Iceland
Liechtenstein
Norway

Active citizens fund

RECOMMENDATION FOR THE RESTORATION OF TRADITIONAL DRY- STONE WALLS

METHODOLOGY AND SIGNIFICANCE OF DRY-STONE TERRACES IN THE WIDER MOUNTAIN LANDSCAPE FOLLOWING THE FIRES OF 2021

Sevina Floridou

This document was prepared for the Project Pyranakampsi – Aleverden Geleceğe, which was funded under the Active Citizens Fund Cyprus programme, receiving contributions from Iceland, Liechtenstein and Norway, through the EEA and Norway Grants 2014-2021.

Methodology for restoration of traditional dry-Stone terraces and exploring their significance in the Cypriot landscape

Contents

Introduction 2

Significance of drystone terracing within the landscape

The landscape between the villages of and Arakapas and Eptagonia 4

The zones which recharge underground aquifers 4

Significance of drystone terraces and biodiversity 6

Characteristic ways of drystone-walling assemblage 8

Bibliography 10

Appendix: Restoration process and construction method (architectural section drawing with explanations) 11

The present text with accompanying photographs and plans is still a work in progress. It is based on the landscape recovery drawings produced by the author and used for the 'Re-Greening Cyprus' project supplemented with knowledge from topographic mappings, field-work and relevant research by the author during the Project 'Πυρανάκαμψη - Alevlerden Geleceğe' (post-fire revitalisation).

Upon completion, the project will be translated into Turkish.

Landscape description Report and Actions

Sevina Floridou Heritage Architect-Conservator

Figure 1, Dry stone wall revealed in the denuded landscape immediately after the fires of 2021.

Introduction

The two organizations of **Laona Foundation** and **Cyprus Environmental initiative** joined forces following the fires of 2021 in the Troodos area, which affected 8 villages of Limassol and Larnaca districts, and also following the fires along the Kyrenia range (of 1995 and 2022), where 3 villages were affected. A common understanding between both organizations is that forest fires affect the whole of the island and are not confined within respective territorial boundaries.

The aim of the collaboration between both groups is to raise awareness within affected local communities concerning the importance of the common historic drystone terraced landscape areas of the lower mountain ranges, found throughout the whole island, both in the south-west Troodos mountain range and in the lower slopes of the Kyrenia range to the north, ranging in altitude between 100 and 850 m above sea level. These terraced areas also happen to be the ones throughout the island, affected by recurring recent forest fires, while historic drystone terrace constructions going back hundreds of years as a part of the farming heritage of both communities, shape the historic foodscape of the island. Terraces in this context are not only an important intangible rural cultural heritage asset, but have also shown their importance in terms of prevention of soil and water erosion following the denuding of mountain slopes, particularly after fires. But it seems that they also appear to have a future role to play in terms of possible fire containment.

Significance of drystone terracing within the landscape

Civilisation and nature evolve side by side within the drystone terraced landscape, where one augments the other, transforming both into heritage landmarks of great significance, with archaeological, historic landscape, social, but also agri-environmental and ecological importance.

This special landscape, transformed through farming practices of both women and men, is one in which the process of it becoming as it has evolved, has been elevated into a space of communal partnership across the ages[1], that has served the practical needs of people in a 'chaîne operatoire' of traditional cultivations of crop and animal farming. In practice, the process of reconfiguring the lay of the land has also provided other benefits; achieving, a system of management that controls flow of rain water, prevention of soil erosion, but equally importantly, the re-charge and enrichment of the water table.

Drystone walls that support terraces emerge from the reconfiguration of loose stones found lying along sloped fields, when the stones are stacked into walls within the same landscape, creating flat strips of farmland. These supporting walls are created without the use of any binding mortar.

The type of stones used and the size they are naturally broken into, dictates the intimate scale of assembling these constructions, using no binding mortar, and linking them organically to the landscape's scale of height and width. The scale of such assemblages determines the wider measure of each unique landscape, infusing each particular terrain with its own organic character, in balance with its surroundings. The absence of binding mortar allows the construction to have permeability, slowing down the rain-water flow but also allowing it to seep through so that it spreads in a controlled manner, to water the cultivations planted on terraced surfaces, over an extended period of time. Also, the gradual descent of soil and debris carried by the water flow is contained, thus enriching the terrace soil. This slowed flow also supports a wide range of ecosystems and biodiversity habitats, evolving not only on the edges of such terraced fields but also within the stone cavities of the terraced walls themselves. These drystone terraces are known as d'omes in Greek Cypriot dialect (and 'vo'mi in Turkish Cypriot). They are centuries old creations, the result of toil of nameless farmers who have bequeathed us these earthen constructions that do not extract from the landscape but enhance its value.

