
ReNew Orleans

Reinventing a city for all

June 2023



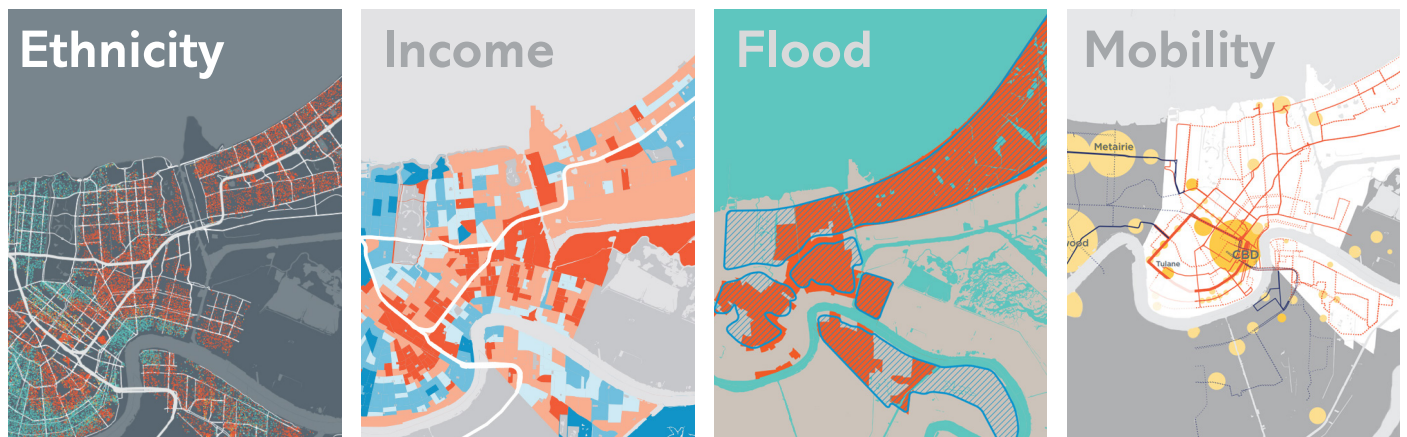
Students
Reinventing
Cities



RENEW ORLEANS

New Orleans is a beautiful city, home to a wonderful culture and a rich heritage. Despite that, the city has become one characterised by division. The city is torn in two, split between a wealthy white middle class in the west and a disadvantaged African-American community in the east. Residents of Lake Forest, of which 88% are African-American, are among the city's poorest, most socially immobile and most threatened by severe flooding.

ReNew Orleans is a passionate student group looking to change that. We want to bring real transformation to the city, turning it into a place for all, a place of equity, and a place for the future.



Credit: Resilient New Orleans 2015

USING C40 VALUES:



OUR ACTION PLAN:

