

SUSTAINABLE TIMES

YOUR GUIDE TO THE GREEN SCENE



WHAT'S NEW

WHAT ARE GRANNY FLATS?

How do Granny Flats create a more sustainable community?

BIORETENTION BASINS

What are they?

EAST PALESTINE OHIO

What can we learn from the train derailment?

INTERESTING ENVIRONMENTAL FACTS:

- The combined weight of ants on the planet makes them heavier than all human beings.
- About 10 million trees are cut down every year to make toilet paper.
- Fungi are more closely related to animals than plants.
- There will be more plastic in our ocean than fish by 2050.

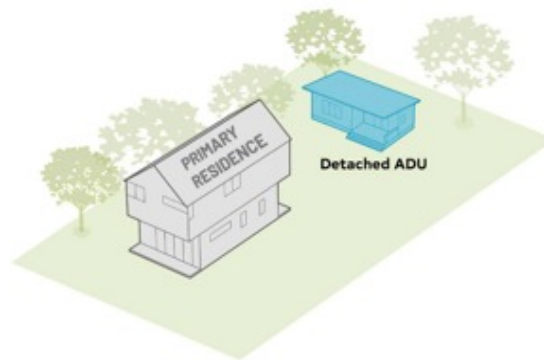
WHAT ARE GRANNY FLATS? HOW CAN THEY HELP PREVENT URBAN SPRAWL?

Accessible dwelling units (ADUs), colloquially known as “Granny Flats” or “Mother-In-Law Suites”, are a feasible way to slow suburban land consumption. An ADU is defined as “a unit including separate cooking and sanitary facilities... a complete, separate dwelling unit.” While these spaces are primarily created by homeowners, designers and developers are often involved in the process to ensure quality and code compliance. Because Charlotte is 11th and Raleigh is 2nd on the list of fastest growing markets in metro areas, it is vital that developed land is used efficiently for sustainable growth. Moreover, with 84 (Charlotte) and 64 (Raleigh) people moving to these cities daily, there is a significant demand for more housing.

The addition of an accessible dwelling structure allows property owners to lodge relatives and other guests or even house a tenant. By increasing the number of residential developments with ADUs, the demand for elderly housing and rental properties can be reduced. Because accessible housing developments allow for additional occupants per lot and they typically rent for less than market rate, ADUs are an effective tool for providing more affordable housing! The granny flat is an especially topical subject in Charlotte and Raleigh since there have been recent ordinance changes encouraging ADU developments in both cities.

In Raleigh, the 2020 TC-16-19 ordinance finally permitted homeowners to build attached, detached, or internal living space for use as an accessible unit. TC-16-19 also provides detailed language supporting the development of these spaces. By making accessible dwellings exempt from UDO 6.7 accessory use regulations and UDO 7.1.1 additional parking requirements, the Raleigh ADU ordinance allows for a great deal of flexibility in development.

More recently, in Charlotte, the new unified development ordinance (effective June 1st, 2023) included several changes encouraging the development of ADUs. By allowing for larger accessible spaces and expanding the types of properties and zoning districts that accessible units can be developed on, ADU development has become much more viable for homeowners in The Queen City.



ALTERNATIVE METHODS OF STORM WATER QUALITY; BIORETENTION BASIN



Bioretention is a method of treating storm water runoff. A bioretention basin utilizes special engineered soil, mulch or grass and other plant material to control the runoff by allowing it to infiltrate into the soil, where the plants uptake the nutrients that run into the basin. They can be installed in a variety of soil types from clay to sand and in a wide variety of sites. They are also one of the most effective SCMs for removing pollutants, because they use many different pollutant removal mechanisms, including infiltration, absorption, evapotranspiration, microbial action, plant uptake, sedimentation, and filtration. A bioretention basin can be used to treat a variety of sized drainage areas. It is recommended that nothing over 5 acres should be treated in the bioretention basin. They should be designed to include a pretreatment device. A pretreatment device could be a grass strip or a forebay.

Bioretention basins can be utilized as a landscaped feature. Using the plant materials to create a functional and attractive landscaped element. The plant material of the basin should be tolerant of dry conditions and wet conditions for short periods of time. Native species should be chosen over nonnative species and selected based off Hydric tolerance.

LEARNING FROM THE EAST PALESTINE, OHIO CHEMICAL SPILL



The East Palestine train derailment caused significant environmental damage in the surrounding area. As the freight train derailed, several of its cars carrying hazardous materials, such as toxic chemicals and petroleum products, ruptured and leaked their contents into the environment. This led to the immediate contamination of nearby soil, waterways, and air, posing a serious threat to local ecosystems and public health. The spilled chemicals and petroleum products seeped into the soil, potentially contaminating groundwater sources and agricultural land. This contamination could have long-lasting effects on the area's ability to support plant and animal life, impacting local biodiversity and agricultural productivity. Furthermore, the pollutants could potentially infiltrate drinking water sources, endangering the health and well-being of nearby communities.

The incident also had adverse effects on nearby water bodies, as the spilled chemicals and oil likely found their way into rivers, streams, or other waterways. This contamination posed a significant risk to aquatic life, disrupting ecosystems and potentially leading to fish kills and other adverse effects on wildlife that rely on these water sources.

In order to avoid untimely explosions, officials intentionally burned off some of the chemicals. The burning of one of the main chemicals aboard the train (vinyl chloride) can produce other toxic chemicals as hydrogen chloride and phosgene. These two chemicals are extremely toxic to humans. Phosgene was used as a chemical weapon in World War 1.

As details surrounding the derailment unfolded, it was discovered that a faulty section of track was one of the contributing factors to the accident. This highlighted the critical need for rigorous and frequent checks on railway infrastructure to identify potential issues before they escalate into disasters. Additionally, the incident underscored the significance of implementing advanced monitoring technologies to detect anomalies and ensure the safety and integrity of the tracks.

The East Palestine train derailment served as a stark reminder of the importance of maintaining and inspecting railway infrastructure regularly while also highlighting the significance of effective emergency response plans. The lessons learned from this event should serve as a catalyst for continuous improvement in railway safety and response procedures, ultimately striving towards preventing similar accidents in the future.