CONCORSO PUBBLICO, PER ESAMI, PER IL RECLUTAMENTO A TEMPO PIENO E INDETERMINATO DI N. 378 UNITÀ DI PERSONALE DI CATEGORIA D – DIVERSI PROFILI PROFESSIONALI – E DI N. 199 UNITÀ DI PERSONALE A TEMPO PIENO E DETERMINATO DI CATEGORIA D IN ESECUZIONE DELLA DELIBERAZIONE DI GIUNTA COMUNALE N. 200 DEL 31/05/2022 AVENTE AD OGGETTO "PIANO TRIENNALE DEI FABBISOGNI DI PERSONALE 2022/2024" E S.M.I. E DELLA DELIBERAZIONE DEL SINDACO METROPOLITANO N. 94 DEL 31/05/2022 AVENTE AD OGGETTO "PIANO TRIENNALE DEL FABBISOGNO DI PERSONALE 2022/2024 " E S.M.I.

Profilo Istruttore Direttivo Agronomo

N.	Tracce prova orale comprensive di quelle volte all'accertamento della conoscenza della lingua inglese - Codice Concorso AGR/D
1	Cosa è il PAN fitosanitario
2	Cosa sono i prodotti fitosanitari
3	Distanze degli alberi dai confini
4	Endoterapia
5	Funzioni e responsabilità del Coordinatore della sicurezza in fase di progettazione e di esecuzione
6	Gestione degli alberi monumentali
7	Gli elementi essenziali dell'atto amministrativo: la motivazione
8	Gli interventi di manutenzione in ambito urbano sono da considerare interventi eseguiti in cantieri mobili, come gestire la sicurezza per gli operatori
9	Il Codice di comportamento nel pubblico impiego

N.	Tracce prova orale comprensive di quelle volte all'accertamento della conoscenza della lingua inglese - Codice Concorso AGR/D
10	Il conflitto di interesse da parte del Responsabile del procedimento
11	Il consolidamento statico degli alberi
12	L'esecuzione dei lavori pubblici: Le garanzie in fase di gare ed in fase di esecuzione.
13	La protezione della porzione aerea dell'albero in area di cantiere
14	L'accesso documentale disciplinato dalla l n.241/1990 e l'accesso civico disciplinato dalla l.n. 33/2013
15	Le ordinanze ordinarie e contingibili e urgenti: competenze e ambiti di applicazione.
16	Le potature di mantenimento in ambito urbano
17	Le sezioni del PIAO. Piano delle Performance
18	Lotta integrata, Lotta biologica, Lotta convenzionale
19	Metodi di diserbo in ambito urbano
20	Normativa abbattimenti alberi
21	Problematiche fitosanitarie delle alberature di Leccio in ambito urbano
22	Problematiche fitosanitarie delle alberature di Pino in ambito urbano
23	Problematiche fitosanitarie delle alberature di Platano in ambito urbano

N.	Tracce prova orale comprensive di quelle volte all'accertamento della conoscenza della lingua inglese - Codice Concorso AGR/D
24	Regolamento del verde
25	Rispetto dell'avifauna e gestione delle alberature
26	Ruolo e funzioni degli organi degli Enti Locali
27	Valutazione stabilità di un albero
28	Analisi visiva per la valutazione fitostatica di un albero
29	CAM
30	Criteri per la realizzazione delle aree verdi
31	Diritti e doveri del dipendente pubblico
32	Distanze degli alberi dai confini (11)
33	Endoterapia
34	Funzioni e responsabilità del Direttore dei lavori.
35	Gestione differenziata del verde in ambito urbano
36	Gli elementi essenziali dell'atto amministrativo: la motivazione.
37	Gli interventi di manutenzione in ambito urbano sono da considerare interventi eseguiti in cantieri mobili, come gestire la sicurezza per i fruitori dell'area

N.	Tracce prova orale comprensive di quelle volte all'accertamento della conoscenza della lingua inglese - Codice Concorso AGR/D
38	I compiti del Consiglio Comunale
39	Il candidato esamini le tipologie dei provvedimenti amministrativi.
40	Il conflitto di interesse da parte del Responsabile del procedimento
41	Il consolidamento dinamico degli alberi
42	Il D.U.V.R.I.
43	Il Passaporto delle piante
44	Interventi di spalcatura arborea quando e perché?
45	La Fisiopatie
46	La programmazione negli enti locali. Il Piano triennale delle OO.PP.
47	le finalità della Legge n. 241/1990 ed il ruolo del responsabile del procedimento.
48	Le garanzie in fase di gare ed in fase di esecuzione.
49	Le potature d'impianto in ambito urbano
50	Lotta integrata, Lotta biologica, Lotta convenzionale
51	Malerbe infestanti potenzialmente pericolose in ambito urbano

N.	Tracce prova orale comprensive di quelle volte all'accertamento della conoscenza della lingua inglese - Codice Concorso AGR/D
52	Perché realizzare analisi strumentali per la verifica della stabilità arborea e quali analisi scegliere
53	Potature delle conifere
54	Problematiche del prato in ambito urbano
55	Problematiche fitosanitarie delle alberature di Ippocastano in ambito urbano
56	Problematiche fitosanitarie delle alberature di Tiglio in ambito urbano
57	Quando è necessario consolidare un albero
58	Ruolo e compiti del responsabile anticorruzione nell'ente locale
59	Stanchezza del terreno, definizione e misure di controllo
60	Lotta integrata, Lotta biologica, Lotta convenzionale
61	Presenza dell'olivo come pianta ornamentale: potenziali problematiche
62	Impatto di Phylloxera quercus e CERAMBIX CERDO su leccio
63	Riconoscimento della Processionaria del Pino in ambiente urbano, pericolosità e metodi di controllo
64	Aromia Bungi ed altre problematiche del Prunus
65	Problemi radicali delle piante in ambiente urbano