1  **Lake Forest Green Corridor**

2  **High-tech transportation**

3  **Lake Forest solar microgrid**

4  **Community space & Amphitheatre**

5  **Climate-resilient, affordable housing**

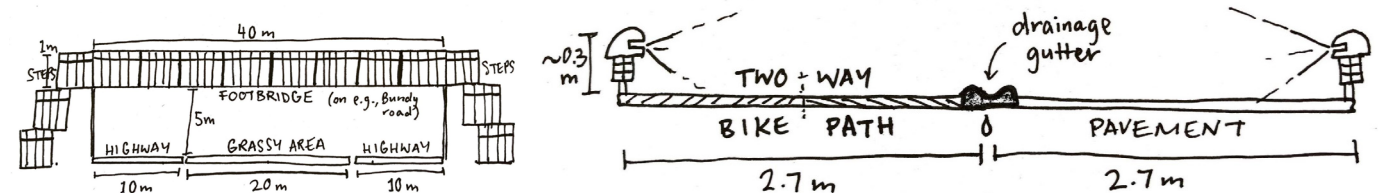
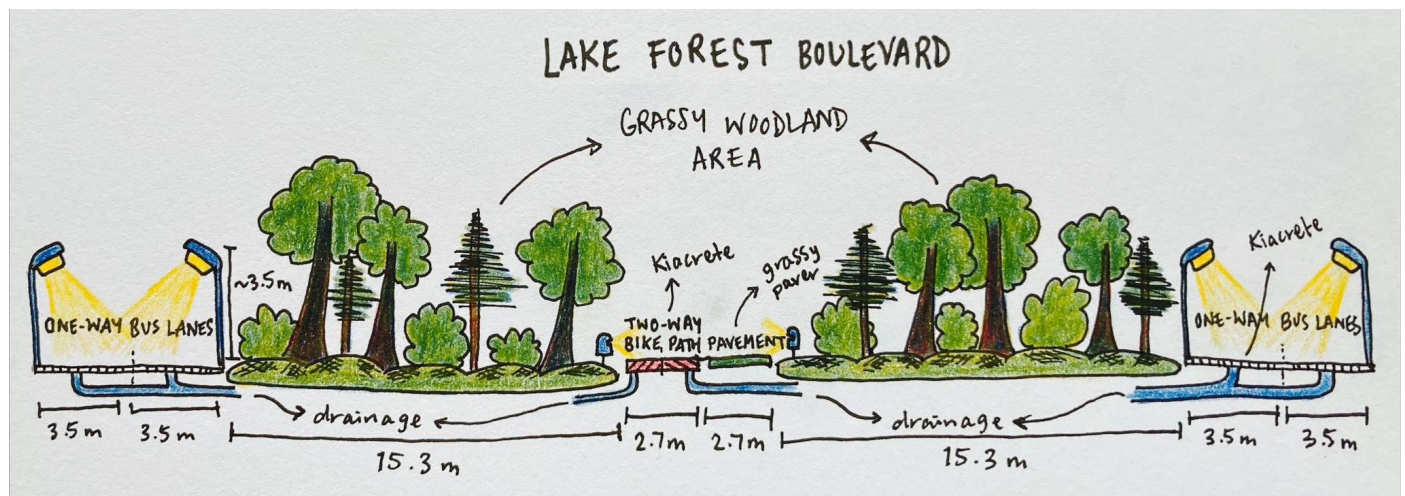




Tactical urbanism: Lake Forest Green Corridor

ReNew Orleans understands the power that the urban environment holds. Peaceful, safe and green areas have the potential to bring joy to local residents. To unleash this opportunity, ReNew Orleans plans to pedestrianize Lake Forest Boulevard.

By favouring pedestrians, improving local greenery, and eliminating private vehicles, we aim to promote a sense of community, encourage healthy lifestyles, and transform Lake Forest Boulevard into a place really made for the community – not just for those simply passing through.



Our boulevard design features a footpath and bicycle track in the centre, bordered on either side by native greenery, such as the Louisiana Iris, to shelter pedestrians in a green urban paradise. On the outer sides, two road lanes allow buses and emergency vehicles to pass through – dramatically limiting the road traffic passing by, to create a more pleasant setting with less air and noise pollution.

Lighting, powered by our new solar microgrid, will guide the way for the residents passing through at night. With a subtle downwards angle, light pollution will be limited to minimise the effects on local nightlife, whilst keeping pedestrians safe.

To ensure climate resilience in the face of flooding, ReNew Orleans will use Kiacrete as the paving surface, a novel anti-clogging concrete technology currently being under testing in several UK sites. Kiacrete's superior long term drainage performance ensures a dramatically reduced flood risk, whilst also reducing embodied carbon during construction.

By using new technologies, we hope New Orleans can become a leading US city in sustainable urban design.

No more dirty air
Banishing cars from Lake Forest Boulevard will help the city meet its emissions and air quality targets.



Keep your cool
A green canopy will help keep pedestrians and cyclists cool, limiting the urban heat island effect.



Community initiatives

ReNew Orleans isn't just about the hard engineering. Following works, a number of initiatives will be started to boost community engagement. Working with existing groups, clubs, schools and local religious organisations we hope that the new Lake Forest Boulevard can bring people together.

