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The 30-minute Repair Society

ESSAY

WRITTEN BY

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Abstract

This essay presents the 30-minute Repair Society, a comprehensive urban framework designed to revitalize repair culture and combat the throwaway mentality that has dominated since the 1960s. Drawing from historical repair traditions and contemporary circular economy principles, we propose a four-node ecosystem that makes repair accessible within a 30-minute timeframe for urban residents.

The transition from a repair-and-recycle society to our current waste-and-replace culture represents a fundamental shift in our relationship with objects—from "make it last" to "get anew." However, mounting ecological pressures demand a return to stewardship practices that maximize the energy captured in material objects. Unlike historical repair born from scarcity, our vision combines repair wisdom with modern convenience, creating infrastructure comparable to healthcare systems with layered, interconnected support.

The 30-minute Repair Society operates through four interconnected nodes: a National repair helpline enabling two-thirds of electronics repairs through video support; Regional spare part hubs addressing the primary barrier to successful repair; Local repair stations positioned within 15-minute city boundaries; and District specialty centres for complex interventions requiring advanced expertise. This distributed approach is measured through the Repair access per Kilometre (RAK) Index, quantifying repair service availability across urban areas, and the Return on Repair (RoR) formula, calculating value creation through repair over replacement.

Using Rotterdam as a case study, we demonstrate how 85 neighbourhood repair stations and 4 district specialty centres could serve the entire urban population. This vision transforms repair from individual problem-solving into cooperative and collective capability-building, positioning specialized repair zones as contemporary guilds that preserve material culture and resist planned obsolescence.

The framework offers a pathway toward "Proudly Repaired in Rotterdam"— a model for sustainable urban living that values stewardship over consumption.

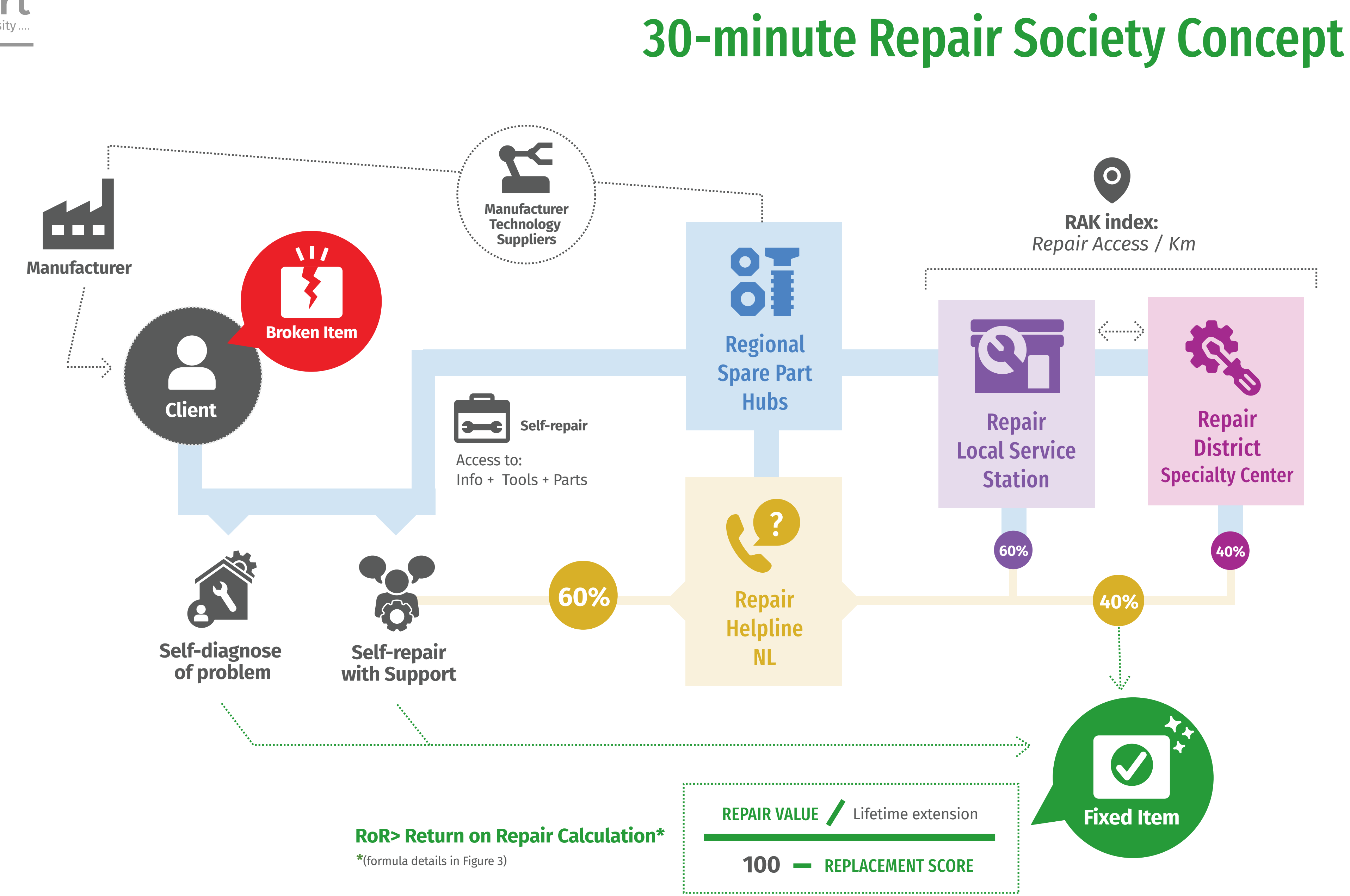

Figure 1: 30-minute Repair Society Concept

Introduction

To throw something away is to waste the energy invested in that product. When we treat an object as waste, we ultimately turn our back on natural resources and materials. Until the 1960's - 1970's, it was largely unimaginable to see something broken as worthless. Replacing something before it had fully achieved its purpose— not because of trends, new gadgets, or planned obsolescence— was uncommon, since consumers wouldn't knowingly buy products designed to fail. Recycling, repairing, refurbishing, remanufacturing, and reusing were all standard and preferred options over waste disposal.