N.	Tracce prova orale comprensive di quelle volte all'accertamento della conoscenza della lingua inglese - Codice Concorso AGR/D
66	Impatto delle crittogame sull' assetto statico delle alberature
67	Impatto dei fitofagi sull' assetto statico delle alberature
68	Cosa sono le Lotte obbligatorie
69	Messa a dimora di alberature o arbusti di confine, scelta delle essenze, problematiche e distanze
70	Scolitidi
71	Metodologie applicative in endoterapia
72	Potenziali problematiche del reimpianto
73	Come si classificano i prodotti fitosanitari in base all' attività che svolgono e quali sono i loro componenti
74	A.1.2 - Certificati di abilitazione all'acquisto dei fitosanitari e all'utilizzo e certificati di abilitazione alla vendita A.1.3 - Certificati di abilitazione alla consulenza. Dove troviamo la normativa di riferimento e cosa sono
75	Il Censimento arboreo
76	Il piano di monitoraggio e gestione del verde
77	Le potature straordinarie in ambito urbano
78	La protezione della porzione ipogea dell'albero in area di cantiere
79	Perché realizzare analisi strumentali per la verifica della stabilità arborea e quali analisi scegliere

N.	Tracce prova orale comprensive di quelle volte all'accertamento della conoscenza della lingua inglese - Codice Concorso AGR/D
80	Rinnovo del tappeto erboso
81	Gestione degli alberi monumentali
82	Potature delle latifoglie
83	Metodi di diserbo in ambito urbano
84	Cosa sono i DPI e quali sono da utilizzare nei cantieri di manutenzione "giardini"
85	Gestione delle siepi in ambito urbano
86	Il consolidamento statico degli alberi
87	Le latifoglie e tecniche di potatura
88	CAM e progettazione di aree a verde
89	Tecniche d'impianto di esemplari per la realizzazione di filari stradali di neo formazione
90	Le potature straordinarie in ambito urbano
91	La protezione della porzione ipogea dell'albero in area di cantiere
92	Gestione degli alberi monumentali
93	A.1.2 - Certificati di abilitazione all'acquisto dei fitosanitari e all'utilizzo e certificati di abilitazione alla vendita A.1.3 - Certificati di abilitazione alla consulenza. Dove troviamo la normativa di riferimento e cosa sono

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94	Messa a dimora di alberature o arbusti di confine, scelta delle essenze, problematiche e distanze
95	Problematiche con possibili soluzioni endoterapiche per palme e pini
96	Il Candidato illustri diritti e doveri del dipendente pubblico
97	Il Candidato illustri ruolo e compiti del responsabile anticorruzione nell'ente locale.
98	Il Candidato illustri ruolo e funzioni degli organi degli Enti Locali
99	The recently introduced concept of sustainable arboriculture represents the maintenance of the long term efficiency of the urban ecosystem in an environmentally conserving and safe manner coupled with economic viability, social justice and equity for the citizens. Although the importance of urban green areas has been acknowledged globally to be of outmost importance, the term "sustainable arboriculture" is often used loosely and in a general manner as a label, brand or icon to make it acceptable to all types of stakeholders and under various environments. The experiences described before show the high potential of urban arboriculture to be part of a sustainable development for the future city environment. However, arboriculture and the promotion of its contribution to sustainable development at large require a comprehensive approach, since it needs to be linked to a broad range of issues and agendas.
100	Pruning is one of the most important tree maintenance activities which gives a big impact on tree's health and structure. A wellpruned trees are not only able to maintain tree health, but also will provide a safe environment and enhance the aesthetic value. On the other hand, improper pruning will danger the public. The aim of this study is to assess pruning knowledge among Kuala Lumpur City Hall (DBKL) tree maintenance workers. Findings from this study will contribute to recommendations for changing knowledge for proper tree pruning which helps to raise the quality of tree management practices. 1-b) pruning is at the heart of arboriculture, one of the most important services arborists provide. To paraphrase Alex Shigo (1989), pruning can be one of the best things an arborist can do for a tree and one of the worse things an arborist can do to a tree. Pruning impacts both tree health and structure. It is practiced worldwide. In 2007, the International Society of Arboriculture (ISA) contracted HortScience, Inc. to prepare a literature review on the topic of pruning. The focus of the review was the research literature. The emphasis was on arboriculture but the review could reference forestry and pomology literature as appropriate.