The construction of drystone terraced landscapes of past centuries do not affect the nature of the landscape but enhance it through adaptive reuse of its existing materiality. Eternal in their presence, stones used in such constructions, originated entirely from the immediate surrounds (a result possibly of former erosion before the landscape was 'calmed'). The dry way of assembling drystone walling roots it to the ground with stability and integrity. Plasticity is also achieved throughout the assemblage through a process of careful selection, grading and placement of stones according to their size, within the wall. This process has been honed through centuries of applied wisdom of successive generations, each responding to the 'living' materiality of supporting soil placed under pressure from flowing water.

A special characteristic of drystone terraces is their ability to adapt to conditions of pressure experienced by the terrain, whether this results from the soil, water or gravity. The drystone walls settle and curve without developing cracks, because the absence of mortar or other infill provides the construction with plasticity and adaptability towards the pressures it experiences from soil and water, and even earthquake tremors. The individual stones in the walls are thus allowed to slightly move and settle, adjusting the wall's overall shape affecting both its surface but also its linearity, without intense disfigurement. Drystone walls remain unaffected by frost, extreme deformations etc. and for the above reasons, collapse in drystone walls is mostly localised, without bring down the whole structure, so that repair of a fallen part of a terrace support can be easily reconstructed. So long as the drystone walls were regularly maintained they remained unaffected by extreme weather conditions or sudden climate changes.

Regular maintenance of drystone terraces more or less stopped in the 1960s and thereafter. Long term damages which can be observed in the Cypriot abandoned terraced landscape today are generally caused by partial landslides, but also human activity such as 'mining' stones for the construction of other stone buildings. However, recent fires revealed yet another unfortunate cause of collapse: tightly packed stones, held together in place for centuries, disintegrated into gravel under the merciless temperatures as the fire swept through abandoned terraces. This has led to large areas of overall collapse within the fire afflicted terrain.

The landscape between the villages of and Arakapas and Eptagonia

The valley where the villages are located, at an altitude of 375 to 470 m above sea level, is defined by the Vasilikos river which flows from the Machairas mountains in the eastern Troodos range and discharges on the island's southern coast. Numerous seasonal streams discharge into the river along deep crevice, lining the valley sides. Commandaria wine was first produced in this valley in medieval times (Weaver 2021).

The fire which swept mercilessly through the valley in July 2021, destroyed 55 square kilometres of forest terrain, including narrow gorges with seasonal flowing riverbeds and wooded copses but also orchards, olive and carob groves, as well as village houses, farms and greenhouses.

The passing of the fire also revealed the ongoing gradual disintegration of a historic landscape composed of three distinct interlocking parts which basically function as a system that enriches the aquifer over a wide area (see fig.2): Forests and ground cover were burnt in the upper mountain slopes enclosing the valley, while in the middle section of the slopes, the fire exposed an almost total abandonment of terraces supported by drystone constructions. At the same time, the lower third part of the rural landscape, the plains are continuously being built over.

But the burnt plant cover also exposed an expanse of different types of long-abandoned dry-stone wall constructions along the valley slopes; threshing floors; disconnected short drystone terrace supports of former vineyards; linear infill constructions perpendicular to flowing creeks, termed 'dei'mmata' in local dialect, used to impede the flow of forceful torrents; rows of terraces, eg., for cereal and orchard cultivation. Abandoned and overgrown drystone terraces were revealed after being denuded by the fire, to extend all along the hillsides and all the way up towards the decimated forests. Against the silhouette of burnt trees along the top slopes, abandoned stone terraces appeared at lower levels where they had lain overrun by wild growth of the past 50 to 100 years. The relationship emerged, which has also been obliterated by the overgrowth of abandonment, between this middle zone of terraces and that of the olive groves but also small wooded areas in the lower valley floor. The obliteration of the latter relationship however, between lower fields and middle-zone terraces has been ongoing, inevitably unnoticed due to intensive urban development, and change in land use, occurring all over the island's plains.

The wildfires caused us to observe the landscape as it was revealed, both between the eight fire-stricken villages, where we also noted the valley in a top-down section, from the mountain tops to its lower elevations, ranging between 375 and 850 meters in altitude.

Through this perpendicular 'reading' of the valley slopes, the three zones described above, can be identified as integrally belonging to this specific type of lower mountainous terrain. These three zones constitute a significant system which holds the configuration of the landscape together, and is responsible for recharging the underground water table, as explained in Figure 2 below. What was revealed in burnt and denuded areas, is that the vanishing of one or more of these three essential and distinguishing parts, holds dire (but not wholly irreversible) consequences that lead to desertification.