However, this changed dramatically over the past half century, a time period in which we transitioned from a repair-and-recycle society to a waste-and-replace society. Cheap energy from seemingly abundant oil drove down resource prices, new materials and production techniques for plastic became affordable, which reduced consumer product costs and fuelled the growth of the waste management sector. Ultimately, this led to the rise of the throwaway culture and the decline of the repair culture. A mental shift hit society and shifted our relationship with objects from "make it last" to "get anew". When we entered the era of mass production and perceived abundance, we chose a path away from circularity, recycling and repair.

Historically, repair had always been an important and respected job category in society. A job category, consisting of hundreds of specialisations, organised in guilds and similar structures, and protected by city councils. Repairers and manufacturers have always had a difficult relationship, with manufacturers often actively trying to obstruct or impede repairers from doing their job. However, due to scarcity, affordable repair costs compared to replacement prices, and the benefits of extended product life, both citizens and city councils in countries like the Netherlands, have long recognized the importance of maintaining a healthy, comprehensive and robust repair society. Even manufacturers often realised that easily repairable products led consumers to view their brands as superior in quality.

With the rise of the waste management industry and the consequent decline of the repair society, the mentality of consumers as well as city councils changed. Stepping away from the repairers and promoting the linear production and consumption society over the circular repair and recycle society. Manufacturers gained momentum, global trade exploded, and citizens considered repair as 'poor looking' and an inferior alternative to 'new' that signalled prosperity and progress. Repairers guilds disappeared, repair education went with it, repair jobs diminished, repairer protective laws were torn.

But there is hope. In recent years, the desire to return to a circular society and economy has been growing - not because of scarcity or lower costs, but due to a much more existential threat to our way of living: ecological decline with all of its consequences – deforestation, biodiversity decline, animal extinction, and climate change. The ancient wisdom that sustainability is our only survival strategy is slowly being rediscovered. And for this, we need to nurture the energy captured in an object and act as stewards, maximising their potential.

We therefore want to return to a healthy repair society. But how? Reality is that our current social, cultural, economic and material existence is quite different compared to that of our ancestors.

However, all the essential ingredients remain present, the skills and crafts are still present, and we can harness digitalisation and digital manufacturing to support this transformation. In addition, the Repair Act, also known as Right to Repair, is expected to provide common rules promoting the repair of goods. Crucially, we don't want to return to an era of deprivation, where repair was born from necessity rather than choice, where broken items meant going without entirely. Instead, we envision something better: combining the wisdom of repair culture with modern convenience. Just as new items can be delivered to your doorstep with a click, repair services should offer similar accessibility—without the hassle of searching and shopping, while maintaining the comfort of knowing what you're getting.

This vision led us to develop the repair imaginary concept of the 30-minute Repair Society: a reimagined repair ecosystem at city level that enables a healthy and fair repair culture for the 21st century—benefiting repairers, manufacturers, and consumers alike.

What if cultural change shifted us from abundance-seeking to community access-focused living—from "having everything" to "having enough"?

The 30-minute Repair Society vision

As already demonstrated, valuing objects and caring for materials is neither new nor futuristic—it is deeply rooted in human tradition. Historical examples from craft communities have shown us what we now consider nostalgic or alternative approaches to material culture. Simultaneously, recent decades have witnessed a renaissance in reimagining our relationship with repair, as we explore new possibilities for how we might interact with our material world.

This vision emerges from diverse paths of progress, combining art-driven innovation with practical solutions. Contemporary designers increasingly grapple with material complexity in objects, advocating for more natural and mono-material production methods. This shift questions fundamental design assumptions: Why do we rely heavily on staples and adhesives when simpler solutions exist? The *Nude Chair* by Govert Flint exemplifies this philosophy, demonstrating how elegant design can eliminate unnecessary joining materials. Similarly, the Fairphone represents design-for-repair thinking, prioritising modularity and user serviceability from conception. Meanwhile, initiatives like *Digitally Woven* by designer Gareth Neal and studio The New Raw merge traditional craft knowledge with digital fabrication technologies, proving that innovation need not abandon time-tested wisdom. Community-driven movements have emerged alongside these design innovations, with manifestos championing repair and open-source approaches that leverage repair potential rather than waste materials. Dave Hakkens' *Precious Plastic* project exemplifies this philosophy, ensuring waste materials become resources for repair and creation.

Particularly significant is the repositioning of repair as visible performance rather than hidden labour. Artists like James Shaw, through works such as the Plastique Baroque Stool, and Mierle Laderman Ukeles, through her maintenance art performances, illuminate the typically invisible labour of repair and maintenance. This visibility grants dignity to repair work, transforming it from a merely functional activity into a celebrated practice that acknowledges skill, patience, and care.

Positioning repair at the heart of where we live - making visible what typically happens behind closed doors - creates transparency that helps us understand an object's true value and its 'inner workings'. We might usefully compare objects to human bodies: just as we want our bodies to function as long and as well as possible, requiring regular check-ups, preventive care, and occasional intervention, our objects deserve similar attention and stewardship.