N.	Tracce prova orale comprensive di quelle volte all'accertamento della conoscenza della lingua inglese - Codice Concorso AGR/D
101	Platanus occidentalis L. (sycamore) is an important shade tree distributed throughout the Northern Hemisphere and in South Korea. It has been widely used as an ornamental tree, especially in urban regions and by roadsides. The average rate of roadside planting throughout South Korea covers about 5.7% (up to 38% in Seoul), equivalent to 0.36 million trees. In early July 2012, after a rainy spell in summer, an outbreak of powdery mildew on sycamore was first observed on roadside trees in Gwangju, a southern province of South Korea. A more extensive nationwide survey revealed no powdery mildew in northern or central regions of South Korea. The disease has spread rapidly within Gwangju, even though fungicide applications were carried out after the rainy spell. Major symptoms included white, superficial mycelia, grey to brown lesions on the surface of the leaves due to the presence of a hyperparasite (tentatively identified as Ampelomyces sp.), a slight chlorosis, and severe leaf distortion followed by defoliation.
102	Oriental plane (Platanus orientalis L.) is native in the Balkan Peninsula, extending eastward to Asia Minor, Iran and central Asia. It is a valuable, fast-growing forest tree species, occurring naturally in a large part of Greece, mainly on moist sites along streams and rivers. It is also commonly planted as an ornamental in Greece, being one of the characteristic features of village squares and recreation areas close to natural springs. Oriental plane is a long-living tree attaining large dimensions, among the largest tree species in the country. In many areas of Greece there are centuries-old plane trees of historic value, and some of them have been declared as "Protected Monuments of Nature". Canker stain, caused by Ceratocystis platani (Walter) Engelbrecht et Harrington (syn.: Ceratocystis fimbriata Elis & Halstead f. platani Walter), is a fatal disease of plane trees. It was reported in Greece in 2003 (Tsopelas & Angelopoulos 2004). The fungus is of American origin.
103	Considerable attention has been paid to the benefits that urban trees provide and recent research has focused on how the distribution of trees in the urban landscape is affected by socioeconomic processes like social stratification, as indicated by associations with income, race, ethnicity, and education. These studies have found marked disparity in urban canopy cover, with primarily low income and minority neighborhoods commonly being underserved. However, few studies have investigated the potential to overcome urban canopy inequities through urban planning and reforestation. This question becomes even more important as many U.S. cities pledge to increase urban canopy cover as part of larger climate change mitigation strategies. Can today's heavily developed U.S. cities use these tree planting initiatives to increase equity in urban canopy cover while still providing the infrastructure and housing necessary for expected population growth? This case study characterizes the socioeconomic drivers of the current urban canopy cover in Boston, Massachusetts, and further explores the possibility of distributing trees to increase equitable access to environmental justice and ecosystem services, while meeting housing and infrastructure needs. Results suggest that even when tree planting initiatives focus specifically on increasing canopy cover for environmental justice communities, equitable distribution of urban trees is difficult to achieve.

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104	The tree is a fundamental living being. It contributes to nature and climate behaviour, as well to urban greening. It is also a source of wealth and employment. Most tree health inspection techniques are invasive or even destructive. Infrared thermography (IRT) is not invasive, and it has shown advantages when applied for inspection to trees and wood to detect deterioration or voids that could compromise its structure, stability, and durability. This study reviews the literature about IRT applied to a tree health inspection. It is framed in the context of the importance of trees for the balance of ecosystems, and the different techniques to detect tree deterioration. It highlights the difference when applied to wood or trees and the main factors that have been proven to cause disturbances in the thermal pattern of trees. The IRT, as other non-destructive methods, does not distinguish what type of damage it is, nor its causative agent. However, it enables identifying healthy and deteriorated tissues. The technology is very promising since it reveals that is efficient, fast, economical, and sustainable.
105	The predicted change in our climate is likely to inflict particular stresses on the trees and other plants constituting urban and peri-urban greening schemes, and this may increase their susceptibility to certain pests and diseases. This review highlights the various ways in which climate change may affect the health of urban trees in Britain. In summary, climate change may alter patterns of disturbance from pathogens and herbivorous insects through physiological changes in the host plant. The expected changes in temperature and moisture availability will also directly affect the development and survival of the pests and pathogens, and their natural enemies, competitors and vectors. This may alter the impact of native pests and diseases and increase the populations of some species not currently recognized as pests to epidemic proportions. Perhaps most significantly, climate change is very likely to enhance the suitability of our climate for a range of non-native pests and pathogens, many of which are brought in unknowingly on infected planting stock sourced for new greening schemes. The global trade in 'plants for planting' is a recognized pathway for the accidental introduction of pests and pathogens even though plant health legislation exists to minimize such accidental introductions. The limitations of the procedures currently in place are discussed.

N.	Tracce prova orale comprensive di quelle volte all'accertamento della conoscenza della lingua inglese - Codice Concorso AGR/D
106	In September 2003, dead and dying plane trees (Platanus orientalis) were observed in seven different localities of the Messinia prefecture of the south-western Peloponnese, Greece. Cankers were found on both trunks and branches. The inner bark and the cambial region of the cankered area were discoloured bluish-black and the underlying wood stained dark reddish-brown to bluish-black. Stained streaks extended longitudinally in the wood beyond the dead bark. In cross-section, the stained wood formed characteristic radial patterns. The fungus Ceratocystis fimbriata f. sp. platani was consistently isolated from stained wood near the canker margins. Cultures on malt extract agar (MEA) were hyaline to light olive brown, with a radial growth rate of 12– 15 mm week−1 at 24°C and had a pronounced smell of banana. Black, globose perithecia (150–300 µm in diameter) with a long neck (500–800 µm in length) were observed on 1-week-old cultures. The ascospores were 4– 6 × 3–5 µm, having a characteristic bowler hat shape. All three types of asexual spores were also observed: hyaline, truncated, cylindrical endoconidia; light doliform endoconidia; and dark, thick-walled conidia (chlamydospores) (Webster & Butler, 1967). Ceratocystis fimbriata f. sp. platani is considered to be indigenous to the USA. In Europe the pathogen has caused severe attacks in Italy and France.
107	Ash trees (Fraxinus spp.) in North America are being severely impacted by the invasive emerald ash borer (Agrilus planipennis Fairmaire) which was inadvertently introduced to the US in the 1990s from Asia. The emerald ash borer (EAB) is a phloem boring beetle which relies exclusively on ash trees to complete its life cycle. Larvae feed in the cambial tissue forming serpentine galleries that may girdle the tree, causing mortality in as little as two years. Although larval feeding is thought to be the cause of rapid tree mortality, the relationship between tree-level water stress and EAB larval activity has never been quantified. Identifying symptoms of an emerald ash borer outbreak at an early stage can facilitate informed management decisions. Although a user-friendly system of ash canopy condition rating has been used extensively to study EAB impacts, the mechanistic relationship between canopy ratings and EAB larval activity has not been quantified. The objective of this research was to use the stable carbon isotopic composition of canopy leaf tissue (foliar d13C, a proxy of tree level water stress) to quantify the mechanism by which EAB causes tree mortality and to relate this mechanism to the ash canopy condition rating system. We found that as the canopy condition was rated as less healthy, EAB density and gallery cover increased, and foliar d13C became more enriched as well. This study highlights the usefulness of the ash canopy condition rating system as a proxy of emerald ash borer densities at the tree level

