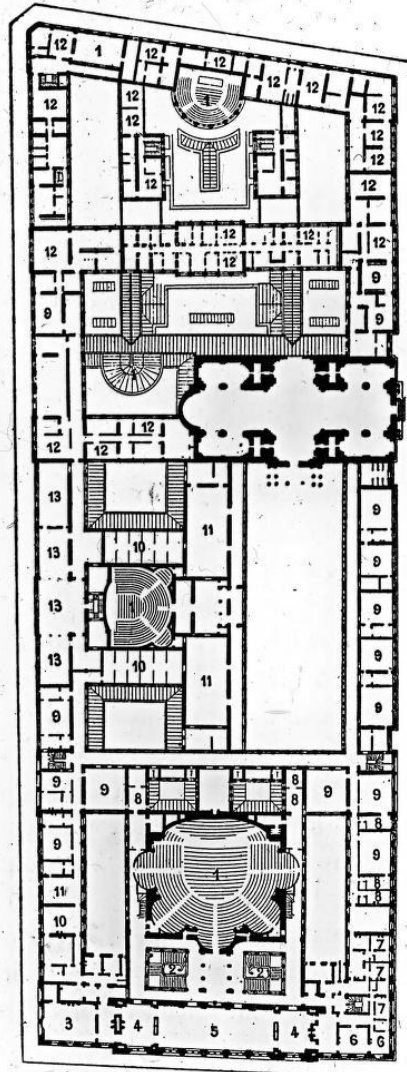


Fig. 667. — La Nouvelle Sorbonne. Plan du premier étage.

1, amphithéâtres. — 2, grand escalier. — 3-4, salles de commissions. — 5, salle du conseil académique. — 6, salons. — 7, chambres. — 8, cabinets. — 9, salles de conférences. — 10, Bibliothèques. — 11, salle de lecture. — 12, laboratoires. — 13, collections.

Fig 5

Floor plans of the Nouvelle Sorbonne, Paris

Image from Archimaps

preparation. These two divisions are also known as secondary education (or Lycée) , as a direct descendant from the colleges; and primary education (or École primaire), a newly created institution for the masses, often considered as inferior. Although they were both part of the public school system, there were big differences in the curricula, the teachers, pedagogical styles and social functions.¹¹

There were attempts into unifying the school system during the 20th century, and the goals were to create a comprehensive school model that was equal for all children, and to abolish the division between primary and secondary education. Also early school decisions wouldn't permanently affect children's futures. But often these reforms ran into resistance from politics, middle and higher class parents and traditionalists, who didn't want to lower the standards in all of the schools.

2.1.5 The school for the people

During the 20th century, and especially after the Second World War, there was a sudden expansion of education in Europe, often referred to as «mass schooling». This was a key point in history, when education nearly became universal. A large number of children from lower classes could enter schools that were once reserved only for the elites. The states started to increase their investment in education systems. These were also driven by democratic ideals, and of course economics, because the industrial societies needed much more skilled workers. This mass schooling did not only represent a growth in the number of students, but also a transformation of the entire educational system, from curricula to infrastructure to pedagogy. In countries like France, the republican ideology placed the school as key to liberty, equality and fraternity; some of the reform slogans promised “school for all”, “education without exclusion” and “equal opportunity through effort”.¹² But despite these promises, mass education still preserved inequalities, the most prestigious schools still remained hard to access for lower class children, social background still mattered, and so schooling remained a mechanism of social reproduction. This resulted in a crisis of mass education, which resulted in dropouts among working class students, a rise in dissatisfaction among teacher, and a growing inequality, especially in rural, urban or areas with immigrants. So the next question was, what kind of education is suitable for a pluralistic society?

2.1.6 Challenging the traditional school

During the 20th century, in response to the limits and problems of mass education, we can see the rise of numerous alternative educational movements. These movements not only aimed to reform the basics of schooling, in terms of organization, goals, and relationship to the state; but to transform or even replace with new models based on autonomy, cooperation, creativity and individuality of each pupil. A great effort

11 Vienne, Philippe. Aspects socio-historiques, psychologiques, culturels et éthiques de l'enseignement, Socio-histoire des systèmes d'enseignement, ULB

12 Vienne, Philippe. Aspects socio-historiques, psychologiques, culturels et éthiques de l'enseignement, Socio-histoire des systèmes d'enseignement, ULB



Fig 6

A school from the 20th century

Image from Ajuntament de Girona / CRDI, PD via Europeana.

is the New Education Movement (Éducation nouvelle)¹³ because it rejected the principle of passive listening, and place an emphasis on learning by doing, or doing activities, it believed in the child's natural curiosity and the importance of the environment in the motivation. Some key figures in this movement are: Maria Montessori, with the emphasis on eutonomy and sensory development; Célestin Freinet who encouraged cooperative learning. These figures developed pedagogical methods that still influence the education today. The alternative education started taking form in new institutions, like the Freinet schools, Montessori schools, open classrooms, or more informal in homeschooling movements or community-based learning. But despite the promises that alternative schools made, they faced other problems, because they often remained accessible only to privileged pupils, and they often fail to serve entire population, so it becomes a problem of scale.

Starting with the 21st century, education systems faced again a fundamental crisis of meaning and legitimacy.¹⁴ This "institutional program" that once gave coherence to the school does not evolve with the society. After multiple reforms, we can see that the architecture didn't change in many cases, and schools sustained the same institutional logics of enclosure, fixity and surveillance. Maybe this model also needs to be reimagined. Moving forward in time, we face another sensitive problem in 2019, the digital turn and the disappearance of the classroom. After the COVID pandemic, we witnessed an acceleration towards digital schooling, where the physical presence wasn't required. This only deepens inequalities in access to devices, a quiet place or social environment. And it raises another important question: what kind of space is necessary for meaningful learning?

2.2 Why are schools important

Education has without a doubt the biggest influence in building a sustainable society. The kids start learning from a very young age, to speak, read, write, calculate and how to craft with their hands. All of these contribute to their personality. Being detached from nature and from the ways of crafting with your hands, may have a strong impact on your evolution. I like to think that a school isn't formed of a building or a space, but of students and teachers, and I would like to explore ways of how architecture can become a link between nature and education.