This parallel between healthcare and repair systems envisions a comprehensive infrastructure with multiple interconnected nodes. Healthcare systems succeed because they offer layered support: primary care for routine maintenance and early detection, specialist services for complex conditions, and community health programs for prevention and education. Similarly, a robust repair society requires primary repair stations for routine maintenance and simple fixes, specialist repair *hubs* for complex technical issues, and community education programs teaching preventive care and basic repair skills. The vision should acknowledge these different nodes working in concert: **neighbourhood repair stations** providing accessible first-line support, **specialist centre** offering advanced technical expertise, **mobile repair services** reaching those with limited mobility, educational workshops building community repair literacy, and **spare parts** ensuring material availability across all levels of intervention. This supports a distributed approach that benefits from circular design principles, acknowledging that repair becomes integral to one's life rather than an emergency measure. It values longevity over consumption. It values the original object: its material, emotional and use heritage, design and production story.

The economic framework supporting repair cannot be overlooked. Warranty systems that economically incentivise repair over replacement become crucial cultural-economic tools. Every object possesses a lifecycle with multiple moments when its life expectancy faces challenges—much like human health; again, objects experience factors that influence their longevity. Objects require maintenance and cleaning; they benefit from upgrades as new functionalities become available; they respond to market trends that intersect with personal identity; they adapt to changing life circumstances that may demand more intensive or different usage patterns; and they compete with alternatives when repair costs challenge financial constraints. This reality raises profound questions about consumption patterns. What if cultural change shifted us from abundance-seeking to access-focused living—from "having everything" to "having enough"? Would this constrain creativity and design innovation, leading to conformity and loss of unique identity? Or might it liberate designers to focus on durability, repairability, and meaningful functionality, supporting a culture of repair?

The ultimate vision seeks to transform repair from a technical service into comprehensive social infrastructure that builds community resilience and environmental sustainability. This transformation requires recognising repair not as individual problem-solving but as collective capability-building that strengthens communities while reducing environmental impact.

The primary aspirations driving this vision centre on streamlining material and resource flows whilst ensuring accessibility across all social strata. This approach naturally leads toward specialised repair zones and networks—echoing how ancient cities organised crafts within neighbourhoods, but adapted for contemporary digital connectivity and modern mobility patterns.

Implementing the 30-minute Repair Society

The 30-minute Repair Society is an urban society that is optimized for repair, within a reasonable timeframe and at a reasonable yet fair cost. It consists of four nodes, which together form a tight network and web of repair services which can reinstate the repair culture in a city. We call this web the Repair Access per Kilometre Index, or **RAK-Index**. In the 30-minute repair society, we realize a repair culture where everyone, will have the possibility to repair anything within a 30 minute timeframe on average, in their own urban environment. By doing so, repairing can be offered within a reasonable timeframe and at a reasonable cost, for the product owner (consumer). The healthiness of the repair society is indicated with the Return on Repair formula, the **RoR-formula**. This formula calculates the value saved and created by repairing a broken product over replacement with a new product. The healthier the repair society, the higher the RoR for products in that society. With this vision of distributed yet connected repair expertise, we can create something meaningful for our communities.

The core idea is that, for the 5 most common and relevant repair categories, product owners living in a city context always have the possibility to diagnose and repair their product within 30 minutes, on average. The 30 minute is a relevant timeframe for it: (1) takes away the time barrier for product owners to choose repair over replacement, and (2) keeps the time spend for repairers limited and therefore economical.

It is not realistic to expect that all products can be repaired within 30 minutes, some will take shorter while others may require more specific skills or creative problem solving: however, it is crucial that within the 30 minute one knows the diagnosis for repair and can take informed actions based on this insight.

That is why we introduce the four node approach:

NODE 1 HELPLINE

National Repair Helpline for Home Repair

NODE 2 PARTS

Regional Spare Part Hubs

NODE 3 REPAIR STATIONS

Local/Neighbourhood Repair Service Stations

NODE 4 SPECIALIZED CENTRES

District Specialty Centres

Figure 2 shows the schematical logic of the four node approach and each node will be explained in detail after the RAK-index and RoR-formula.