For example, local schemes such as "Friends of Lake Forest Boulevard" will be created to give residents a chance to take care of their local area. In doing so, we will instill a sense of pride, responsibility and inclusivity within the local community to make real long-lasting change.

In addition, the creation of a gardening group is proposed whereby locals are provided with free community-owned tools to use in allotment-style raised beds along the newly-pedestrianised boulevard. Not only will the scheme promote a healthy lifestyle, but it will give locals a sense of shared agency and responsibility in their local area and give valuable access to social groups and green space for those currently isolated.



Getting around High-tech transport

ReNew Orleans plans to revitalise the city’s bus network, creating a modern and efficient Bus Rapid Transit system, bringing numerous benefits to both local residents and the environment.

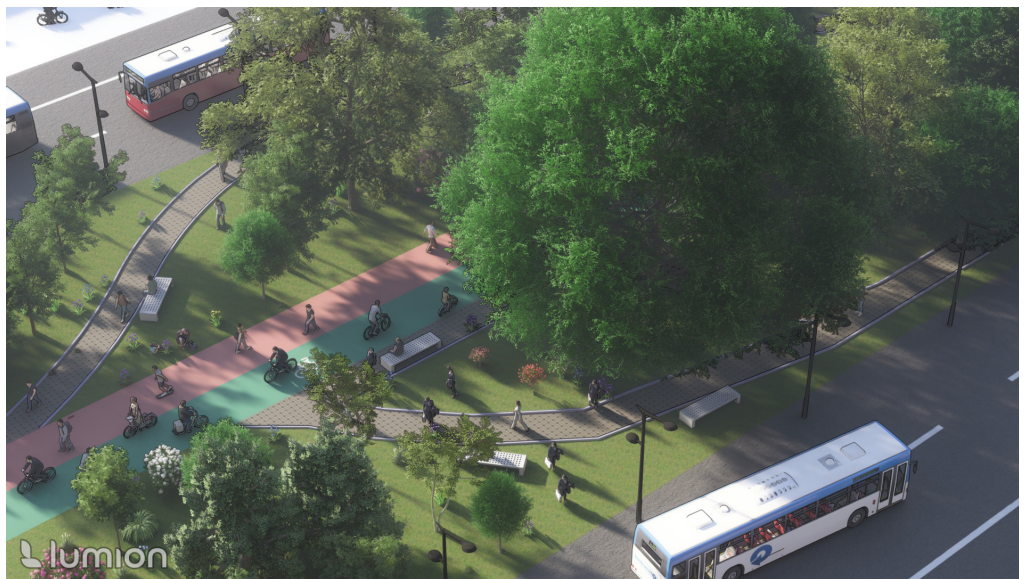
We plan to install a new express route from Lake Forest directly into the city centre, giving residents of the area an improved social mobility - with access to new employment opportunities, healthcare provisions and commercial areas in the city. It is part of our strategy to boost economic development and tackle unemployment, helping New Orleans to become a thriving city open to all.

By installing dedicated bus lanes and smart technology, such as GreenWave and Guaranteed Interchange, we plan to transform the bus network into an attractive, efficient and reliable way to get around. We plan to hardwire accessibility into the design, with new-build bus stops designed to be fully accessible to people of all ages and abilities. With a flat \$1 fare pricing structure, residents get value for money on longer journeys and an incentive to walk for journeys short enough on foot.

In addition, new all-electric buses will significantly lower local air and noise pollution, improving health outcomes within the city. In addition, the network’s operating carbon footprint will be significantly streamlined.

Putting people first

Our improvements to the BRT network will put people first, ending the age of the automobile.



Guaranteed Interchange

New technology will allow bus users to seamlessly make their connection, creating an increasingly attractive and popular BRT network for residents.



GreenWave technology

To encourage public transport uptake, ReNew Orleans will use GreenWave technology to bring faster journey times and a more reliable service to the city's bus network.