A concept that raised my curiosity is the open-air learning environments, an idea that took place in the beginning of the 20th century, as a response to the quick spread of tuberculosis. This made different schools to open physically and pedagogically to nature. Today, we can see some educators that try to rethink this institutional model by turning their attention outward, literally. Such examples are the nomad schools or forest schooling.¹⁵

¹³ Palmer, Joy A.. Fifty Modern Thinkers on Education: From Piaget to the Present

¹⁴ Dubet, François. Le déclin de l'institution (2002)

¹⁵ Forest School Association. "What is Forest School?" <https://forestschoolassociation.org/>



Fig 7

School reform: A vocational classroom

Image from *Révolution Ecole* (1918-1939) (Docu-Reportage)

I am seeking to revive and reimagine this tradition from over a century ago, the concept called “the open-air school”. This school typology has many forms, that offer alternatives to the traditional classroom “box”; whether they are pavilions, glass-walled classrooms or mobile units. These revolutionary schools show the first trials of bringing the education back into dialogue with nature.

2.3 Open-air schools pedagogy, a sanitary matter

The movement of Open-air schools, originates in Germany with the first school being opened in 1904, in the suburbs of Berlin. The “open-air-recovery school in Charlottenburg. The founders were looking for methods to teach and cure sick children at the same time. Their inspiration came from the open air sanatoriums built in the same period. The new type of school was targeting backward and physically debilitated children who were excluded from the regular school. It was thought that if the children were sent to sanatoriums, their physical condition would improve, but they would fall back on school work, and it would be the opposite if they would have been kept in regular schools.

This is where the concept of open-air schools became the solution. This new typology was based on outdoor life, good food, hygiene, and reduced school work¹⁶. After the first three months of being open, a report was published and the desire to found similar schools was spread across Germany¹⁷. In this report, the children who attended the open-air school increased in weight and strength, and those who suffered from anemia and other diseases, were cured entirely. But these results weren’t very surprising, since it was nothing new. The best treatment of sanatoriums were the ones combined with outdoor life. The strong impact was the fact that the patients who were benefiting from this new concept were growing children. But that was not the only surprise, because the children who returned to regular schools, appeared to not fall back on their studies, but the contrary, some of them were even more advanced than the children of the regular school.

From the benefits of these reports, the authorities of other cities started building these open-air schools or open air classrooms. After three years of success in Germany, the concept spread to England, so in 1907 the first school was opened in London, and the results were as good as the ones from Germany. These results grew very fast and soon towns and cities all over Great Britain started to build these types of schools. And by the year of 1908, the movement spread to the United States with the first school after the Charlottenburg model, was built in the city of Providence in Rhode Island. Although there are records of another experimental building on American ground, more specific in Puerto Rico, in the year of 1904. The school in cause could accommodate one hundred children, it had a floor and a roof, but no walls, with Venetian blinds to keep out the driving rain and direct sunlight. This school was a statement that the treatment

¹⁶ Ayres P. Leonard, 1910, Open-Air Schools,

¹⁷ Ayres P. Leonard, 1910, Open-Air Schools

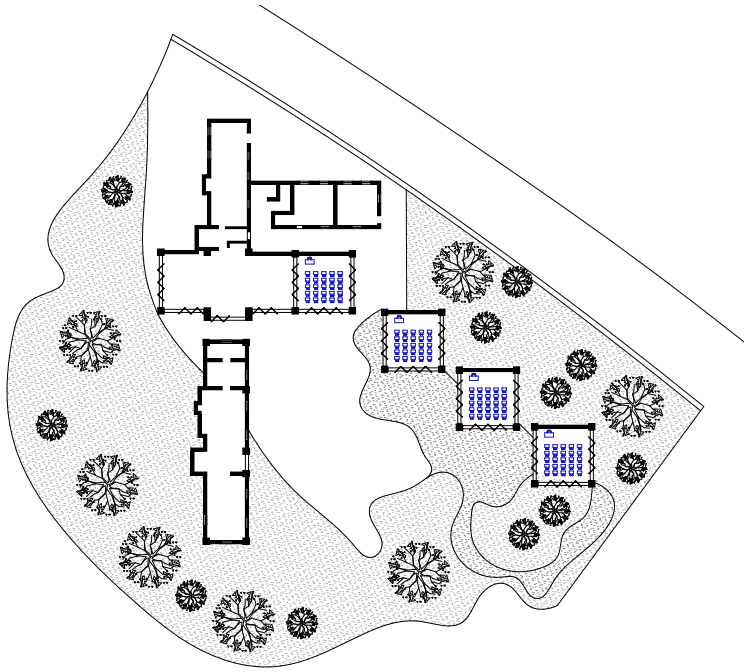


Fig 8

Floor plan of the open-air School of Uffculme, Birmingham United Kingdom

Image from personal archive

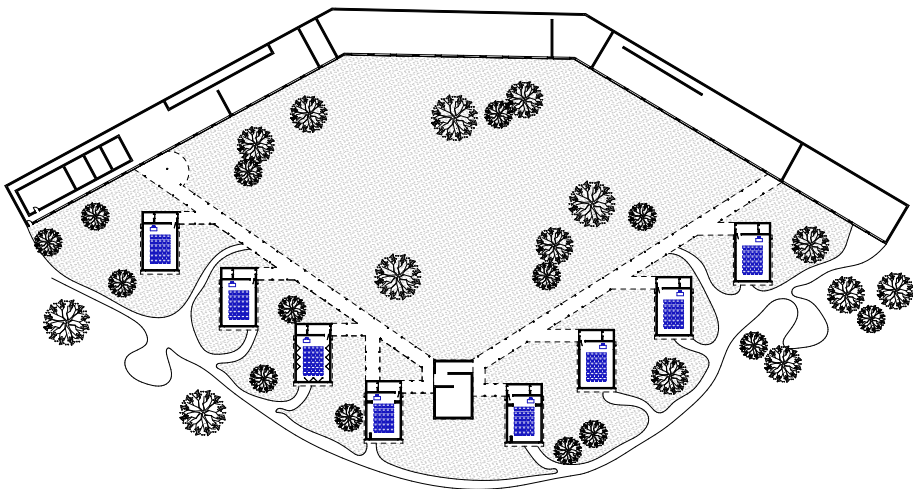


Fig 9

Floor plan of the open-air School of Suresnes, Paris France

Image from personal archive

which showed beneficial for the weak and sick children, can also be beneficial for normal children. The reports show that children preferred the outdoor classes, and also a lot of request from teachers to be assigned to these types of outdoor classes¹⁸.

Going back to the United States, we can see a few establishments open in New York and Chicago, where we can see the transition from experimental to a new feature of school. The authorities demanded that every new school should include at least one open-air classroom, and the existing schools to convert one classroom to be used as an open-air one. At that time, it was said that the two greatest discoveries were the value of children and the virtues of an open-air life. But its success slowly faded away, as the introduction of antibiotics came into play. But looking back to it, it is not recognized only as a therapeutic agent, but a step forward to future schools, where you don't have to be tuberculous or feeble-minded to enjoy this type of educational opportunity.