The zones which recharge underground aquifers

1. Millison (2022) names the first zone, as the **'hat'** or **'head cover'.** It is defined by forest vegetation along the top mountain slopes. Foliage of trees at these levels guide rainwater flow deep into the ground, first by capturing moisture (rain or even mist) via their foliage, directing it downwards and

into the ground to their root system. The presence in the geoogical substrata of deep non-permeable rock formations creates a containment of perched aquifers, which retain underground water, provided that the overground flow is slowed down by the presence of vegetation (α).

2. The second zone, the **belt,** is marked by human intervention over the ages with the creation of terraces supported by drystone walls to facilitate cultivation (β). This belt-zone 'holds' the top forest and lower field levels together. Terracing can start at the lowest levels of the forest edge, seen as bands along the landscape situated between forest and plains. Possibly for this reason these bands are referred to in local parlance as 'dei'mmata (δήμματα), ie., elements that 'tie', and hold together, the land from being swept away by seasonal torrents. Through their dual action, terraces retard the surface flow of rain water, and in so doing allow it time to seep into the ground, where it captured, to enrich lower strata in the non-pervious 'perched aquifer' (α).

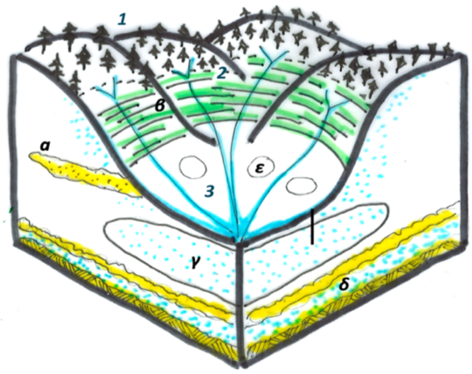


Figure 2, (after Andrew Millison, 2022). A basic outline drawing shows the hydro-geological relationship between the surface movement of rain water, flowing down folds in the landscape (β), and how water is checked through a three-tiered broad topography of zones . (1) Forests line the top of hills and mountains, feeding the perched aquifer (α). The middle drywall terracing zone (2) supports the terrain from erosion and creates a smooth transition between the mountain tops and the lower fields in the valley floor (3). Particularly during the rainy winter months, this three-tiered system allows terraced fields that have been created as impediments to the torrential flow, to trap water that not only flows on the surface, but by slowing its flow it is also given time to seep down and further enrich lower subterranean layers (γ and δ).

At the lower level, the third zone, makes up the '**base**' or **'foot'** of the water collecting system, and consists of the valley floor, which benefits from the amassed subterranean ground water, collected largely during the winter months through the delaying actions of the terraces above and seeping into the wider unconfined aquifer) (γ). The already controlled water flow in the plains spreads on the surface according to the topography either through natural streams or through networks of farmers' channels created to take further advantage of the surface overflow, directing it to cultivated fields. Meanwhile humidity in the soil of the fields is enriched through the unconfined aquifer that has been slowly building up over the winter months. Soil conservation at this lower level is achieved either by storing the surplus water in earthen channels and guiding it to the fields as needed, or by storing it in stone surface reservoirs or ponds. Wells can also be found in this lower zone, tapping into the enriched aquifer, but these in recent times, have been overexploited through mechanical pumping.

Recognising this model should govern a wider territorial planning method of how (and how much) to build without damaging the capacity of enriching the aquifer.

In the past, a profusion of wild growth was encouraged along the earthen banks of the dug-out water channels. Collapse of the earthen sides was avoided by compacting them with retained humidity and planting. They did however need to be laboriously weeded regularly.

The enrichment of the deeper confined aquifer in the lower landscape zone is achieved where geological layers of porous rock are sandwiched between the impermeable formations which compose the confined aquifer (δ). These deep subterranean layers are enriched not only by the surface system described above, but over a much wider territory and water stored in this aquifer could be hundreds, even thousands of years old. It is worth noting that this deep storage of water could not have been achieved unless the water flow is checked on the surface, as a direct action to human intervention, through the created drystone terraced landscape.

As active agents of the natural landscape, agriculturalists (both men and women) engaged with the hydrographic network not only as farmers, but also as intuitive environmental engineers and even stewards of the landscape, since their actions shaped the surrounding topography and upgraded it ecologically (Pelekanos, 2018).