Using artificial intelligence, GreenWave technology works to detect when a bus is approaching a junction or set of traffic lights. On approach, green light time is extended to allow the bus to seamlessly pass through, meaning unnecessary stop-starting is eliminated. By prioritising buses, New Orleans' bus service will become a truly reliable and trusted way to get from A to B. We plan for this to be the first step in New Orleans becoming a leading US city in the green revolution; a city which values its residents and urban environment.

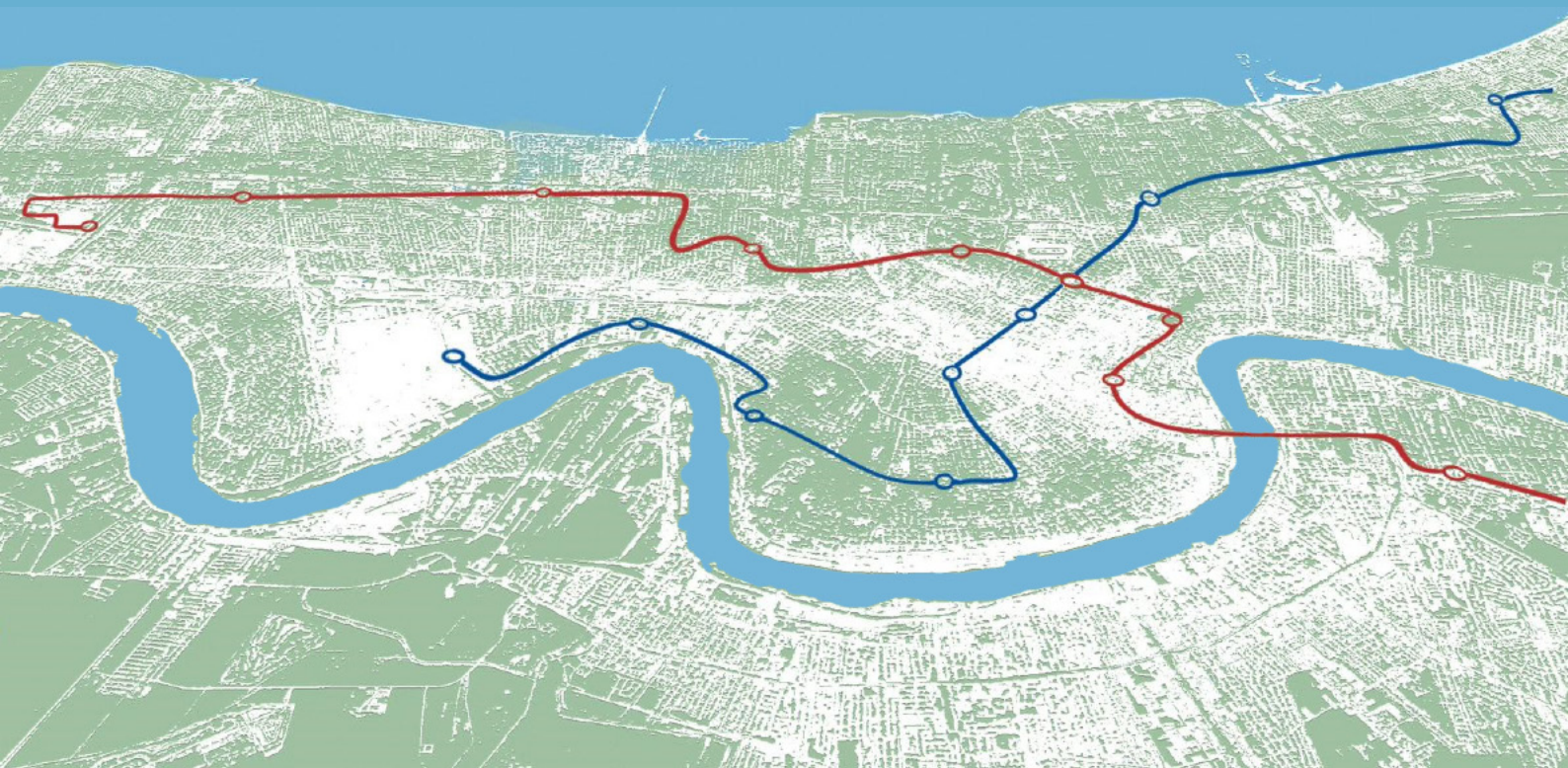
Guaranteed Interchange

Using a Guaranteed Interchange system, connections between bus routes will become easier than ever before. Buses will arrive simultaneously, with computer technology and monitoring ensuring that all passengers make their connections. It will simplify the bus network, increasing service frequency and further encouraging residents to take the bus.

Financial model