2.4 A catalogue of open-air schools

To have a better understanding of this typology, I selected a series of architectural case studies that illustrate how the traditional classrooms have progressively opened towards the outdoors, not only in terms of spatiality and materiality but also pedagogically. These examples reflect the evolution of the interests about health, autonomy and environmental awareness of students, and reveal how architecture can shape the educational experience by removing the limits between interior and exterior.

One of the earliest examples of an open-air school in Europe, took place in the United Kingdom, in 1911. The design is quite simple, and it features freestanding pavilions arranged along a landscaped garden and a main building with the canteen and other amenities. Each pavilion represents a classroom with three walls that can open almost entirely, exposing the space to light and air. The pavilions had a brick structure with timber roofing, and the walls opened using a system of folding doors. The school has a total surface of approximately 2000 square meters, and could host maximum 100 students. Pedagogically, this school reflects a mixed vision of medicine and education, with a focus on rest, fresh air, and sunlight as part of the curriculum. It is a model where architecture becomes therapeutic.

Another similar approach is built in 1935, near Paris. The *École de plein air de Suresnes*, was designed by Eugène Beaudouin and Marcel Lods. This school represents a modernist interpretation of the open-air concept, with pavilion like classrooms, separated from the main building, where all the sanitary blocks, dormitories and administration is housed. Each classroom is composed of two volumes, one containing the toilets and storage, and the other enclosed by foldable doors, that can be fully open to the outside. This ensured a full exposure to the environment during lessons, allowing the desks to be moved under the terraces or even the nearby trees. Circulation between classes and the main building occurred outdoors along external covered walkways. These architectural features, aligned with Freinet and Montessori pedagogy, created a revolutionary model.

¹⁸ Ayres P. Leonard, 1910, *Open-Air Schools*

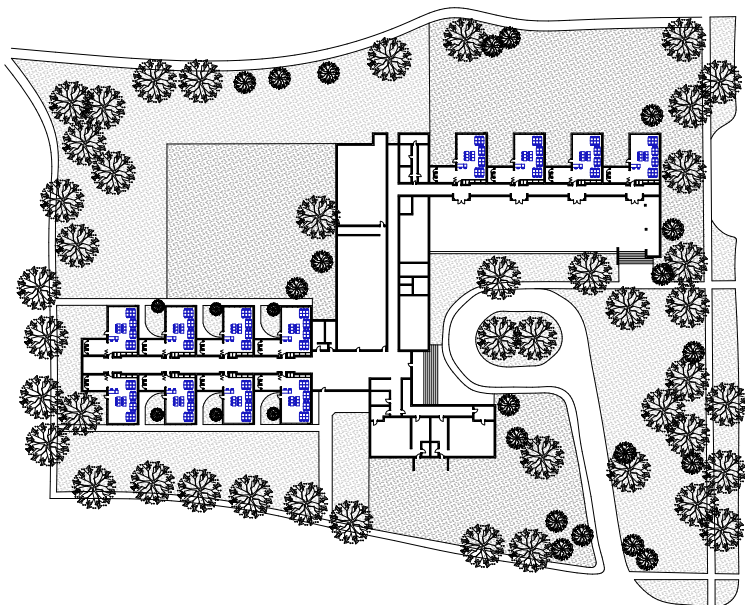


Fig 10

Floor plan of the open-air School of Crow Island, Illinois USA

Image from personal archive

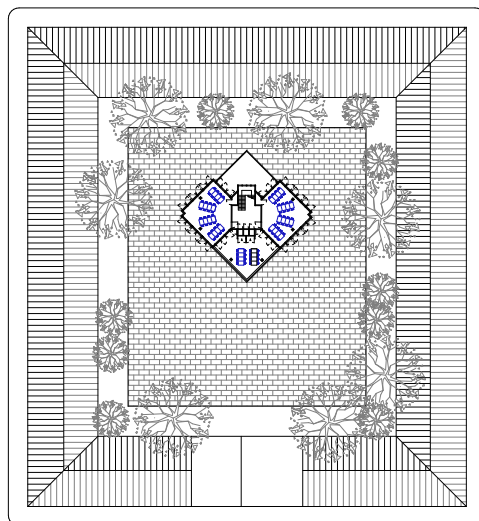


Fig 11

Floor plan of the open-air school from Amsterdam, Netherlands

Image from personal archive

Although it had its period of glory, today the school became a museum, and the concept was never pursued.

In the United States of America in the state of Illinois, in the 1940 the Crow Island School emerged. Perkins, Wheeler & Will with Eliel and Eero Saarinen designed a new type of learning environment. One that is child-scaled, modular and community centered. Each classroom includes a workshop space that can open at anytime via a folding door, as well as direct access to a private courtyard. These features allowed the classroom to expand, contract and connect to the outdoors, creating a flexible pedagogy. These features support experimental, hands-on learning and individual development. It is a perfect example of how architecture influences school activities by dissolving the traditional, singular classroom “box”.

The Open-air School from Amsterdam, built in 1930, represents a different approach by the architect Jan Duiker and Bernard Bijvoet. It is located in a dense residential neighborhood, and the concept of open-air is reinterpreted vertically. It is built on a limited 50 by 50 meter plot, and the building consists of two blocks, one that is a service core facing the street, and a stacked classroom block within a residential courtyard. Each floor has two classrooms, connected by a shared balcony. The façades are entirely glazed, offering a 360 degree light and ventilation, that transforms it into a glass cabinet, as Duiker calls it. The balconies serve as semi-private outdoor extension for each classroom, where different activities occur, such as playing, reading or resting. Despite being placed in a urban context, this school maintains the main goals of open-air schools.

The most recent example is from 2013, designed by NLÉ Architects in Lagos. The project of Makoko Floating School, pushes the boundaries of what an open-air school can be. It is an A-frame structure with three levels that floats on a lagoon. This approach helped the community’s need for resilience against flooding. The first and third levels serve as open-air platforms for playing and gathering, while the middle level is composed by 4 classrooms. Unfortunately the project got destroyed by a storm in 2016, but it stil remains a powerful symbol of spatial innovation and education used as a social infrastructure.

These open-air school show that architecture can be more than a shelter, and it can shape pedagogy. In the 20th century they responded to health crises, and now they can serve as blueprints for a broader education reform. Their legacy can inspire today’s need to reconnect learning with the environment, a principle that find new relevance in Belgium’s recent experiment in nomadic education.

