

ARBORICULTURE NEEDS IN SOUTH AFRICA.

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INTRODUCTION

The South African Constitution Act 108 of 1996 section 24 a. states that “everyone has the right to an environment that is not harmful to their health or well-being”. Section 24 b.” states that everyone has the right to have the environment protected, for the benefit of present and future generations”. The same section goes on to state that reasonable legislative and other measure must -prevent pollution and ecological degradation as well as promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

Chapter seven of the National Constitution lays out what the objects and development duties of the third tier of local government must achieve. In the case of the objectives it must promote a safe and healthy environment by involving the communities and community organisations in decision making. The White Paper on Local Government (1988) also spells out (Powers and Functions) and any other function delegated down that need to be carried out.

Further the Local Government: Municipal Systems Act – Act 32 of 2000 states in section 26 that a Council must reflect the core components of the IDP in its development plans that is after in terms of section 29(1)(b) the local community has been consulted on its development needs and priorities.

Thereafter these community members must be part of the capture process of these needs which include green infrastructure needs (compliance with Constitution) within the Integrated Development Plan of the Council for roll out. These key performance indicators must also be made known to the public and they must be audited to ensure that these measurable performance targets are being met.

Further South Africa as signatories to the Paris Climate Change Agreement should produce a long term, low greenhouse gas emission development strategy by 2020. That includes – a clear strategic vision and actionable policy option- and include the highest level of political and technical leadership for strong accountability- within the whole government approach – after effective stakeholder engagement and consultation. Notice must be taken of the fact that the MSA requires consultation as does the Climate Change agreement. Unfortunately, it appears the government of the day has not yet produced a framework document from which local government can take guidance.

Nor does it appear that a locally produced guideline exists on the role out of green infrastructure, unless you turn to FAO of the United Nations where a document entitled “Guidelines on Urban and Pre-urban Forestry” exists. Further, on investigation none of the Councils had a functional “Urban Forestry Stewardship Plan” in place, not did they

have urban forestry by-laws in place. Some Councils tree policies are in place but they do not contain sufficient information to be considered as stewardship plans or by-laws.

EDUCATION

To be able to work and control the field of Arboriculture one needs trained staff, to undertake this work. Unfortunately, no formal training in this field is provided in any of the Universities or Universities of Technologies, but some of the relevant subject matter is taught as subject material within the field of horticulture. Other important aspects of this field of expertise is to be found within the South African Qualification Authority stable and is separate from that taught as subject matter in the horticultural field. These subjects are also not coupled to each other, nor form a separate qualification. Some subjects (highlighted) are not offered in South Africa as can be seen in the table below-

ARBORICULTURE EDUCATION TABLE.

| | | | |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Arboriculture: Certificates 1&2 | <ul style="list-style-type: none"> • Soil science • Plant selection and supply • Inspections and surveys • Pruning and felling • Tree ill health • Amenity woodlands | <ul style="list-style-type: none"> • Physiology • Selection • Planting/aftercare • Tree surgery • Ecology • law | |
| Diploma in Arboriculture and Urban Forestry 2&3 | <ul style="list-style-type: none"> • Health and safety: safe working practices • Work experience • Habitat management • Planting/aftercare • Cross cutting and stacking • Arial and ground level skills • Tree identification • Woodland management • Soils science • Pest and diseases | <ul style="list-style-type: none"> • Health and safety: safe working practices • Work experience • Tree climbing • Chainsaw use • Pest and diseases • Tree surveys • Woodland ecology& management • Business • Tree pruning/arboriculture skills • Machinery and science | |
| BSc(Hons) Arboriculture and Urban Forestry | <ul style="list-style-type: none"> • Tree Biology -Dendrology • Ecology -Research • Biosecurity | <ul style="list-style-type: none"> • Trees in the landscape • Woodland and Veteran Tree Management | <ul style="list-style-type: none"> • Urban Forestry-Greenspace Management • Management of Tree Risk |
| Horticulture Diploma Old Course 1-2-3 | <ul style="list-style-type: none"> • Environmental • Soils • Plant usage/functions | <ul style="list-style-type: none"> • Pest management • Plant pathology • Nematology • Biodiversity/sustainability • EIA'S | <ul style="list-style-type: none"> • Utilitarian use of trees • Arb tree care |

| | | | |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Sustainable Horticulture Diploma1-2-3 | <ul style="list-style-type: none"> • Plant taxonomy/nomenclature • Factors affecting plant selection • Felling and stumping • Tree audits • Tree and the law • Identifying problematic trees • OHS Act /Risk management | <ul style="list-style-type: none"> • Arboriculture principles and practices • Specialized techniques for plant forms • Characteristics of soils • Eco-system & interactions • Pest & diseases-environment • Environmental conservation/restoration | |
| Forestry Diploma1-2-3 | <ul style="list-style-type: none"> • Tree breeding • Planting and tending • Soil rehabilitation • Identify/describe important tree species • Ecological concepts | <ul style="list-style-type: none"> • Identifying key types of damage-abiotic & biotic factors • OHS Act • Key elements of Environmental Legislation | <ul style="list-style-type: none"> • Tree planting • Post planting/tending |

As can be seen by this table there is a shortfall of subject material within the horticulturist field of expertise which needs to be addressed or another separate field of expertise developed. Further the subject matter that is being provided under the SAQA umbrella need to be joined to the horticulturist subject list.