- A flat \$1 fare, paid by an efficient tap-on system, will provide great value for long journeys, whilst encouraging people to walk for shorter journeys which can be made on foot.
- Children, students, the elderly, and those with limited mobility will pay a reduced 50 cent fare.
- Tourist, weekend, and airport passes will bring further revenue.
- Additional revenue from on-bus advertising could be explored.

- By approximating that average user will make 2 journeys per weekday, for 40 weeks of the year, we estimate around 20 million journeys will be taken across the network, bringing in \$20mn/yr of revenue.
- Initial funding is estimated to be around £50mn, with interest-free loans or a government grant acting as sources of funding.





Clean & resilient energy Solar microgrid

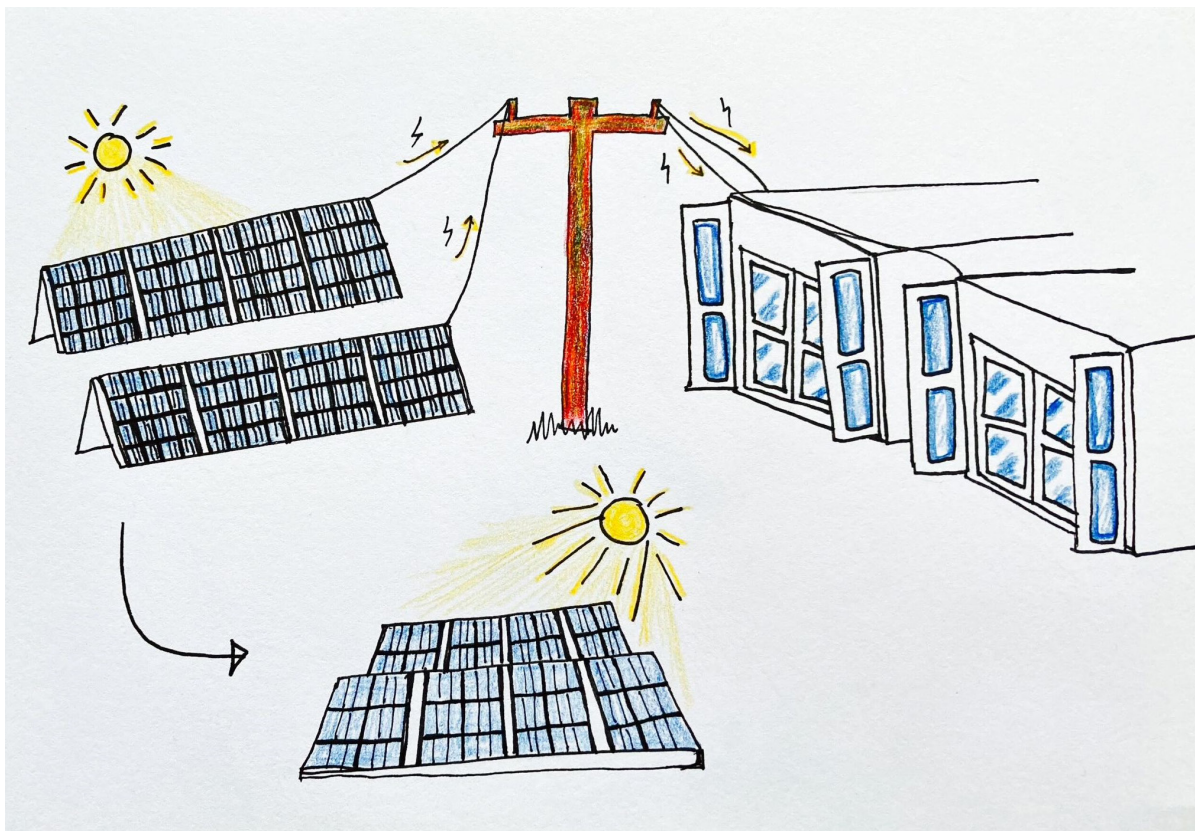
Energy poses a unique challenge in New Orleans as the city needs a reliable energy supply to respond to emergencies and recover swiftly from natural hazards, especially with an increasing risk of power outages due to hurricanes & tropical storms.