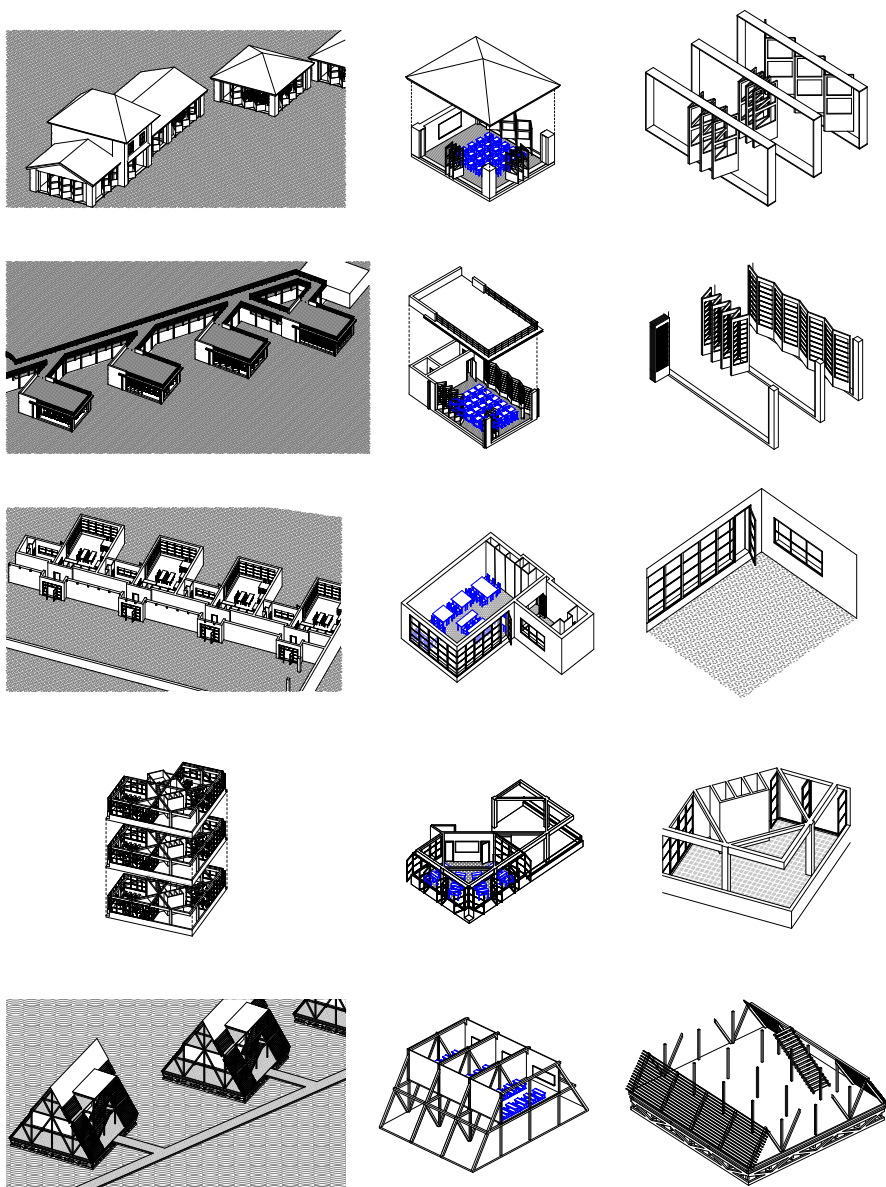


Fig 12
Catalogue of elements from open-air schools
Image from personal archive

3 A new pedagogy in Belgium

3.1 Le Lycée Voyageur, a school inside a bus

The story of “Le Lycée Voyageur” starts from Marie De Muijlder’s dreams of building a nomad school. As a kid growing up in Belgium, she used to go on flat-bottom boat trips every year visiting Flanders for a week. For her it was the best week of the year, remembering the feeling of being nomadic with joy. After her studies she decided to attend a training course about Freinet pedagogy, so she could pursue her dream of founding a nomadic school.

This school idea of a bus that travels across Wallonia to provide lessons to students every day, is a unique project in Belgium. It is an alternative education system, based on the concept of the “outside school”. This trial of an alternative pedagogy, of an outdoor school, is often chosen by those students and teachers alike, who do not find their place in the traditional system. An alternative pedagogy is open to everyone, although it is intended to welcome people with a neuro-difference: dyslexia, dysphasia. The school consists of a number between 15-20 students, with different ages, and it is intended to be a secondary school type. Instead of attending the traditional class in an auditorium or classroom, the students of the Lycée Voyageur board a bus to a location in Wallonia, which will be their classroom. Every day is different, and each “classroom” is meticulously chosen, according to projects and themes to fit the student’s curriculum. Priority is given to the field, to the experiences, and it doesn’t follow the traditional methods, without assessments or timetable. Although it looks like a perfect example, it is still very experimental¹⁹.

3.1.1 Origins of the idea

The main inspiration for the school bus came from Denmark, from the “DNS” which is an abbreviation for “Det Nødvendige Seminarium” which translates to “The Necessary Teacher Training College”. Common ideas such as alternative pedagogy and worldwide travels brought together a group of people with a lot of ambition and ideas. Because it was the late 1960s, the hippie movement was also very common in the north of Europe at the time, and the Danish government was known to finance small communities and organisations such as DNS. So with the help of the state they founded the Necessary Teacher Training College in 1972, on a farming property called Tvind. The idea was a success, since the first teachers had truly innovative ideas on pedagogy. They wanted to make the students meet other people and learn from the encounters. They were also aiming to make them more aware of the contemporary problems and be able to take position; According to their methodology: “It is necessary to train progressive

¹⁹ Interview with Marie De Muijlder’



Fig 13

The model of the transformed school bus from Le Lycée Voyageur
Image from Marie De Muijlder's archive



Fig 14

“Travelling in own buses has always been an important element in the DNS education.”
Image from DNS archive

personalities who are able to understand and respond to the many challenges of our times”²⁰