Although the Occupational Health and Safety Act is covered in the new sustainable diploma in horticulture it is not clear if the Amendment Act 181 of 1993 is also covered in the syllabus and whether the inspection of trees which are Council assets are required to be inspected. Street trees could fall under the classification of a potential hazard if not inspected regularly to ensure that they are not infested with the polyphagous shothole borer” *Euwallacea fornicatus*” and related fungus species killing them and causing death or destruction when these infected trees and branches fall.

Also, that these street trees have been pruned and shaped to prevent wind or storm damage which could cause fatalities or damage. Care must also be taken, that these trees are also pruned to the correct height as laid down in the Traffic Ordinance to allow for large vehicles and pantechnicons to pass by and under without being damaged.

The research results also pointed out several major anomalies in the training of staff. Firstly, is the question of the need for doing tree risk assessments and the fact that the Council can be held accountable/liable for failing to maintain trees is not well known. No optimal plan for tree maintenance and protection is in place. It also appears that trees and other material has not been planted for noise barriers. Unfortunately, only limited knowledge is available in the field of safe root pruning, tunnelling under trees and the use of growth retardants on trees and the use of rubberized paving around trees. Also, what staff should do when they find themselves having to deal with a tree which has collapsed over power lines.

Most of the respondents were of the view that Arboriculture training should be provided in this country, be it included within the horticulturist table of subjects or a stand-alone field of expertise. Also, there was support for Arboriculture Short Courses to be provided to cater for staff who are out in the workplace without sufficient knowledge to undertake this important tree work.



Image: Wikipedia

Polyphagous Shothole Borer” Euwallacea fornicatus”

Table 2.1: Maximum Overall Legal Dimensions (GVM/GCM exceeds 12 t)

| Vehicle Type | Overall Length (m) | Overall Width (m) | Overall Height (m) | Example |
|------------------------|--------------------|-------------------|--------------------|---------|
| Single vehicle (Rigid) | 12.5 | 2.6 | 4.3 | |

Road Traffic Vehicle Height Clearance.

OTHER SURVEY RESULTS

What must be mentioned here is that both the practicing horticulturists, conservationists and landscape architects in local government practice as well as the management of the local authorities were questioned separately, and it is interesting to note the large differences of opinion expressed between these two groups on the same topic.

When questioned on whether the parks and recreation need of their respective communities as well as the urban forestry need of the communities had been determined by consultation. In both cases, most of the employers agreed the determination had taken place while many of the employees/ratepayers disagreed that these needs had been determined.

The employer component claim that their respective Integrated Development Plans do contain tree planting and urban forestry needs while the employees disagreed with this view. The few IDP's which I managed to view had no provision made in them.

As to whether the respective Councils are meeting the Constitutional environmental requirements and striving to attain the COP21 targets. The employers agree while the employees disagree with this view expressed. What is also of concern is the fact that both parties agree that there is not sufficient political and other support for urban forestry. Can this be put down to the lack of exposure, personal knowledge and or training?

Whilst it is common known that funding for service delivery is limited, the questionnaire revealed that no alternatives for rendering the green infrastructure service had been developed and implemented.

Although, both parties largely agreed that a co-operative service delivery could be put in place. No party could show that agreements with Conservancies and Garden Clubs were in place. Nor could they show that tree planting would be undertaken by the Council in streets where residents would undertake to water and do basic maintenance around the trees once planted.

As far as education of the residents, no plans where this was successfully being undertaken were produced. Not even where school children had been encouraged to look after trees on behalf of the community until they were of a suitable size to be planted out, ensuring a personal attachment to the tree and its welfare. Or residents who raise and nurture trees for planting in pre-determined sites on Arbor Day.

Both surveyed parties were highly concerned about the state of the canopy cover of the city/town, but no plan was available to view to show how the municipality was ensuring that trees removed were being replaced as well as additional trees were being planted to increase and or maintain the level of canopy cover of the region. Not even the question of trees being donated in memory of a loved one and being planted has taken root in any Council to benefit the overall canopy of trees.

Where both surveyed parties failed to realise which reflects a lack of knowledge and training is the fact that international research has shown that each tree have a value and that trees on verges/pavements increase the overall value of properties near them. This in turn could increase the overall rates base for a Council and thereby generate more funds for service delivery besides all the health and other benefits of trees that also accrue.

CONCLUSION.

A lot more attention must be given to this field of expertise by both the National, Provincial and Local government to achieve the requirements as laid down in the Constitution as well as the targets set in the COP21 agreement signed by the South African government.

The education field also needs vital attention to address the backlog and bring it up to the accepted level so that this greening process can be rolled out successfully and the country can reach an acceptable level of expertise.

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