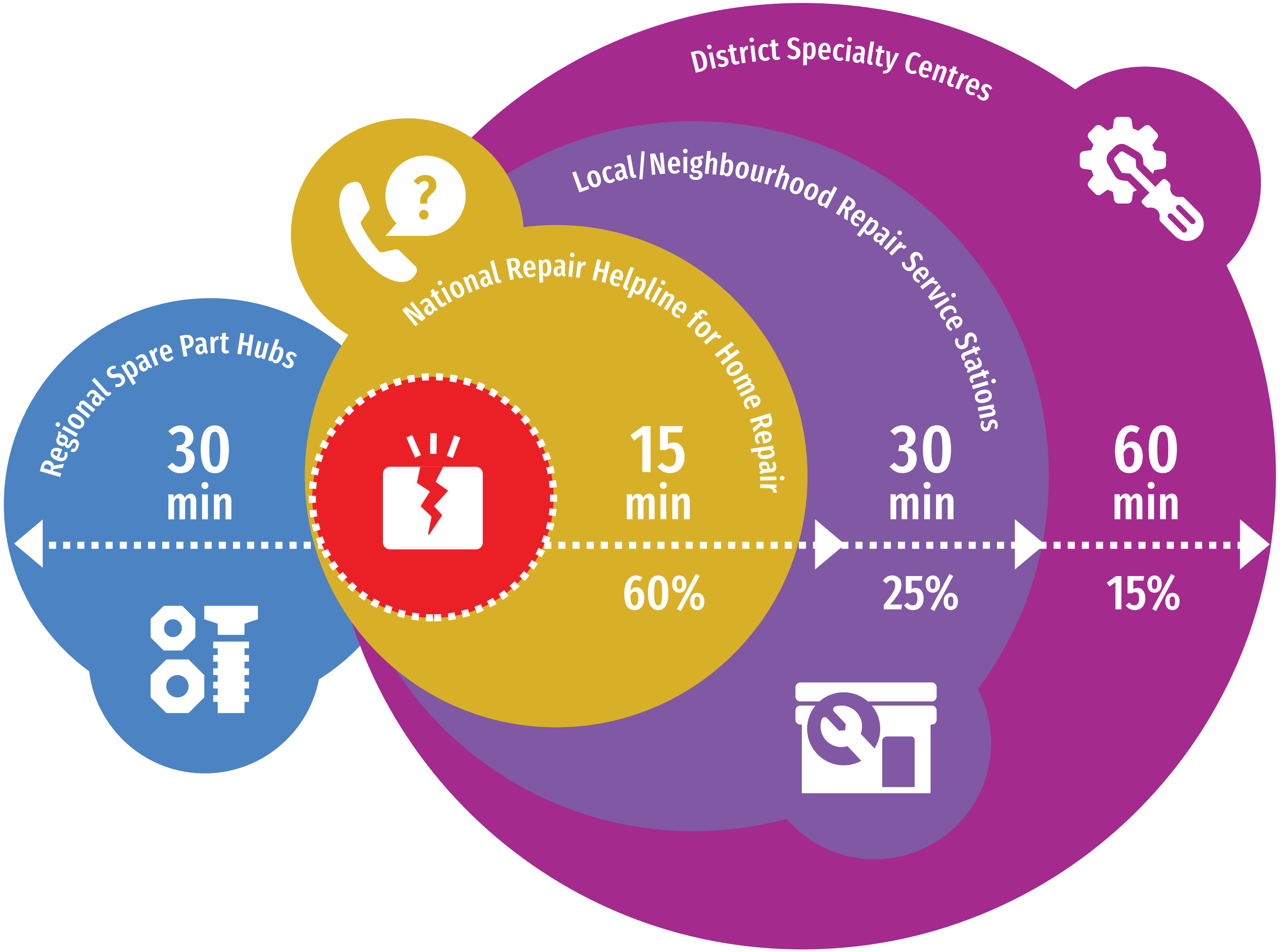

Figure 2: 30-minute Repair Society framework

Repair Access per Kilometre Index [RAK]

One square kilometre equals roughly a 15-minute commute from one end to the other. It is also about the distance the general population is willing to cover on a daily basis. Historically, most cities were organised around this logic, ensuring that the distance between home, work, services, and leisure was within this boundary. In many cities, this changed in the 1930s with the arrival and popularisation of Modernism—an approach which prefers to plot cities in zones or districts with distinct functions. But the trend is reversing. Thanks to theories like the "*15-minute city*" by Carlos Moreno and the adoption of this idea by cities including Paris, Milan, and Buenos Aires, cities around the world are thinking of cities as places for people again.

The RAK index fits perfectly into this narrative and extends the thinking of the 15-minute city by considering repair services. The **RAK index** is a measure of how large the part of the city is where citizens have access to repair services within $1km^2$.

On a scale from 0-1, it calculates the availability of neighbourhood repair services for the repair categories Electronics, Fashion, Home, Transport and Leisure for each square kilometre of the city (see example in figure 4). With 1 indicating the presence of all main repair categories, and 0 indicating the presence of none of them. To calculate the RAK for the city, or for a city district, all results are added and divided by the amount of 1km2 sections for that (part of the) city.

REPAIR CATEGORIES

Electronics
Electrical Appliances
Phones/Laptops

Fashion
Clothing /Textiles
Shoes / Accessories
Jewellery / Watches

Home
Lamps
Furniture

Transport
Bicycles
Electronic vehicles

Leisure
Toys
Sports Equipment

+

Return-on-Repair Formula [RoR]

To achieve a fair labour practice for repair, a formula to calculate the value saved and value created through repair over replacement is helpful. We created a formula, for it does not exist momentarily, which intents to objectively determine whether repair is economically justified and preferable over replacement, for both owner, repairer and the object itself.

The formula takes into account the following seven variables:

1 Pre-repair value

This is the average expected value of the product following the method of annual standard depreciation.

2 Post-repair value

This is the expected value of the product after successful repair, measured as a function of the expected lifetime extension.

3 Repair cost

This is the sum of the labour cost of the repairer, the cost of spare parts, and the overhead cost of the repair facility.

4 Lifetime extension

This is the expected amount of time (measured in years) the products life is extended as a result of the repair

5 Replacement cost

This is the real cost of replacement. This is not the same as the market price of the replacement product, as this would overlook the wasting of the broken product as well as the true costs of production. To not overcomplicate this variable, we calculate the replacement cost in comparison to the value that would have been created through repair and penalised by the lack of eco-design attributed to the product.

6 Repairability

This is the based on French index for repairability, which should be introduced in the Netherlands as well. It scores each product on 5 criteria: documentation, spare part availability, spare part price level, supportiveness of producer, ease of repair. In the formula, the final score (on a scale 0-10) is used to penalise the replacement score in case of a low repairability of the replacement product.

7 Post-replacement value

This is the market value of purchasing an equivalent new product.