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108	As an important part of the urban environment, trees have certain risks while living in harmony with humans. For example, the failure of trees in extreme weather may cause casualties and damage to public and private; the decline and death of old and valuable trees can have an impact on the diversity and cultural value of trees. This paper outlines the theories related to tree risk and the development of tree risk assessment, evaluates the advantages and disadvantages of various tree risk assessment methods in existing studies, and explains some factors affecting the bearing capacity and related applications using knowledge of tree mechanics. Approaches in modern probing techniques are applied to study the response and loading of tree crowns and branches under wind loads, the application of different non-destructive testing techniques in visual assessment for detecting internal defects and root distribution of trees, and the role and impact of objective quantitative test results on tree risk assessment. Finally, the future development direction of tree risk assessment is predicted, which provides an important reference for research on tree risk assessment.
109	The literature on human experience in green environments had widely showed the positive outcomes of getting in contact with nature. This study addresses the issue of whether urban residents' evaluations of urban and peri-urban natural settings and the positive outcomes deriving from contact with such settings vary as a function of their biodiversity. A field study assessed benefits and subjective well-being reported by urban residents visiting four differenttypologies of green spaces, selected on the basis of urban forestry expert criteria according to a 2 × 2 factorial design. The biodiversity level (low vs. high) was crossed with the setting location (urban vs. peri-urban) as follows: urban squares with green elements, urban parks, pinewood forest plantations, and peri-urban natural protected areas. A questionnaire including measures of length and frequency of visits, perceived restorativeness, and self-reported benefits of the visit to the green spaces was administered in situ to 569 residents of four Italian medium-to-large size cities: Bari, Florence, Rome and Padua. Results showed the positive role of biodiversity upon perceived restorative properties and self-reported benefits for urban and peri-urban green spaces. Consistently with the hypotheses reported herein, a mediation role of perceived restorativeness in the relation between experience of natural settings (i.e. higher level of biodiversity) and self-reported benefits was found. The design and management implications of the findings are discussed

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110	Benefits of trees in the urban environment include reduction of pollution and atmospheric carbon, shading and reduction of temperature, better visual impact and an increase in human health and wellbeing. Despite the short life-span of city trees, still not enough research has been dedicated to the major aspects of growing trees in urban environment. Urban conditions differ very much from natural habitat, where trees have evolved and adapted. A better understanding of the physiology of urban trees and of the interaction between the urban environment and the physiological processes in trees is a key feature to increase the health of plants, their value and their life span. Drought, soil compaction and waterlogging are among the main causes of death in urban environment. They limit root growth and nutrient absorption and, by consequence, leaf gas exchange. This makes trees more sensitive to pathogens, especially those affecting the root system. Increase in soil and air temperature, due to wide use of asphalt and concrete, is another cause of death for trees. High soil temperature limits root growth and causes high fine-roots mortality, loss of turgor, cell membrane denaturation while high air temperature causes a reduction of whole plant gas exchange. In this review, the tree physiology as influenced by typical environmental constraints of urban stands is described.
111	We performed a literature search to identify and evaluate research that has been published related to tree risk assessment. The topic is quite broad because it considers aspects of biomechanics: architecture, structure, decay and other defects, root characteristics, wood properties; site conditions: topography, geomorphology, soils and hydrology; and weather conditions: endemic and catastrophic storms, wind, snow, ice, and rain. A variety of tools, equipment and techniques have been developed to evaluate tree stability. There are legal issues surrounding our duty, standard of care and liability. In addition, there are a host of topics addressing social, psychological and technical aspects of risk, particularly associated with how arborists quantify, rank and describe it. Tree risk assessment is a broad area of expertise that combines many disciplines. There is a large body of scientific literature about biomechanics, wind in trees, soils, wood decay, and other topics that relate to tree risk assessment. However, there are major gaps in research that is directly applicable to our professional practice. Arborists need to stay current in the scientific literature related to tree risk assessment, and use that knowledge to help make sound professional judgments