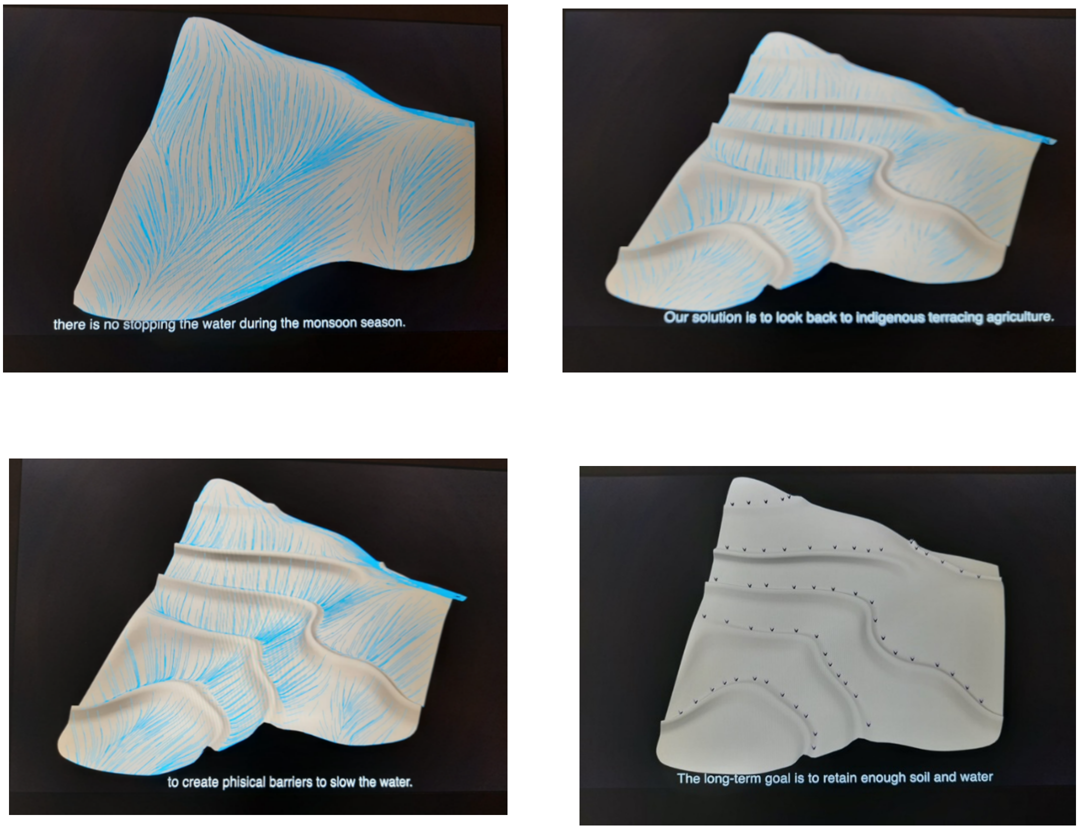
Over time and viewed from a more contemporary perspective, we can distinguish an additional role that is undertaken by agriculturists. Beyond that of 'shapers' of landscape, agriculturalists have also evolved as the custodians of an ever-evolving historic agricultural topography managed by humans over time. In this capacity, the knowledge of drystone terrace formation was recognised, in 2018, and enlisted in UNESCO's World Heritage List of Intangible Heritage. Cyprus and Greece took the lead in submitting the application for inscribing terraced landscapes together with Croatia, France, Italy, Slovenia, Spain, and Switzerland.

Greece has proceeded further, in also recognising and inscribing as an intangible and integral part of this heritage, the agricultural knowledge and physical activities involved in human movement of water through the action of irrigation and watering, since using water is an integral part that shapes the character of these historic cultural landscapes. Cyprus too needs to widen its perception of the terraced landscape as one of unified natural and historic constructions of immense cultural significance.

Significance of drystone terraces and biodiversity

An additional significance of drystone terraces is how biodiversity is supported within the cavities of drystone walling. Although not a primary objective of terrace builders, it was welcomed and respected by rural people as part of their innate understanding of the worth of all aspects of life, particularly including self-seeding plants and herbs which supplemented their food, but also their medicinal needs. Ancestral wisdom appreciated that this humble wall contained a rare microcosm of life, whose wealth was treasured by the farmers, working as creators and custodians of the system they cared for and protected (Pelekanos, 2018).

The delicate and rare life-cycle of fungi, plants and animals enabled within this fragile stone surrounded microcosm of the terraced habitat may be described as an anthropogenic system of extreme simplicity and originality which at the same time works both as a human-constructed system and as a part of wildlife, co-existing in harmony. This is a recognised artificial system that is at the same time natural, belonging to the fields, created in full harmony with its surroundings.