3.1.2 The making of

In the beginning “Le Lycee voyageur” was a simple VanHool coach bus, but with the help of Anatole Edelsztein, the bus was taken to the next level. Anatole was a student in industrial design when the school bus was one year old. He was hitchhiking when he stumbled across Marie. He collaborated with the school for almost a year, because he wanted to do his master thesis on the reconversion of the bus. So he was observing really no need to go at the line close how the students organize their stuff in the buss, and how can he improve this in his redesign of the bus. He tried to transform the bus in such a manner that its modularity willcould allow future buses to be built with ease. The bus consist of 5 zones: starting at the very back of the bus, the chilling area which consist of two couches facing each other; then comes a meeting area, where students can learn, write, or even eat; the storage is placed at the middle of the bus, facing the door and the rebuilt toilet, so the students would deposit all their stuff when entering the bus; then comes the seating area, which can transform into beds; and at the front of the bus, right behind the driver, the teacher’s desk; the front door serving only the teacher and the driver. Anatole’s girlfriend is a scenographer, and she worked meticulously with the students, to build the perfect space inside the bus.²¹

3.1.3 New challenges

Although the bus might seem to have everything, it was proven wrong. Marie and the students wanted to be dependent on a “safe place”. In the first months the students showed a lot of interest in traveling and being nomadic, they wanted to engage in social activities, meet new people, work on the field. But after a while they started showing interest in normal classes too. They were wondering how would they pass exams if they had no real class. Marie did not want to force them to learn mathematics or sciences from the beginning, she wanted their motivation to come from the inside. So after the kids demanded to learn the traditional classes as well, she started looking for ways to bring different teachers and look for classrooms to give lectures to the students.. Yes the bus was already transformed into a classroom, but it turned out that the students did not like taking classes in the bus, instead they used the bus to sleep inside, cook, or relax. They preferred classes outside, but when it was about studying for exams, they always asked for a quiet place. In the beginning they were having classes in the living rooms that some of the participants’ parents were sharing with them; after a while they rented a house, but it was shortly cut off since they had no funds. The best solution was to take classes in libraries.

20 “About DNS”. DNS The Necessary Teacher Training College. 2020

21 Interview with Anatole Edelsztein

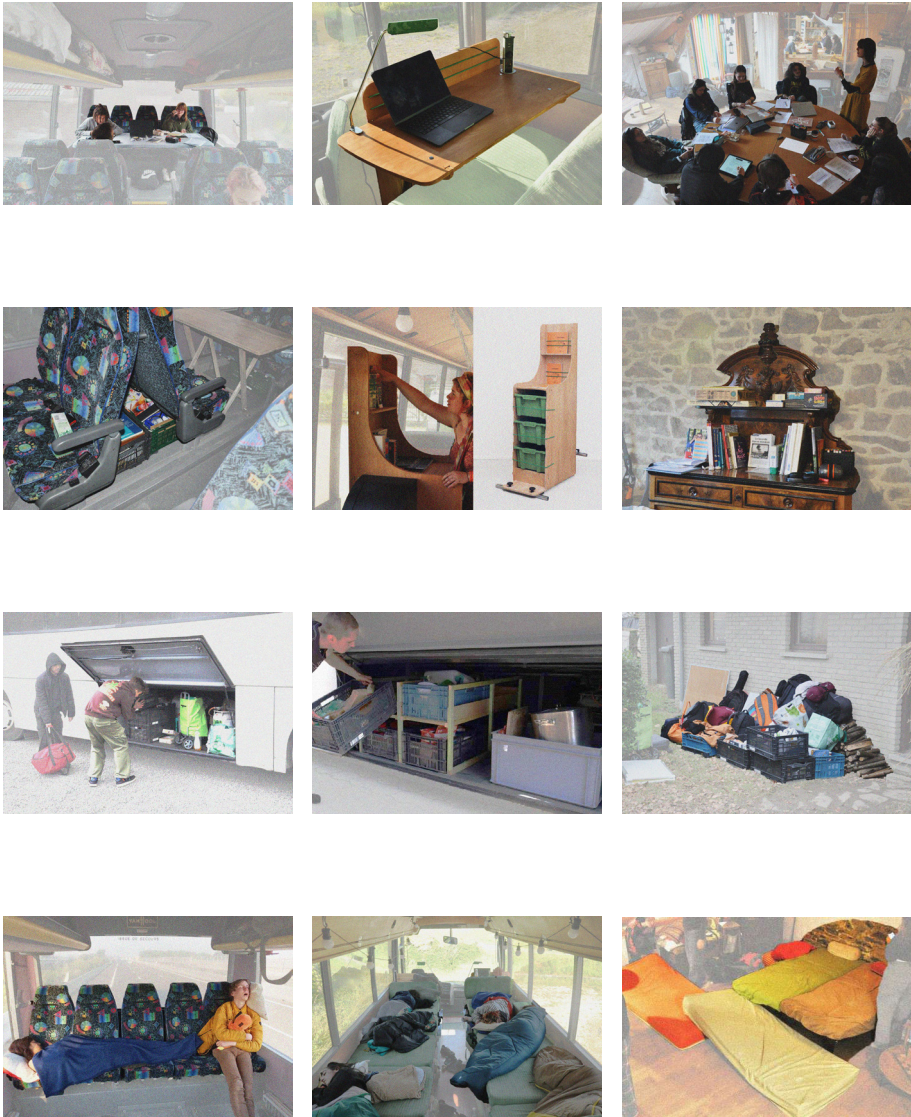


Fig 15
Lessons from Le Lycée Voyageur
Image from Anatole Edelsztein's master thesis

4 Designing spaces for outdoor learning

4.1 Project scenarios

After a few discussions with Marie, the best scenario for an architectural intervention would be creating a classroom that can temporarily host students from nomad schools. But the next question is where? And this is where the interesting part comes: the school bus is going to be sold to another school in Liege. This school is planning on having outdoor classes one or two days a week in addition to the normal classes. This way the school bus becomes a tool that makes pupils meet outside. Marie thinks that in a few years, Belgium will have multiple school buses, and they will adopt this outdoor teaching method. But as I said before, the school bus on its own is not enough, the kids need a safe place. So this is a great opportunity for me to think about ways to connect these schools to nature. Because of the experience of “Le lycée voyageur” I started to understand the needs of this type of school, and started to make a list of what they need. But a simple classroom is not enough, they need a place to cook, a place to eat, toilets, and sometimes bedrooms, because sometimes they are staying more than one day in a location. So the next question is: where should these classrooms in nature should be?

This led me to three possible scenarios: a permanent built classroom in nature, similar to a hunter’s hut in the forest, where nomad schools could stay for multiple days, and having outdoor classes; a floating classroom, taking the idea of the nomad school a step further, offering it the amenities and possibilities of having a mobile structure, with the option of anchoring to a specific place for a period of time; and lastly a scenario that combines the first two, a classroom next to water, where a dock becomes a multifunctional structure, that can be used as a classroom, or it can be used by the community.