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112	Arboriculture is a profession growing, especially in big cities, where urban green areas and urban trees must be maintained and it seems strange that still there aren't academic studies about safety, ergonomics and efficiency as well as agricultural field (Cecchini et al. 2010), like hazelnut sorting (Colantoni et al. 2013) or vegetable grafting (Colantoni et al. 2012). Several risk factors incumbent above arborists should be analyzed, first of all fall from height, followed by risks arising from the use in height of the chainsaw (cut, noise, vibration, hydrocarbon combustion residue and wood powder inhalation), electrocution. Not least the ergonomics problem, due to required posture for pruning and dismantling with the harness. Furthermore several working methods are taught in the different training centers, but nothing is known about which is the most safe, productive, less tiring for the operator and less frying for tools. New depth studies are desirable, to improve safety and productivity to this emergent kind of work, that is dedicated to the proper management of urban green areas.
113	Results of an experiment aimed at assessing the possibility of reusing reclaimed wastewater for nursery ornamental plants are presented. Tests were carried out in Pistoia (Italy). A pilot plant for tertiary treatment (filtration and peracetic acid + UV disinfection) of the local wastewater treatment plant (WWTP) effluent was set up. An experimental plot with six containerized ornamental species was irrigated with the tertiary effluent and growth and physiological parameters were monitored. A control plot irrigated with fertigated water (nutrient-enriched groundwater) was also set up in order to compare the plants response to different kinds of irrigation water. The refinery treatment by filtration and disinfection with Peracetic Acid (PAA) and UV together was very effective in bacteria removal. The value of 2 MPN of Total Coliforms in 100 ml set by Italian law (until June 2003) for unrestricted irrigation was constantly satisfied. Agronomic results indicate no major limitations to the use of a tertiary effluent as an irrigation source in an ornamental plant nursery. The nutrient content of the tertiary effluent was able to maintain good plant growth as well as fertigated water for most of the tested species.

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114	It is known that the urban environment amplifies the effects of climate change, sometimes with disastrous consequences that put people at risk. These aspects can be affected by urban vegetation and planting design but, while there are thousands of papers related to the effects of climate change, a relatively limited number of them are directly aimed at investigating the role of vegetation as a mitigating factor in the urban context. This paper focuses on reviewing the research on the role of urban vegetation in alleviating the adverse conditions of the urban environment in order to provide some practical guidelines to be applied by city planners. Through an analysis of the documents found in Scopus, Web of Science, and Google Scholar using urban vegetation and climate change-related keywords we selected five major issues related to the urban environment: (1) particulate matter, (2) gaseous pollution, (3) noise pollution, (4) water runoff, (5) urban heat island effect. The analysis of existing knowledge reported here indicates that the roles of urban vegetation on the adverse effect of climate change could not be simply deemed positive or negative, because the role of urban green is also strongly linked to the structure, composition, and distribution of vegetation, as well as to the criteria used for management. Therefore, it could help to better understand the roles of urban green as a complex system and provide the foundation for future studies.
115	The current energy situation requires the effective utilization of all available resources, and residual wood biomass from urban forestry may represent an excellent opportunity for increasing the presence of short-range energy sources. In urban forestry management, two main operations can provide large amounts of wood biomass: The felling and pruning of trees. These operations are carried out with two principal techniques that differ in terms of mechanization intensity (i.e., accessing the trees' crown with mechanized aerial lifts or utilizing ropes—tree-climbing). This study has investigated 18 felling and 15 pruning yards, carried out with aerial lifts (17 yards) or treeclimbing (16 yards), most of them located in the city of Rome (Italy), one of the greenest European capitals. The operations were sampled with time studies, and five elements of work time were measured from the beginning of work to the transport of the residual biomass to the loading point, using centesimal stopwatches and video recording. The total observation time amounted to 152.0 h. The total residual biomass was assessed. The cost calculation for each yard took into account fixed, variable, and labor costs. A set of variables for each yard (including several site characteristics, trees' size, fuel consumption, carbon dioxide (CO_2) emissions, energy consumption, costs of yards, biomass, and work times) was analyzed. This study can contribute to enhancing tree maintenance sustainability in urban sites and estimating the quantity of residual wood biomass obtainable from urban forestry maintenance in the city of Rome.

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116	A field study was conducted to measure the predictability of tree decay based on visual assessments. Predictions made by individual arborists, tree surgeons, and forest ecologists were compared with the actual amounts and distributions of decay in 10 hazardous laurel oaks (Quercus hemisphaerica) that were dissected. The mean deviations of predicted area of decay and predicted loss in strength from actual values were 0.4% and 2%, respectively. The interquartile range for predicted decay area was +12 to -15%; for strength loss it was +8 to -8%. Accuracy of the predictions improved with feedback. The results of this study suggest visual assessment can be a reliable means of predicting the internal extent of decay and hollow in potentially hazardous urban trees.
117	Existing urban forest literature is strongest in its quantifcation and qualifcation of the benefts and care of trees, and not in its ability to assess the results of lack of investment in trees. Tis paper presents the results of a literature review on the "Costs of Not Maintaining Trees" commissioned by the ISA Science and Research Committee. Te authors summarized the literature from within the feld of arboriculture/urban forestry to answer the questions: What are the costs of maintaining trees and the urban forest? And, What are the costs of not maintaining trees? Present here is a detailed summary of the literature on the costs of maintenance and lack of maintenance for types of tree care commonly included in municipal budgets (planting, pruning, removal, pest and disease management) and a brief review of costs associated with less-studied types of tree care (including tree risk management; watering; mulching; fertilizing and nutrient management; staking, cabling, and bracing; tree protection; and infrastructure repair). Te authors suggest that future literature should aim to examine the infuence of maintenance regimes on costs and tree outcomes, including examining how the frequency, intensity, duration, and extent of tree maintenance activities is connected to the structure, function, and benefts of trees
118	Urban forestry and greening offer a multitude of benefits to the inhabitants of towns and cities. However, the nature and magnitude of these frequently depend upon the context. Yet, at first glance, the developing world context around urban forestry debates seems to be poorly represented in the international peer-reviewed literature. This is examined in this paper, followed by a brief outline of ten key research areas for urban forestry in the developing world. A survey of the peer-reviewed literature confirms that almost 80% of articles come from the developed world context. This correlates with the greater availability of research finance and personnel from developed regions. However, there are urban forestry questions and issues that require examination in the developing world because they cannot simply be transferred from knowledge gleaned from and tested in a developed world context. Ten of these are briefly outlined as a catalyst towards greater attention to urban forestry in the developing world and their contributions to global debates and models.