Figures 3.4.5.6: Three-dimensional terrain models from Amsterdam's Steidlich Museum exhibition titled «It's our f***ing back yard»[1], 2022, illustrating the significance of restoring historic terraced landscapes in Mexico. The 3D digital terrain images explain the evolving significance of how flow of rain waters through the landscape is seen, first, without the restraining effect of stone terraces (above left), and subsequently, the way in which the turbulence of the rushing water is controlled by creating natural 'folds', or embankments (above right and bottom left) allowing plants to thrive without the need for irrigation (bottom right). This model is the documented blueprint found throughout historic terraced landscapes. The aim of these constructed 'barriers' is to allow the containment of the downward torrential flow**,** so that cultivations will be 'dry' with no need of further irrigation. These images were used in the education brief created by the author for the workshops on terrace landscape restoration which were organised by Laona Foundation for volunteers in the autumn of 2022. (see workshop brief of methodology and outcomes).

[1] The exhibition lasted from May to November 2022, with thematic displays which challenged spectators to re consider the climate crisis, effects of mining, colonialism, and actions on the landscape including environmental justice.

Characteristic ways of drystone-walling assemblage

Figure 7, Drystone terrace walls contribute to the conservation of biodiversity.

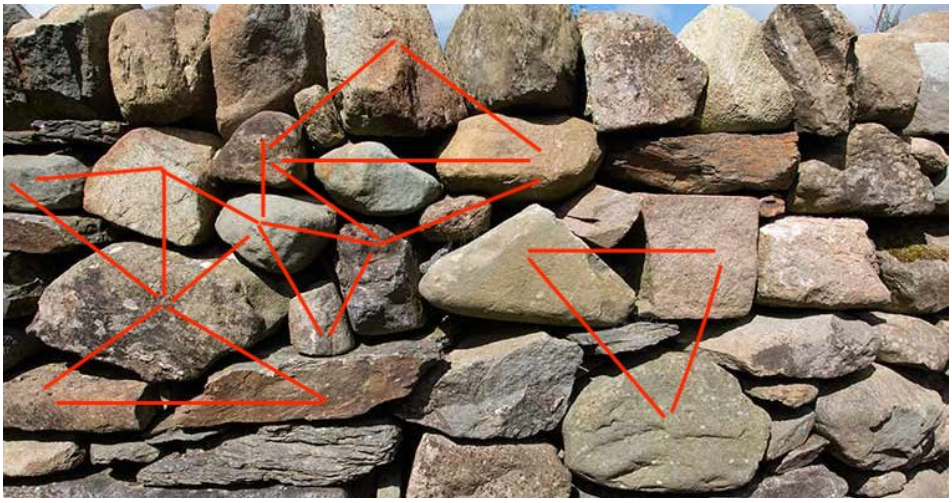


Figure 8, The assemblage of stones of varying sizes needs to be such that two stones always support a third, and so that spaces in between stones always overlap with the stones of the next row above.

"*I think of triangles*", was how a master craftsman from La Gomera island described the process of building.