4.1.1 Classroom in nature

In a forest clearing, inside Bois de la Houssière, students arrive on foot, with their hiking gear and heavy bags, following a narrow trail, lined with ferns and fallen branches. From a far they see a wooden structure, one that almost blends in with the landscape. There is no bell to signal the class, but instead of that, the class begins with observation of bird’s songs, air temperature, and the way sunlight cuts through the trees. After they climb down from the first level, or so I like to call it, the observation tower, they engage into other activities. The teacher adapts the program depending on the season: either mushroom picking in autumn, or planting flowers in the spring, or even drawing tree silhouettes in colder weather. Stackable stools and tables are pulled into a circle, and the class begins. The pupils don’t need many amenities in the forest, other than a compost toilet, with a rainwater tank to wash their hands and water plants nearby. This type of classroom tries to embed students into nature.

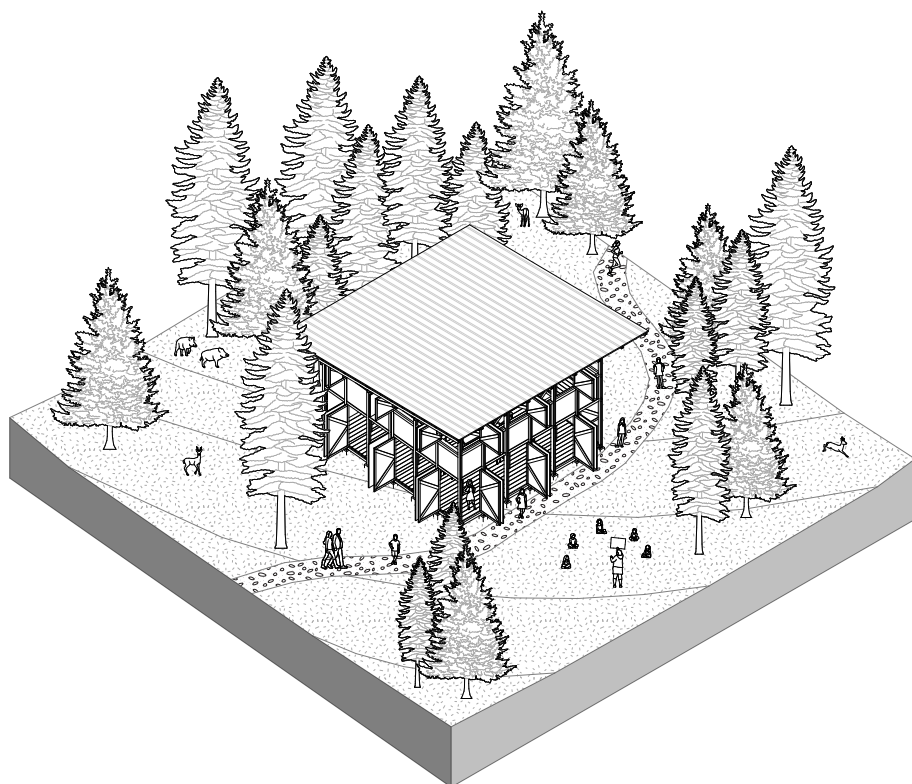


Fig 16

Axonometric view of the classroom in nature

Image from personal archive

4.1.2 Classroom by the water

Next to the canal, at the edge of a quiet dock, framed by reeds and a reflected sky, rises a structure that serves both as anchor and a threshold for a nomad school. The classroom by the water represents a basecamp for schools like Le Lycée Voyageur, where the school bus finds shelter, and the students transition between land and river. The idea of parking the bus inside comes from a constrain, where the law forces the bus to be stored in a closed environment, which at the moment Le Lycée Voyageur doesn't have. And so, the ground level function both as a garage where the bus can be parked directly inside the structure, and an open space for different activities when the bus is outside, or away on its journey. Next to the parked bus, a row of compact and efficient spaces support the school activities: such as a kitchenette, a compost toilet, and lots of storage. The ground floor has also the possibility to open to the outside, using a series of doors, converting the space into a generous covered terrace. The terrace becomes a gathering area, a place to cook, eat, discuss, or even shelter from the rain. The space is neither a house nor a shed, but it can adapt to the needs of a nomad school. Above the "garage", the first floor consists of a large open classroom, with 360 degrees semi-transparent facades, made of polycarbonate sheets that let in light from every direction. When the weather allows it, the facade completely opens, erasing the boundary between inside and outside. Here, the same modular furniture is used, light weighted and easy to rearrange for group work, circle discussions, moments of individual concentration, or even traditional classes. Outside, a short wooden path leads to the dock, where the other classroom waits. This type of water access extends the school's learning territory, and the students can step from the bus, to the classroom by the water, into the floating classroom, and from there into new landscapes along the canal. So the building acts as a hinge, a connection between land and water, a shelter for exploration, or a movement to pause.

4.1.3 Floating classroom

A "safe place" in motion is both a vehicle and a vessel, keeping the idea of a nomad school, but without losing its sense of home. This structure responds to a very specific need, the desire to learn while moving, with all the comfort and ryth that a stable classroom provides, without sacrificing the safety.

This idea emerged from the first interviews with Marie, the founder of Le Lycée Voyageur, who described the evolution of the bus from a transport vehicle into a mobile learning space. The size of the project was a direct link to the intial lessons that happened in the bus as it was in the beggining, cramped and improvised, and later from the bus that was converted into a real classroom by Anatole, with modular furniture, shelves, tables and beds. But it still lacked one thing that the students called "a safe place", a space that is open, and allows peaceful learning. The structure is composed of an open ground level that uses a system of sliding doors that makes it flexible and two platforms that serve as observation points. It can function as a classroom, a meeting area, a dining space or even a quiet room for reading or drawing. The spatial configuration is shaped by