N.	Tracce prova orale comprensive di quelle volte all'accertamento della conoscenza della lingua inglese - Codice Concorso AGR/D
119	As an important part of the urban environment, trees have certain risks while living in harmony with humans. For example, the failure of trees in extreme weather may cause casualties and damage to public and private; the decline and death of old and valuable trees can have an impact on the diversity and cultural value of trees. This paper outlines the theories related to tree risk and the development of tree risk assessment, evaluates the advantages and disadvantages of various tree risk assessment methods in existing studies, and explains some factors affecting the bearing capacity and related applications using knowledge of tree mechanics. Approaches in modern probing techniques are applied to study the response and loading of tree crowns and branches under wind loads, the application of different non-destructive testing techniques in visual assessment for detecting internal defects and root distribution of trees, and the role and impact of objective quantitative test results on tree risk assessment. Finally, the future development direction of tree risk assessment is predicted, which provides an important reference for research on tree risk assessment.
120	Nature-based solutions (NBS) represent the most recent of several "greening" concepts proposed to support spatial planning and decision-making towards sustainable metropolitan regions. Despite similarities, the concepts stem from different disciplines and policy arenas and reflect various models of people-nature relations. This paper aims to analyze the uptake of greening concepts in scientific planning literature focusing on (urban) nature and landscape in the metropolitan region of Stockholm, Sweden, over the last three decades. It investigates what changes this evolution has brought in terms of the topics adopted, methods applied, and types of planning support put into practice. We identified 574 articles that reflect substantial research on greening concepts in the Swedish planning context. The articles demonstrate an initial prevalence of biodiversity with later increases of interest in ecosystem services and NBS. A detailed analysis of the studies focusing on Stockholm revealed Population growth/densification, Green space management and Biodiversity conservation as the most commonly addressed societal challenges. The most frequently mentioned type of green and blue element is Parks and (semi-)natural urban green areas, including urban forests. Methods applied were mostly quantitative, while mixes with qualitative approaches were only apparent in ecosystem services articles. Half of the studies involved practitioners or decision-makers, but only four seemed related to real-life planning processes. Taken together, the influence of scientific literature on the uptake of greening concepts in spatial planning seems to have been limited. Future mainstreaming of greening concepts in Stockholm and beyond could benefit from available data, methods and experiences, but will require more active translation and boundary management. Further research into science-policy-planning interfaces at city scale is thus imperative to advance more sustainable pathways for people and nature in metropolitan regions

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121	Urban forestry and greening offer a multitude of benefits to the inhabitants of towns and cities. However, the nature and magnitude of these frequently depend upon the context. Yet, at first glance, the developing world context around urban forestry debates seems to be poorly represented in the international peer-reviewed literature. This is examined in this paper, followed by a brief outline of ten key research areas for urban forestry in the developing world. A survey of the peer-reviewed literature confirms that almost 80% of articles come from the developed world context. This correlates with the greater availability of research finance and personnel from developed regions. However, there are urban forestry questions and issues that require examination in the developing world because they cannot simply be transferred from knowledge gleaned from and tested in a developed world context. Ten of these are briefly outlined as a catalyst towards greater attention to urban forestry in the developing world and their contributions to global debates and models
122	Public authorities that seek to transfer the cost of managing green spaces to the private sector face apprehension about the extent of community input in managing of public green spaces in cities. In practice, the governance arrangements for managing public green spaces are neither a purely private or public sector responsibility. They are part of complex and contested governance schemas that involve multiple stakeholder groups with varying interests and responsibilities. This paper proposes a simple framework to support different modes of governance appropriate for the management of public green spaces in cities. The framework classifies stakeholders' desires for engagement based on ecosystem service characteristics defined on a spectrum of excludability and rivalry. The framework is applied to case studies in Australia and Canada. Finally, we discuss the new insights for governance arrangements for public green space management in cities.

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123	Purpose – The purpose of this paper is to provide a comprehensive definition of green management. In the quest to systematically develop an inclusive definition, it seeks to take an exploratory approach to investigate the existing literature on green management from three different perspectives: first, tracing the history of how this concept emerged over time; second, considering the practices in which green organizations actually engage, focusing specifically on one company that has been recognized and honored for its extraordinary efforts toward sustainability; and third, reviewing the current developments in critical theory related to environmental issues and business. Design/methodology/approach – This exploratory review of the literature uses a tripartite approach to forge a sound definition and conceptualization of the term green management. Exploration of green management from the three angles mentioned revealed some commonalities and consistencies in the terminology and concepts. Factors common to the three perspectives were included in the proposed definition of green management. Findings – The ultimate product of the review is a comprehensive definition of green management. The identification of several commonalities using a tripartite approach lends support to the proposed definition and indicates to both researchers and practitioners that certain factors should not be ignored when attempting to study or practice green management. Originality/value – To the authors' knowledge, green management has never been collectively reviewed from these three perspectives and the systematic approach resulted in a comprehensive definition that can help coordinate future research efforts around a common conceptualization
124	As urban areas expand, understanding how ecological processes function in cities has become increasingly important for conserving biodiversity. Urban green spaces are critical habitats to support biodiversity, but we still have a limited understanding of their ecology and how they function to conserve biodiversity at local and landscape scales across multiple taxa. Given this limited view, we discuss five key questions that need to be addressed to advance the ecology of urban green spaces for biodiversity conservation and restoration. Specifically, we discuss the need for research to understand how green space size, connectedness, and type influence the community, population, and life-history dynamics of multiple taxa in cities. A research framework based in landscape and metapopulation ecology will allow for a greater understanding of the ecological function of green spaces and thus allow for planning and management of green spaces to conserve biodiversity and aid in restoration activities.