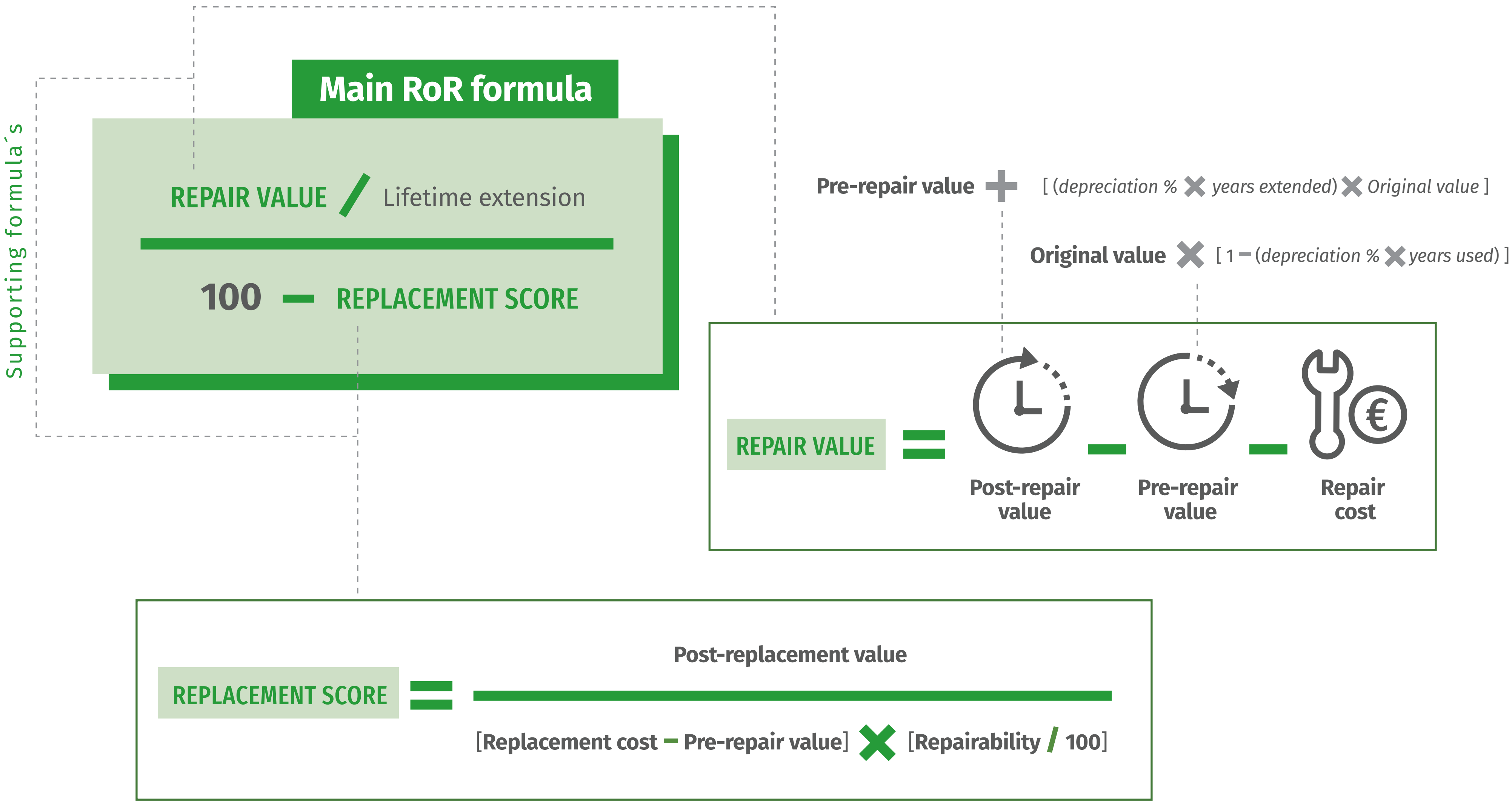

Figure 3: RoR-formula

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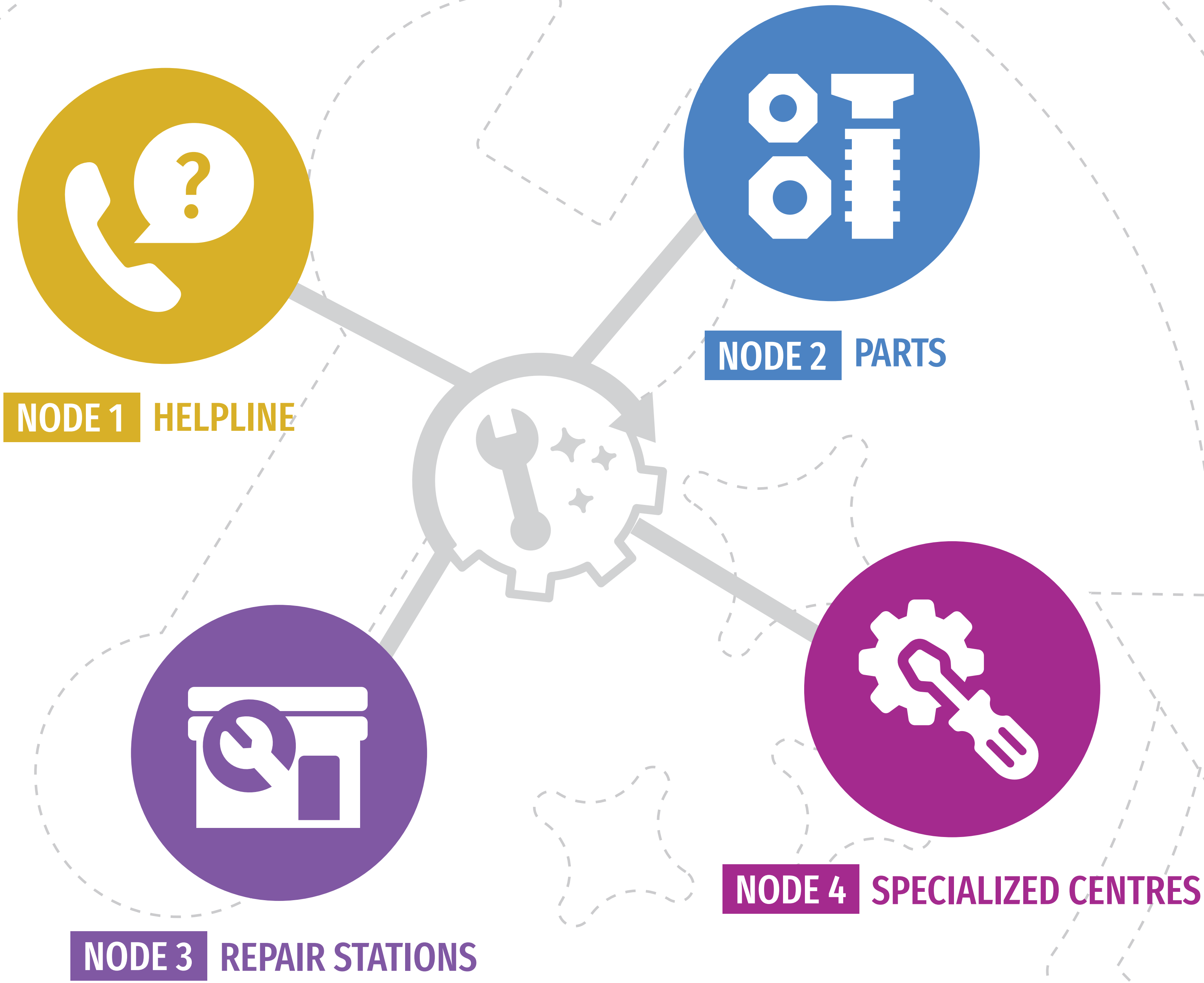