ReNew Orleans also recognises the urgent need to drive towards renewable energy sources, and will prioritise greater capacity and efficiency in the city's energy production, whilst taking measures to reduce consumption and demand. Going into the future, New Orleans must in-build climate resilience into its power network.

Lake Forest solar microgrid

Our ambitious plans focus on the construction of a new solar microgrid: the Lake Forest Solar Microgrid. ReNew Orleans plans to work with the city's current plans, alongside the US Department of Energy and Energy, to test a microgrid by 2025 and build 16 resilience hubs with solar panels and batteries across the city.

By installing solar panels locally and constructing a microgrid storage system at 9661 LFB, we aim to reduce the area's dependency on the main electricity grid, using renewable sources to do so and improving the resilience of critical power infrastructure in the process. In doing so, we will achieve energy reliability, sustainability and resilience by 2025.

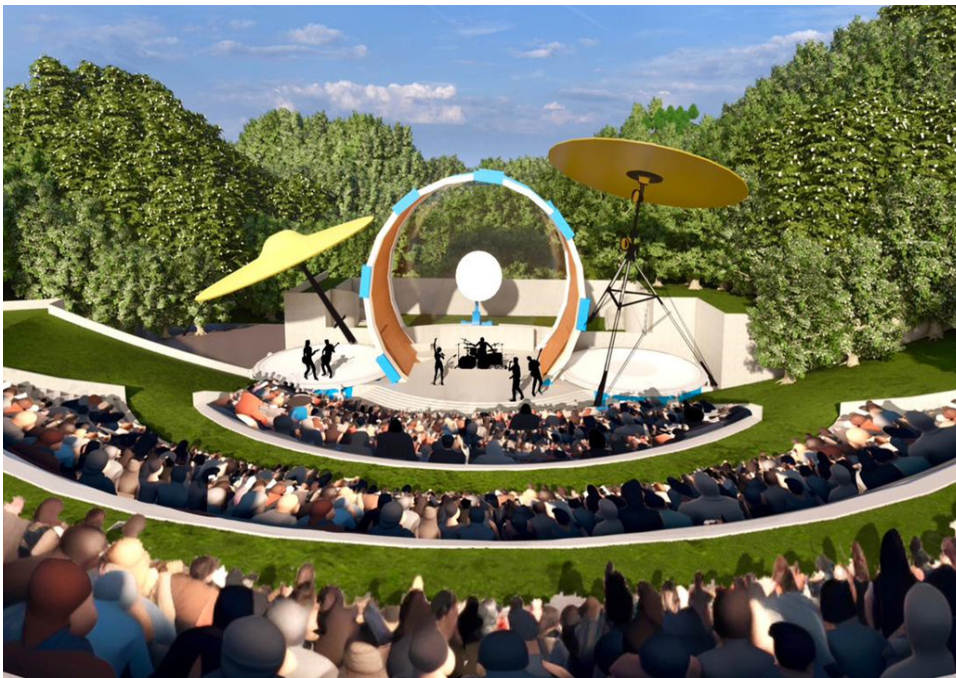




A space for the community Lake Forest Amphitheatre

Inspired by the city's rich musical heritage, ReNew Orleans will build the Lake Forest Amphitheatre, an open-air community space at the heart of the boulevard.