N.	Tracce prova orale comprensive di quelle volte all'accertamento della conoscenza della lingua inglese - Codice Concorso AGR/D
125	Many of the world's major cities have implemented tree planting programs based on assumed environmental and social benefits of urban forests. Recent studies have increasingly tested these assumptions and provide empirical evidence for the contributions of tree planting programs, as well as their feasibility and limits, for solving or mitigating urban environmental and social issues. We propose that current evidence supports local cooling, stormwater absorption, and health benefits of urban trees for local residents. However, the potential for urban trees to appreciably mitigate greenhouse gas emissions and air pollution over a wide array of sites and environmental conditions is limited. Consequently, urban trees appear to be more promising for climate and pollution adaptation strategies than mitigation strategies. In large part, this is due to space constraints limiting the extent of urban tree canopies relative to the current magnitude of emissions. The most promising environmental and health impacts of urban trees are those that can be realized with well-stewarded tree planting and localized design interventions at site to municipal scales. Tree planting at these scales has documented benefits on local climate and health, which can be maximized through targeted site design followed by monitoring, adaptive management, and studies of long-term eco-evolutionary dynamics
126	Urban forests are integral components of urban ecosystems, which could generate significant ecosystem services, such as offsetting carbon emission, removing air pollutants, regulating the microclimate, and recreation. These ecosystem services contribute to improving environmental quality, quality of life, and sustainable urban development. Despite a long history of inserting vegetation in human settlements in China, modern scientific study of this natural-cum-cultural resource did not start until the 1990s. Specifically, the identification and valuation of ecosystem services provided by urban forests are relatively new but fast growing research fields. This paper reviews studies on the major ecosystem services provided by urban forests in China, including microclimatic amelioration (mainly evapotranspiration-cooling effects), carbon dioxide sequestration, oxygen generation, removal of gaseous and particulate pollutants, recreational and amenity. Various valuation techniques have been applied, most of which are still at the embryonic stage. There are rooms to improve the research scope and methods. Some pertinent research gaps and implications on current and future development of urban forestry in China were distilled from the research findings.

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127	Awareness of tree risk assessment and management has risen in the United States in recent years. This has been prompted by publications such as the American National Standards Institute (ANSI) standard for tree risk assessment (ANSI A300 Part 9 – Tree Risk Assessment) and the accompanying International Society of Arboriculture (ISA) Tree Risk Assessment Best Management Practices, as well as the subsequent development of the ISA Tree Risk Assessment Qualification. How this increase in awareness has broadly translated into common practice in communities, is not well understood. This paper reports findings from a recent survey of urban forest operations as they directly pertain to tree risk assessment. The survey consisted of a 109-question longform questionnaire that was sent to 1727 communities, followed up by a truncated version to non-responding communities. Six hundred and sixty-seven (38.6%) communities responded to the survey – 513 to the full survey and 154 to the truncated version. Communities that reported having a certified arborist on staff (p-value = .010), a strategic plan (p-value = .002), an updated inventory (p-value < .001), collecting risk data (p-value = .004), and having a past claim for damage or injury (p-value < .001) were more likely to regularly conduct tree risk management activities.
128	During the last decade tree risk assessments have become a commonplace activity for many arborists. As part of a Master Degree research project at The University of Melbourne some 23 tree risk methods were accumulated, from these some 15 were further analysed. These 15 methods were applied to a range of urban trees and situations and sensitivity analysis was used to determine the influence of individual assessment criterion on the output value in each of these models. A further trial was conducted where 12 experienced arborists used eight of these methods to assess eight different trees in varying urban situations; some of these data and observations are reported. Analyses of results indicate that differences exist amongst methods caused by assessment categories types, weighting, and mathematics. Equally, large differences in estimating risk assessment variables were identified amongst arborists. To some degree, this paper should be considered to be based on preliminary data. The complex relationships and large datasets suggest that some caution should be applied when interpreting the presented results until the all datasets and statistical analysis are fully reviewed.