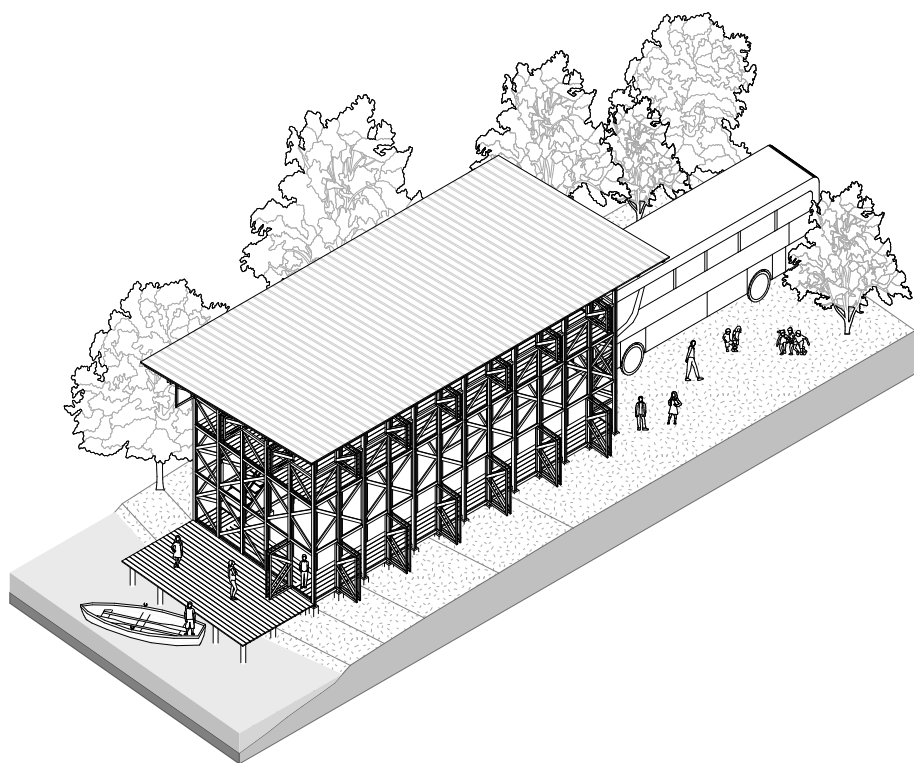


Fig 17

Axonometric view of the classroom by the water

Image from personal archive

their needs, with the most important one being the storage rooms and a permanent toilet, while the rest remains flexible. The furniture used is the same used in the other two classrooms. It can be also stacked and stored inside one of the storage rooms, thus the space becomes an open space for other activities or playing. The observation platforms are inspired by the students of Le Lycée Voyageur, from their desire to climb on top of the bus and observe the stars from there, and from one of their “temporary outdoor classroom”, a lookout in the forest. The structure of the classroom also responds to the movements of the water, it allows movements on both directions, and it can be adapted to multiple floating platforms. The floating systems can be on barrels, as we can see in the Floating school of Makoko, which in its nature is more demanding for maintenance because the wood is in contact with water. Another solution is on a large barge, offering more stability, but less visual and physical connection to the water, as it rises the structure way too much above water. And the last one is on two smaller boats, a catamaran style, resulted from the nature of the structure, which allows a better maneuverability.

The classroom travels between carefully chosen locations, identified mostly with the teachers and local authorities. Some locations are forest reserves, cultural sites, farms and riverbanks. At each stop, the classroom can dock for a day or more, becoming an soft intervention in the landscape it docks in. There, students can disembark to explore or work with the local communities, then the class can float on. This way it is not just a room on water, its a moving pedagogy, that ensures resilience, environmental awareness and collective adaptability. It teaches the children how to read the landscape as part of their education.

4.2 Mapping the territory

Looking closely at the trips the bus from Le lycée voyageur took, I noticed a lot of interest in the triangle area formed between Brussels, Mons and Charleroi. One of the main reasons is the nature that can be found along the canal in the south of Brussels. A couple of key locations in this area are the village of Feluy and Ronquieres. The students loved spending time in the nature in the proximity of these two villages. Another strong argument would be that a lot of alternative schools can be located in Mons and Brussels, and these types of outdoor classrooms could become a link to different schools from these cities. Even schools from other cities like Charleroi could easily access these types of classrooms. This way, it would be easier to access funds, and have the authorities involved. Le lycée voyageur struggled a lot with funds, because it was a private school and had a lot of problems with the regulations.

Working with Marie and two teachers from an outdoor primary school in Anderlues, we developed a map of key locations between Brussels, Mons, and Charleroi. This mapping process responds to a crucial requirement from authorities: for children to move safely, their destinations must be clearly defined.

Each stop on this map has been chosen based on its historical, cultural, or environmental value—places where learning extends beyond the classroom. These sites allow hands-on

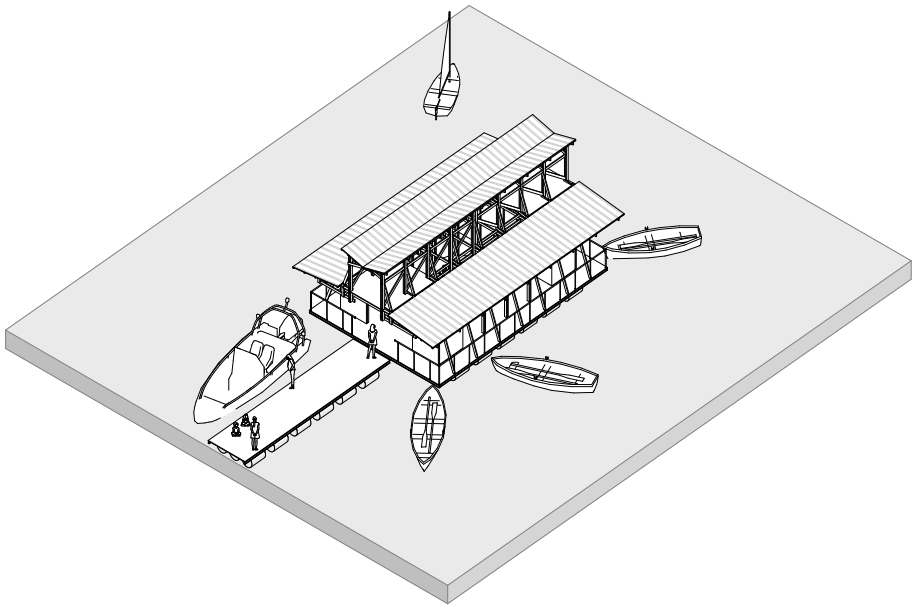


Fig 18

Axonometric view of the floating classroom

Image from personal archive

activities such as farming, cultivating, or hiking in the forest, integrating education with direct experiences in nature.

By structuring these locations, we create a balance between mobility and security, ensuring that the nomad school is not just a space in motion but a system of meaningful educational destinations. This study area is rich in ecological, cultural and also logistical assets. The triangle is also traversed by canals, forest belts and rural communities overlooked by mainstream infrastructure.