The four nodes

In the 30-minute Repair Society, we start from already existing models and initiatives, both in the Netherlands and abroad, to define an approach which is ambitious, yet realistic and that resulted in the 4 nodes suggestion.

NODE 1 HELPLINE

National Repair Helpline for Home Repair

In France, the organisation Spareka offers video-based repair support for product owners. Their experience after more than a million video calls is that up to two-thirds of all electronics repair jobs can be successfully completed by the owners themselves within a short timeframe and without the need for spare parts. This is an extraordinarily high percentage, meaning that for the majority of broken products that people have in their homes or offices, there is no need at all to visit a repairer. Hence, the first node of the 30-minute Repair Society is a national repair helpline modelled after the French success story.

The helpline is nationally available and should be able to provide support in the most commonly spoken languages in the Netherlands: namely Dutch, and at least English, and possibly Turkish, Polish, and Arabic. Apart from direct digital enabled self-repair diagnostic support, the other job of this first node in the 30-minute Repair Society is human supported diagnostics. For all products that cannot be self-repaired, the helpline will diagnose the needed repair steps. This could lead to three journeys:

A. If the product owner can self-repair after receiving the required spare part(s), according to the judgement of the helpline repairer, the helpline repairer can assist the product owner to order the correct spare part from the **Regional Spare Part Hub** (node 2).

B. If the problem requires repair assistance, the helpline repairer can redirect the product owner to the **local neighbourhood repair service station** (node 3).

C. If the problem is considered a complex, longer term repair job, it can bring the product owner in contact with closest **district specialty centre** (node 4), and ideally, have insight in there planning and availability to start a ticket.

Because the digital systems of the nodes are connected, the service station or specialty hub and spare parts hub are immediately notified by the helpline repairer of what the diagnosed issue is, allowing them to prepare for the product owner's arrival with the product (creating a ticket) or to organise collection.

For the Netherlands, the **national repair helpline** could be organised publicly and non-profit by an organisation like the Consumentenbond, or a newly formed societal organisation which is funded by the national government, which offers opportunity for different participants to contribute to, like FixPart.

NODE 2 PARTS

Regional Spare Part Hubs

The most common reasons products cannot be successfully repaired are a] inability to open the product due to poor reparability design, and b] unavailable spare parts. According to 15 years of experience from Repair Café International, these two reasons lead to 80% of failed repairs. The high price of spare parts, long repair times, lack of information or tools, and poor condition of the product combined make up the other 20%. This is a very clear signal, indicating that access to spare parts, or, in some cases, specially designed alternatives (such as 3D-printed parts), will increase repairability enormously. This should be combined with a strong push for manufacturers to design their products to be repair-friendly (which can be supported through legal pressure on right-to-repair and Extended Producer Responsibility (EPR) legislation). To achieve a healthy and sustainable repair society, the Netherlands should have a system that consists of a network of **regional spare part hubs** (on the scale of a province, for instance divided for the different categories). These are warehouses where millions of spare parts are kept and sold to self-repairers, local repair service stations, and specialist repair centres. Similar to the role of Centraal Boekhuis for books, these hubs act as logistical service providers in the 30-minute repair society. All **repair service stations**, **repair specialty centres**, and the repair helpline have direct insight into the inventory of the regional spare parts hub and can order directly from stock. Because the spare parts hubs are optimised for logistics, like Centraal Boekhuis, they can efficiently supply the **service stations** and **specialty centres** with the ordered spare parts in a short time frame.

NODE 3 REPAIR STATIONS

Local/Neighbourhood Repair Service Stations

Everyone must have proximity to a **local repair service station** where they can bring their products for repair after having received redirection from the **repair helpline**. These service stations need to be close to the homes and offices of product owners because many products are inconvenient to transport and due to convenience requirements. Think of television screens, computers, chairs, or lamps. With some help from a neighbour or with the boot of a car, it is possible to bring the product to a service station in one's own neighbourhood, but it would be inconvenient to go any further. That is why we embrace the 15-minute city concept to plan for local repair service stations. Considering that, on average, a standard repair job that a skilled and prepared repairer can complete takes up to 15 minutes, together with the 15-minute commute to access the repair service station, this allows the repair to happen within a 30-minute timeframe (excluding the return trip). Examples of **local repair stations** already present in the city are repair shops, makerspaces, stadslab, and repair cafés.

If there is a queue for repair objects and the repair is not completed immediately, this poses no problem—the item can be collected at another time and the journey can be combined with a daily walk. Since we are discussing a system that supports the circular economy and healthy living by taking care of our objects, we could also take care of ourselves by aiming to reach the WHO-recommended 150 minutes of moderate physical activity per week—which research shows can be achieved through 8,000–10,000 daily steps. In this way, we can truly strive towards a 30-minute repair society that nurtures both our possessions and our personal health.