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129	Trees are efficient scavengers of particulate matter and are characterised by higher rates of dry deposition than other land types. To estimate the potential of urban tree planting for the mitigation of urban PM10 concentrations, an atmospheric transport model was used to simulate the transport and deposition of PM10 across two UK conurbations (the West Midlands and Glasgow). Tree planting was simulated by modifying the land cover database, using GIS techniques and field surveys to estimate reasonable planting potentials. The model predicts that increasing total tree cover in West Midlands from 3.7% to 16.5% reduces average primary PM10 concentrations by 10% from 2.3 to 2.1 mg m3 removing 110 ton per year of primary PM10 from the atmosphere. Increasing tree cover of the West Midlands to a theoretical maximum of 54% by planting all available green space would reduce the average PM10 concentration by 26%, removing 200 ton of primary PM10 per year. Similarly, for Glasgow, increasing tree cover from 3.6% to 8% reduces primary PM10 concentrations by 2%, removing 4 ton of primary PM10 per year. Increasing tree cover to 21% would reduce primary PM10 air concentrations by 7%, removing 13 ton of primary PM10 per year. r 2007 Elsevier Ltd. All rights reserved.
130	Efforts to increase environmentally sound behaviors and practices have in the past often focussed on consciousness-raising and attitude change. Research indicates that such efforts are less effective than interventions designed to make environmentally sound behaviors easier to engage in, or to make personal advantages resulting from such behaviors more clear to individuals. Four nonprofit tree planting organizations were studied as examples of successful environmental interventions. From these studies, as well as a review of the literature, several principles underlying successful behavioral interventions are identified. Implications of these principles for future environmental programs are discussed. ~ 1997 Elsevier Science Ltd
131	All Trees pose some level of risk to nearby people, structures, and utilities. Typically, this risk is minimal and is far outweighed by the environmental, social, and economic benefits offered by the tree in question. As trees age or become weakened by pests, disease, and/or other stresses, this balance may shift, requiring a tree owner or manager to decide what risk level he or she is willing to accept and what modifications, if any, are needed. Experienced arborists can aid in this decision process by conducting a professional risk assessment that specifies the likelihood of whole or partial tree failure, the consequences of such a failure, and the potential targets affected. A variety of risk assessment methods have been developed to guide professionals through the tree inspection process. In North America, three risk assessment methods have gained the greatest acceptance among tree care professionals, municipal urban forestry programs, and government agencies. These methods are: • International Society of Arboriculture (ISA) Tree Hazard Evaluation Method (Matheny and Clark 1994) • United States Department of Agriculture (USDA) Forest Service Community Tree Risk Evaluation Method (Pokorny 2003)

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132	Tree risk assessment is an inherently human endeavor that can be influenced by risk perception, risk acceptance, and professional bias. Tree risk assessments from 296 arborists were evaluated to assess tree- and assessor-based factors that influenced ratings. Additionally, we investigated sources of variability associated with the main inputs of risk assessment – likelihood of impact ratings, likelihood of failure ratings, and consequences of failure ratings. Finally, we assessed the factors that influenced prescribed mitigation measures. Results indicate that professionals with training and industry credentials had lower risk ratings and were less likely to prescribe more active mitigation measures like tree removal. More notably, there was significant variability among raters, with the likelihood of impact and consequence of failure serving as the most variable factors in tree risk assessment.
133	Tree planting programs are being implemented in many US cities (most notably New York, Los Angeles, and Chicago) on the basis of the multiple environmental and health benefits they may provide. However, the magnitude and even the direction of the impacts of trees on specific urban environments have seldom been directly measured. In addition, there has been little research on the historical, cultural, political or institutional origins of such programs, or on their implementation process. Pending questions include the degree to which these programs are integrated in the existing frameworks of city government and infrastructure management, how they are paid for, and the kinds of collaborations between nonprofit organizations, the public, and public agencies at all levels they may require in order to succeed. This paper reports on an interdisciplinary research project examining the Million Tree Program of the City of Los Angeles
134	Many of the world's major cities have implemented tree planting programs based on assumed environmental and social benefits of urban forests. Recent studies have increasingly tested these assumptions and provide empirical evidence for the contributions of tree planting programs, as well as their feasibility and limits, for solving or mitigating urban environmental and social issues. We propose that current evidence supports local cooling, stormwater absorption, and health benefits of urban trees for local residents. However, the potential for urban trees to appreciably mitigate greenhouse gas emissions and air pollution over a wide array of sites and environmental conditions is limited. Consequently, urban trees appear to be more promising for climate and pollution adaptation strategies than mitigation strategies. In large part, this is due to space constraints limiting the extent of urban tree canopies relative to the current magnitude of emissions. The most promising environmental and health impacts of urban trees are those that can be realized with well-stewarded tree planting and localized design interventions at site to municipal scales. Tree planting at these scales has documented benefits on local climate and health, which can be maximized through targeted site design followed by monitoring, adaptive management, and studies of long-term eco-evolutionary dynamics

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135	27) As an important part of the urban environment, trees have certain risks while living in harmony with humans. For example, the failure of trees in extreme weather may cause casualties and damage to public and private; the decline and death of old and valuable trees can have an impact on the diversity and cultural value of trees. This paper outlines the theories related to tree risk and the development of tree risk assessment, evaluates the advantages and disadvantages of various tree risk assessment methods in existing studies, and explains some factors affecting the bearing capacity and related applications using knowledge of tree mechanics. Approaches in modern probing techniques are applied to study the response and loading of tree crowns and branches under wind loads, the application of different non-destructive testing techniques in visual assessment for detecting internal defects and root distribution of trees, and the role and impact of objective quantitative test results on tree risk assessment. Finally, the future development direction of tree risk assessment is predicted, which provides an important reference for research on tree risk assessment.
136	Awareness of tree risk assessment and management has risen in the United States in recent years. This has been prompted by publications such as the American National Standards Institute (ANSI) standard for tree risk assessment (ANSI A300 Part 9 – Tree Risk Assessment) and the accompanying International Society of Arboriculture (ISA) Tree Risk Assessment Best Management Practices, as well as the subsequent development of the ISA Tree Risk Assessment Qualification. How this increase in awareness has broadly translated into common practice in communities, is not well understood. This paper reports findings from a recent survey of urban forest operations as they directly pertain to tree risk assessment. The survey consisted of a 109-question longform questionnaire that was sent to 1727 communities, followed up by a truncated version to non-responding communities. Six hundred and sixty-seven (38.6%) communities responded to the survey – 513 to the full survey and 154 to the truncated version. Communities that reported having a certified arborist on staff (p-value = .010), a strategic plan (p-value = .002), an updated inventory (p-value < .001), collecting risk data (p-value = .004), and having a past claim for damage or injury (p-value < .001) were more likely to regularly conduct tree risk management activities.