A place for gathering and a venue for celebrating events and festivals, the amphitheatre will integrate the Lake Forest corridor within the wider city, bringing people closer in the process. ReNew Orleans hopes the area will become a bustling centre, creating economic opportunity, job opportunities and generating income for the local area.



People-focused & green
Sitting within the land, Lake Forest Amphitheatre will act as a "dry basin" in the area's wider sustainable urban drainage system. Working with nature, the Amphitheatre will purposely flood during storm events to avert water away from nearby homes and property.



Community centre

Adjacent to Lake Forest Amphitheatre, ReNew Orleans plans to construct a community centre, an indoor space open to local residents, in a bid to promote a strong community presence.

As well as a place for local groups to meet, the community centre will additionally act as a place of refuge for those facing social difficulty. For example, to tackle the area's food desert we propose partnerships are formed with local businesses, whereby food approaching expiry is offered for free. The newly built community centre could act as a distribution point in this case.

With a prefabricated design, the construction period of both Lake Forest Amphitheatre and the adjacent community centre will be minimised, ensuring disruption to the local area is limited.



Building for the future Climate-resilient homes

New affordable housing

According to a 2022 Housing NOLA report, in New Orleans demand for affordable housing outpaces supply by more than 8000 units. ReNew Orleans aims to close the housing gap by renting out new affordable homes to those most in need, transforming New Orleans into an equitable city fit for the future.

Using a mixture of refurbishments and new build, the plan will bring disused buildings back to life and improve affordable housing availability in the area, at the intersection of Lake Forest Boulevard and Read Boulevard, transforming an abandoned urban wasteland into a thriving new community of up to 1000 units of affordable housing. At a cost of \$100k each, including a green roof feature, our home design is truly affordable.

- Clean construction, using modular methods for new build to limit construction time and waste.
- Circular resources, reusing out-of-service containers.
- Climate resilience, with hurricane-proof design.
- Green buildings, with large windows for natural light and ventilation.
- People-centered design, including outdoor space with each new home.

Green roof design

Following the example of Chicago, ReNew Orleans hopes to roll out a similar incentive programme across the Lake Forest Boulevard area to bring long term improvements to local biodiversity, thermal comfort in buildings and responsible water use.

- Installed in a short period, whilst the 'bedding in' of plants can take up to a year for full maturity.
- Affordable installation, approximately \$5000 per home.
- Stormwater harvesting for some domestic uses.
- Improves surface water quality.
- Durable, with replacement of infrastructure every 25 years.

Resilient home infrastructure

ReNew Orleans will support resilient home infrastructure in the Lake Forest area following a partnership between the city and Deutsche Bank's AllianceNRG. The Resilience Retrofit Program will continue to provide financial incentives to homeowners who make investments in storm resilience upgrades, such as storm shutters and floodproofing. Doing so is part of ReNew Orleans' strategy to reduce hurricane risk for property owners and build a more resilient community in the Lake Forest Boulevard area in doing so.

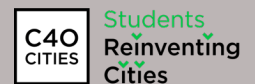


Using shipping containers to make affordable homes

By retrofitting and elevating shipping containers, our design provides 60m³ of living space per home. The container doors allow for homes to be 'hurricane-proof', whilst large windows, natural ventilation and green roofs ensure they are 'energy and resource efficient'. At just \$100k per unit, our home design is truly affordable.



© ReNew Orleans 2023



ReNew Orleans is a group of passionate students looking to bring real change to the city of New Orleans. We wish to thank C40 Cities, the competition organisers & the city of New Orleans for making this opportunity possible. Additionally, we are grateful to those external individuals who have helped us, advised us and inspired us along the way.

Use of icons throughout is made possible due to flaticon.com; specific credit to freepik, icongeek26, dinosoft labs, prosymbols premium, kornkun, iconjam, high quality icons and pause08. Graphics developed using Lumion, Adobe Photoshop & Adobe InDesign.