When applying this logic to Rotterdam, around **85 local repair service stations** are needed to cover the urban area. This excludes Rozenburg and Hoek van Holland. Each local repair service station is equipped to receive repair items in the categories that cover the products people have at home or in their offices, including electronics, fashion and accessories, home and garden furniture, transportation vehicles, and leisure items such as toys. Each repair service station thus has five desks with the required repair tools, repair documentation, and most common spare parts. Less common spare parts are ordered from the **spare parts hub**.

Of the 40% of all repairs that cannot be dealt with through the **repair helpline**, 60% can be repaired at the **local repair service station**. This estimate is based upon the data from Repair Café International, where they track how many repair items can in fact be repaired without specialist knowledge being available. In other words, 85% of all repair requests (60% at home and 25% at the service station) can be processed hyperlocally, within one's own neighbourhood, when the 30-minute repair society is implemented.

NODE 4 SPECIALIZED CENTRES

District Specialty Centres

The final node in the 30-minute repair society consists of the **repair specialty centres** at city district level. The remaining 15% of all repair requests either require specific skills and knowledge and/or creativity to be completed successfully. It is not feasible to have this available at neighbourhood level, but it is feasible to have this available at city district level. In a city like Rotterdam, probably **four district repair** in total can serve the whole repair society: one for every 150,000 citizens. Each centre has specialists in-house with advanced knowledge about the items they repair. The centre facilitates training, education, and could be combined with a hub for innovation or creativity, mixing the repair work of specialists with other programmes. A good example of this is the ROG Center in Ljubljana, Slovenia. This centre consists of nine specialist workshops where tools and expertise are available at all times to respond to requests. These can be artistic, engineering, or scientific requests, but they could also be complex repair requests. On another note, there are of course already interesting existing initiatives which can serve as **specialty repair** in cities like Rotterdam. The *Circulaire Textiel Hub*, which opened in 2021, is such an example. Buurman&Buurman and educational facilities like Techniekcollege or Meubileringscollege could also serve as **repair specialty centres**.

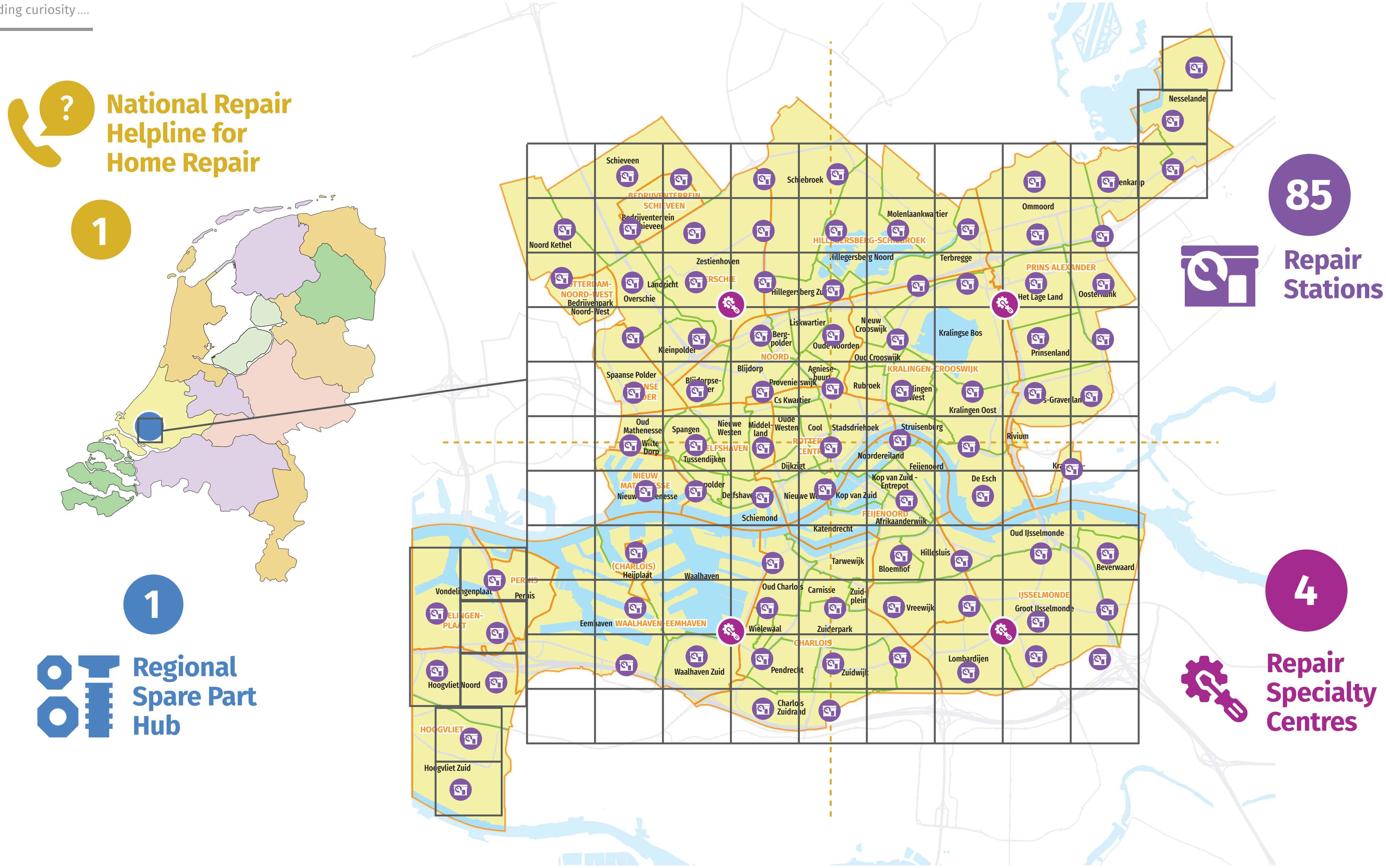


Figure 4: Schematic map of a thriving Repair Society for Rotterdam where RAK-index is 1