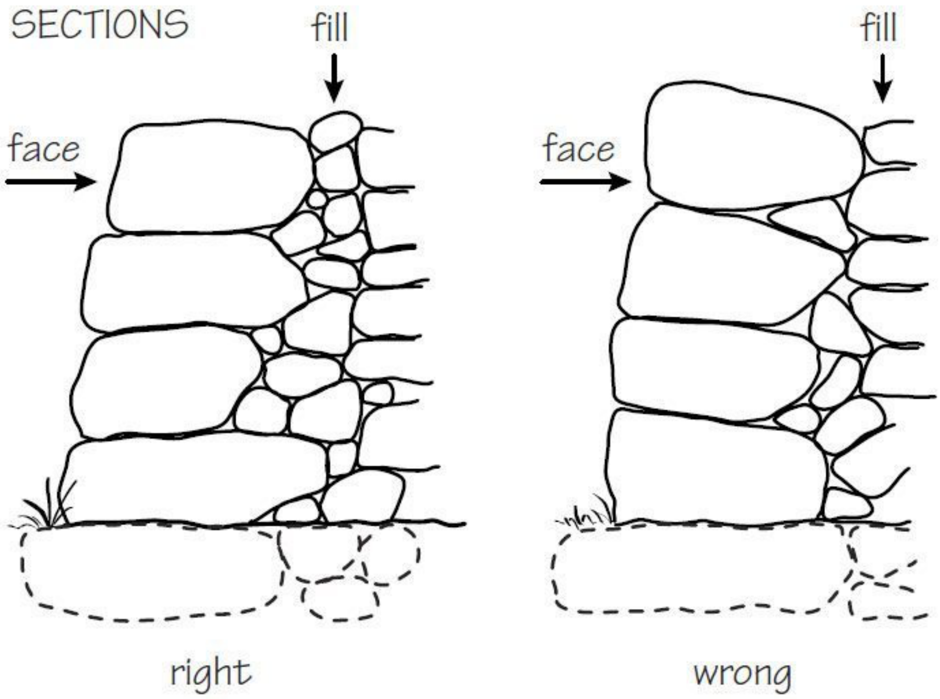


Figure *9,* Correct and wrong cross-section showing the back fill of a drystone terraced wall.

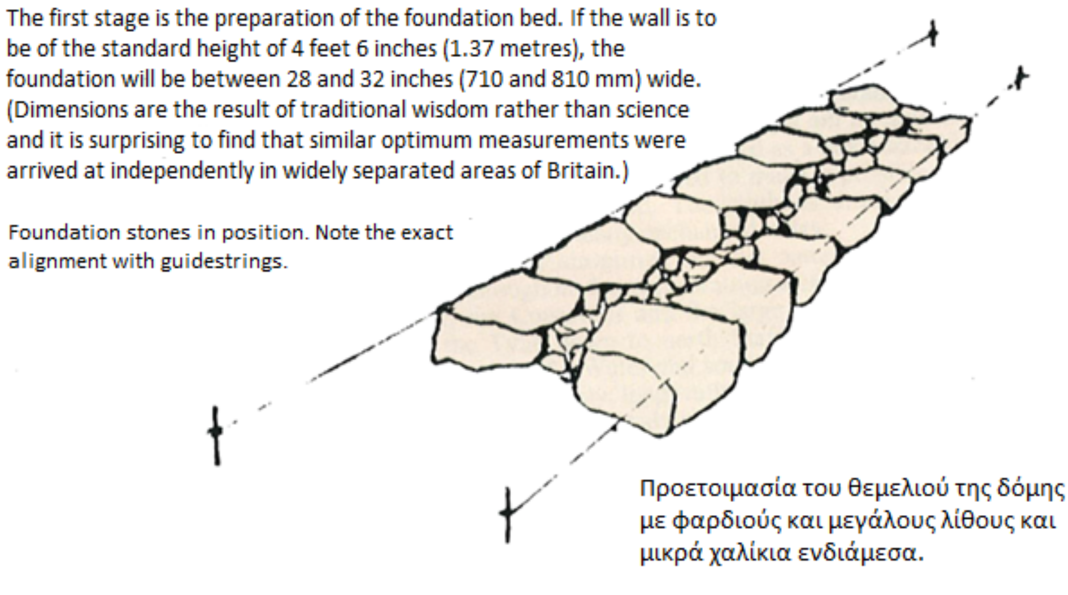
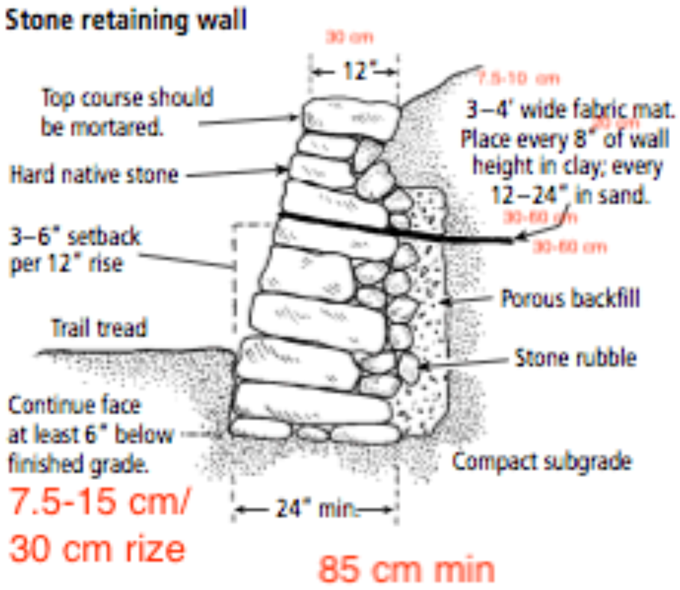


Figure 10, Sketch of drystone foundation course (from Garner, 2005, p.10).