Specific references can be provided on request. [1] lawnlove.com/blog/cost-to-plant-tree [2] coed.cymru/images/user/Tree_Planting_Coed_Cymru_2017.pdf [3] www.anethic.com/blog/cost-comparison-of-solar-street-lights-vs-traditional-street-lights#:~:text=On%20average%2C%20the%20cost%20of.%242%2C500%20per%20light%2C%20including%20installation [4] nola.gov/oversized-load-permit/ [5] dazuma.us/products/out-door-waterproof-embedded-landscape-decorative-lamp-side-lighting-ground-lights?variant=42749420699872 [6] gardenandlandscapelighting.co.uk/product/stainless-steel-recessed-side-light-12v-220-lumens/ [7] amazon.com/HNES-Outdoor-Waterproof-Decorative-Landscape/dp/B09Q2ZD-5PK/ref=sr_1_3?keywords=solar%2Blights%2Bbulk&qid=1681399638&sr=8-3&th=1 [8] remodelingexpense.com/costs/cost-of-grass-pavers/ [9] ced.sog.unc.edu/2016/01/pedestrian-bridges-connecting-people-with-communities/#:~:text=The%20Federal%20Highway%20Administration%20estimates,%245%20million%20per%20complete%20installation [10] homeadvisor.com/cost/plumbing/drinking-fountain-installation/ [11] parknplaydesign.com/post/how-much-does-commercial-playground-equipment-cost#:~:text=The%20average%20commercial%20playground%20equipment,could%20end%20up%20spending%20%24150%2C000%2B [12] fhwa.dot.gov/livability/fact_sheets/mm_fact_sheet.pdf [13] building.co.uk/cost-model-town-centre-pedestrianisation/1025806.article [14] scholarworks.umass.edu/cgi/viewcontent.cgi?article=1406&context=fabos [15] onlinelibrary.wiley.com/doi/epdf/10.1002/atr.5670280204 [16] knockitdown.com/2020/12/22/how-to-estimate-the-cost-of-a-commercial-demolition-project/ [17] bloomberg.com/news/features/2022-12-05/urban-planner-jeff-speck-revisits-walkable-city-10-years-later [18] oxfordmail.co.uk/news/23085781-broad-street-pedestrianisation-scheme-cost-half-million-pounds/ [19] oxfordhistory.org.uk/broad/buildings/tour_start.html [20] planning.lacity.org/odocument/c9596f05-0f3a-4ada-93aa-e70bbde68b0b/Complete_Street_Design_Guide.pdf [21] rapidtransition.org/stories/reclaiming-the-streets-the-increasing-trend-of-pedestrianisation-around-the-world/ [22] yesmagazine.org/economy/2021/05/05/15-minute-city-walk [23] timeout.com/los-angeles/news/santa-monica-charming-main-street-is-turning-into-a-pedestrian-plaza-on-some-summer-weekends-042821 [24] mainstreetsm.com/ [25] thecityatyelevel.com/stories/longread-milan-before-and-after-citywide-placemaking/ [26] santamonica.gov/pedestrian-action-plan [27] swarco.com [28] yunextraff.com/ [29] swarco.com/products/traffic-light-controllers [30] utilitydive.com/news/entergy-louisiana-resilience-grid-hurricanes/639265/ [31] entergynewsroom.com/news/entergy-new-orleans-completes-louisiana-s-largest-commercial-rooftop-solar-project/ [32] fastcompany.com/90671663/in-new-orleans-a-solar-microgrid-is-keeping-lights-on-in-this-affordable-apartment-building [33] solalt.com/sbp-creates-louisianas-first-commercial-solar-microgrid/#:~:text=The%20new%20system%20powers%20SBP's,commercial%20facility%20in%20the%20state [34] nacto.org/docs/usdg/stormwater_planter_crwa.pdf [35] greenlightneworleans.org