Netherlands_with_provinces.png: open source image from wikimedia.org

Discussion

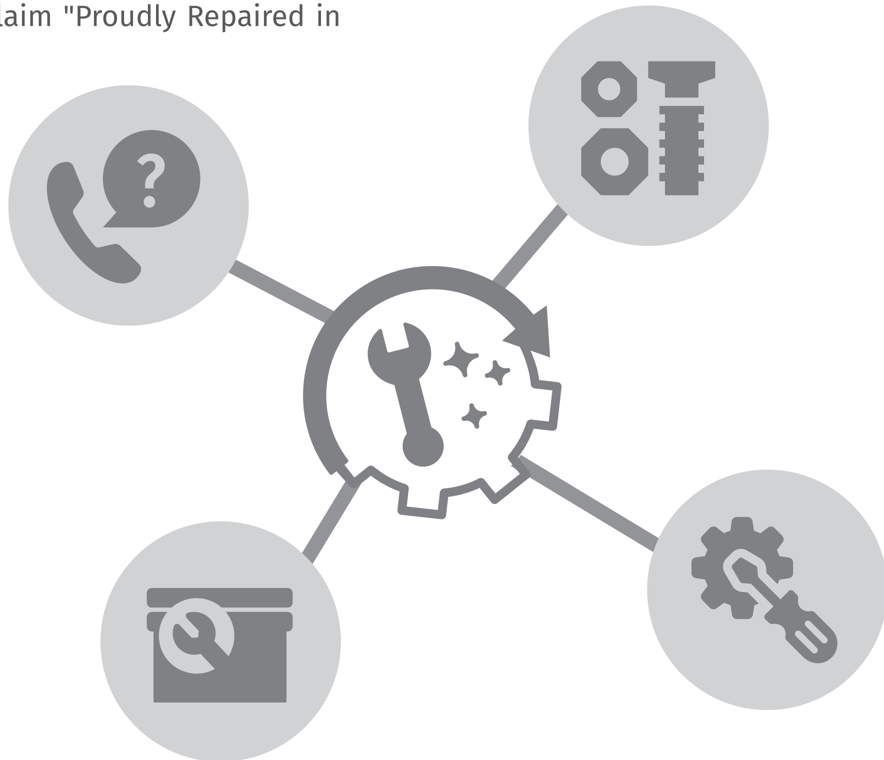
The 30-minute repair society concept is an outcome of the research conducted in the "Valuing 'repair' in just labour transitions in the Rijnmond region" project towards a Fair Repair Code, supported by the Resilient Delta Kick-Starter grant from the Convergence initiative. This research was led by Ilaha Abasli (International Institute of Social Studies, EUR) and Joram Groen alongside Ellen Loots (Erasmus School of History, Culture and Communication), Peter Knorringa (International Institute of Social Studies, EUR), and Karlheinz Samenjo (TU Delft). In4Art was invited to contribute with a 'repair labour imaginary' to research together and offer insights into what repair work could look like, how to structure training and career development, policy frameworks for just transitions, and community engagement strategies. This essay builds upon these themes, stirred the discussion, and explored possible ways of how such a repair society could function by outlining the repair imaginary as 'The 30-minute Repair Society'. However, at the moment, it only lives on paper. It should be tested to understand whether indeed a higher RoR for products can be achieved, in which there are many externalities based on the original material.

The next step should be to empower those repairers already present in the various neighbourhoods of the city. They need to be found and can be supported by making their work more accessible, where digitalisation can be of support in the diagnostic stage, but also circular economy perks. The city of Rotterdam has been taken as an example on paper, but how would it be in practice? What governance structures are needed to coordinate the four nodes and which economic principles would be required to have this both ecologically, socially, and financially sustainable? Can we deploy the system in this city and understand the mechanisms of the four nodes by seeing how well the **RAK** is already working and what is missing? Based on this, policy and education can team up. At the same time, the business model and time spent to help realise the 30-minute Repair Society should be supported, since behavioural shift of consumers is hard to achieve and it cannot be expected that only the repairers are responsible for achieving this. If people get an incentive to repair instead of replace, e.g. through collecting Repair Points, which they can use for Rotterdampas activities, the repairers could receive support from the municipal circular economy initiatives (and sustainability ambitions), so that not only those that are start-ups and those active in gentrified neighbourhoods can benefit from this transition, but also the existing local heritage practices.

In this vision of a contemporary repair society, we can reclaim something profound that medieval guilds understood intuitively: that objects embody not just materials and function, but accumulated wisdom, skilled labour, and cultural memory. Every repaired chair carries forward the knowledge of woodworkers and upholsterers; every mended electronic device preserves the innovations of countless engineers and designers. The 30-minute Repair Society envisons service stations and specialty centres to be more than a repair infrastructure - they evolve into repositories of material culture, where the art of diagnosis, the technique of restoration, the collective repair capabilities of communities, and the patience of careful craftmanship are valued and transmitted

Against the backdrop of planned obsolescence and throwaway culture, these new guilds of repair stand as quiet revolutionaries, asserting that our relationship with objects need not be one of consumption and disposal, but of stewardship and renewal. Here, the act of repair becomes an act of resistance—against waste, against the loss of practical knowledge, and against the devaluing of the material world that sustains us. If we cannot win the battle of "Proudly Made in Rotterdam," let us at least forge a future where we can proclaim "Proudly Repaired in Rotterdam."

“...objects embody not just materials and function, but accumulated wisdom, skilled labour, and cultural memory.”



"Proudly Repaired in Rotterdam"

This research was conducted as part of The Resilient Delta Kick-Starter grant program, specifically under the project 'Valuing repair in just labor transitions in the Rijnmond region'.

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