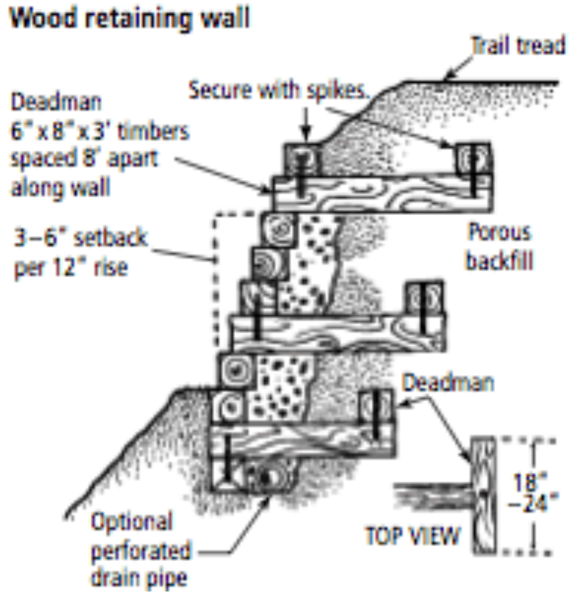


Figure 11a above, At steep slopes, drystone walls are constructed to stabilize terraces.

(Figure 11b below) At certain very steep gradients, wood retaining walls may be constructed to avert erosion and collapse.

Bibliography

Garner, Lawrence (2005). Dry stone walls, A Shire Book, CIT Printing Services Ltd, Press Buildings, Pembrokeshire.

Floridou Sevina, (2020). *The Small Vast World: Abandonment and Revival of terraced Vineyards in Salamiou,* Journal of Terraced Landscapes, Cyprus, Vol. 1 Num. 1 , Coventry University.

Hadjisavva-Adam Irene, et al ed. (2007). Ξερολιθικές Κατασκευές της Κύπρου, Dry Stone Constructions of Cyprus, Cyprus Press and Information Office.

Καπετάνιος, Αντώνιος (2018). Λίθινοι Τοίχοι, Τοιχίζοντας και διευθετώντας τον φυσικό χώρο, έκδοση Α. Καπετάνιου, Αθήνα, https://www.bookstation.gr/Product.asp?ID=49135)

Kitchener, H. H. (1878-1882). A Trigonometrical Survey of the Island of Cyprus, Map Sheet 13. National Library of Scotland, https://maps.nls.uk/view/103246409.

Millison, Andrew, (2022). How to Rescue a Sinking Water Table,
https://youtu.be/7fFXJ3G49pY?si=SP3uIL_Rv1lx-qRe

Pitta Anastasia and Theodosiou Antonia (2019), International day for Monuments and Sites: Rural landscapes/ Διεθνής μέρα μνημείων και χωριών: Αγροτικό Τοπίο, Ίδρυμα Πέτρα στην Πέτρα, Τμήμα Αρχαιοτήτων, ICOMOS Κυπριακό Τμήμα.

Woys Weaver, William (2021). Commandaria: The Wine of Kings, En Tipis Publications, Nicosia.

Χάρτης Τμήματος Κτηματολογίου και Χωρομετρίας Αρ. 4838 Κλίμακα 1: 5000, ημερ.1918.

Department of Lands and Surveys, Cadastral map no. 4838 , scale 1 5000, dated 1918.

Appendix: Restoration process : Construction method (architectural section drawing with explanations)

GENERAL PARAMETERS

DRYSTONE WALL CROSS SECTION

TYPE A: EXISTING DOUBLE FACED FREE STANDING WALL

TYPE B: SINGLE FACED RETAINING DRYSTONE WALL WITH BACK ABUTTING EARTH SCARP

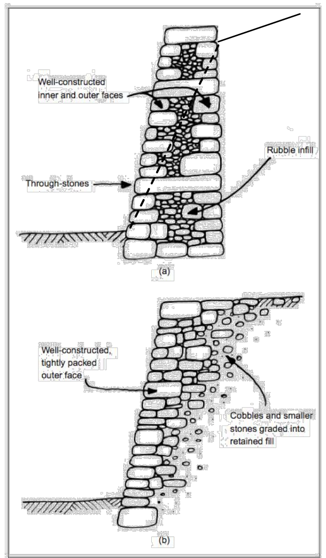
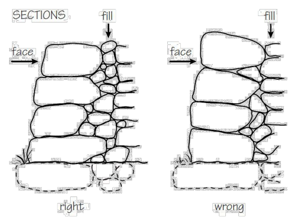


Figure 1. Comparison between (a) double-faced and (b) single-faced walls



TYPE 1

EXISTING DRYSTONE WALL : REPAIR WITH TRADITIONAL METHODOLOGY FACED ON BOTH SIDES. WHERE NECESSARY UNDERPINNING WITH CROSS-STONES SHOULD BE CARRIED OUT. CROSS-STONE REINFORCEMENT TO BE CARRIED OUT AT 1M INTERVALS X 50 CM HEIGHT IN ALTERNATING COURSES.