4.2.1 Forests and fields

These locations provide possible locations for the classroom in nature suitable for extended learning sessions in nature. For example Bois de la Houssière in Soignies, it has a strategic position that can be easily accessed by schools across the study area. On top of that it is a forest with well maintained trails and proximity to the Senne River. Near Ronquières there is another forest that can work well with the classroom by the water, to create a network.²² Moving to Braine-le-Comte, a dense, biodiverse forest with small streams and quiet clearings, represents an ideal water-related pedagogy for activities and group projects using natural materials. Adjacent to the Royal Museum of Mariemont, we can find the forest Bois de Mariemont, for the combined cultural exposure with direct access to a forest landscape. And lastly there is Hallerbos²³, famous for its spring bluebell flowers, ideal for calm outdoor lessons.

4.2.2 Next to the water sites

For a classroom near the water, that serves as a hinge between land and water learning, choosing a site must have a special meaning. Near the Château de Seneffe on the Brussels-Charleroi Canal, an ideal place that combines engineering heritage with tranquil water views, where history, ecology and water system lessons can be learned. The inclined plane from Ronquières, where students can observe the vertical boat lift and understand water management and industrial design. On the Old Canal Basin, Gordarville, along biking trails and rich flora and fauna. This place offers a quieter counterpart for a more monumental dock site. Another boat lift, this time the tallest one, Strepv-Thieu, represents already a landmark strongly anchored in the surrounding natural landscape. A more urban accessible site is at La Louvière. Positioned near schools and transport links, it supports structured outdoor activities without the need of long distance travel.

4.2.3 Floating classroom stops

The docking points for the floating classroom, must offer calm water for peaceful learning, easy to access shores for easy disembarking, and also natural landscapes or important landmarks. One site is located near the UNESCO listed historic boat lift, in Houdeng-Aimeries, this peaceful canal edge provides a safe and inspiring setting for this classroom. Another one, this time on the Brussels-Charleroi Canal, is Pont-à-Celles.

²² <https://www.ronquieres.org/au-fil-du-canal/le-bois-de-la-houssiere/>

²³ <https://www.hallerbos.be/en/>

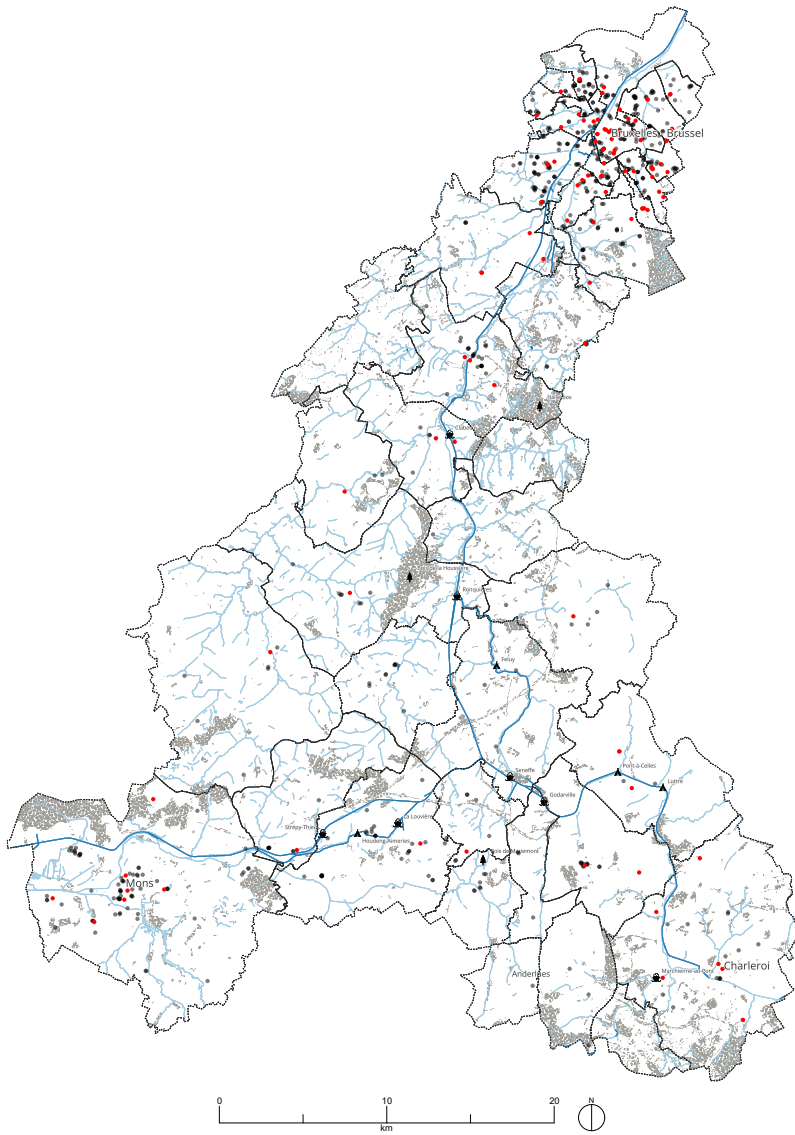


Fig 19
Map of the study area
Image from personal archive

A small and quiet village with access both to agriculture and water, ideal for combining classroom work with farming, food systems and ecological observation. Luttre, is positioned along a tranquil canal section, offering good water access and a quiet natural environment, suited for shorter landings and workshops. And the last location is Feluy, a location with low water traffic, which allows the classroom to dock safely. Because of its agricultural surroundings, it is also relevant with activities that involve food production and environmental science.

These are just a few locations, that Marie and I considered to be the most important, but this typology of classrooms is meant to create a network, and it is not designed to be sedentary for a long period of time. Whether they are situated in a forest clearing, at the edge of a dock or on water, the outdoor classrooms are designed to transform mobility into a method, and the environment into curriculum.

4.3 From school to landscape

Coming back to the question: Can nomadic and open-air architectural typologies offer a viable pedagogical alternative to the institutionalized school model in Belgium today? Through a historical analysis of schools, a deep investigation into open-air pedagogies and the fieldwork done with Le Lycée Voyageur, I have explored this question on different scales, from institutions to pavilions, from buses to floating classrooms. The result is a proposal for an educational model that is mobile, flexible and site responsive. The main goal was to create a sort of catalogue of projects that can create a network of outdoor schooling.

The “outstitution” challenge the enclosure of education, by repositioning learning in the landscape, by turning rivers, canals and river banks, forests and fields, into active pedagogical grounds. And by doing so, they reveal a possibility for schools to become what was once the goal, a place of freedom and experimentation. In this case, architecture is not just a background for pedagogy, it becomes pedagogy itself.



Fig 20

View from a forest classroom

Image from personal archive



Fig 21

View from a floating classroom

Image from personal archive

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TYPOLOGIES

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