TYPE 2

NEW DRYSTONE WALL : NEW CONSTRUCTION WITH TRADITIONAL METHODOLOGY FACED ON ONE SIDE WITH SMALL STONE INFILL IN THE BACK AGAINST THE EARTH SLOPE. WHERE NECESSARY UNDERPINNING WITH CROSS-STONES SHOULD BE CARRIED OUT. CROSS-STONE REINFORCEMENT TO BE CARRIED OUT AT 1M INTERVALS X 50 CM HEIGHT IN ALTERNATING COURSES.

NEW CAPPING TO HOLD WALL TOGETHER

FURTHER SPECIFICATIONS

Ground Preparation

At tendering phase the tenderer should provide examples of successfully completed work of similar typology to the work in question.

Before beginning the tenderers should be able to provide a mock-up of 1 x 1 m in height in order to discuss the flaws and any corrections that the architect my request.

The stones that have been scattered along the perimeter of the site must be re assembled and sorted.

Stones that were taken down from west and street facing sides of the enclosure wherever these were in situ (as seen from the aerials of June 2017) and wrongly used as shuttering support throughout the perimeter shall be disassembled and sorted as following:

- All stones which have architectural mouldings or are of dressed stone are to be separated from rough cut stone and stored along with other architectural fragments. This will be carried out under the approval of the Archaeologist.
  The contractor shall assemble the rest of the rough cut stones to use for the reconstruction of the drystone walls

- The rest of the stones for rebuilding the drystone walls must be organised in grades of 3 to 4 sizes (from largest/ longest to smallest).

For raising the height of drystone walls where necessary or building new drystone walls, similar stone must be sourced from a reliable quarry / supplier or cut by the contractor himself, approved by the architect. Under no condition is stone to be taken from other in situ walls or constructions.

The contractor is obliged to present UNDP with proof of acquiring the stones, from the supply source.

The ground shall be prepared by removing all faulty shuttering, armature etc.

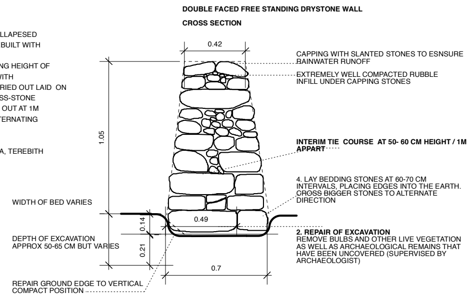
All bulbs, seeds and existing vegetation which has been uncovered int he faulty excavation must be carefully removed by hand and stored in suitable conditions under the supervision of a Landscape Architect and replanted at the same depth as that found or suggested by the L/Architect along the perimeter of the fence again under same supervision.

FOUNDATION - FOR TYPE 3 (FREE STANDING WALL) AND TYPE 2 (ALSO REPAIR OF FOUNDATION FOR TYPE 2 WHEREVER NECESSARY)
SCALE 1 : 20

REBUILDING OF DEMOLISHED/ COLLAPESED EXISTING DRYSTONE - TO BE REBUILT WITH TRADITIONAL METHODOLOGY FACED ON BOTH SIDES TO EXISTING HEIGHT OF APPROX 1.5 M. UNDERPINNING WITH CROSS-STONES SHOULD BE CARRIED OUT LAID ON A COMPACTED EARTH BASE. CROSS-STONE REINFORCEMENT TO BE CARRIED OUT AT 1M INTERVALS X 50 CM HEIGHT IN ALTERNATING COURSES.

ORIGINAL VEGETATION (PAPOUTSA, TEREBITH SHRUBS ETC) TO BE RESTORED.

SECTION 2 : 2
SCALE 1 : 20



All moved soil is then to be carefully scoured for architectural fragments under the supervision of an Archaeologist in order to document and suitably preserve small architectural fragments eg tesserae, uncovered building layers etc. which may have been shifted/ revealed by faulty excavation.

The soil is then to be carefully moved back by hand and not with mechanical means and compacted to prepare for the bedding stones of the drystone walls or for the foundation fo the armature fence

Where foundations meet trees or shrubs, the foundation is to stop allowing for a suitable gap (min 15 cm) for the trunks of the plants. Under no condition are trees or shrubs to be cut. Where trees have been wrongly cut they must be restored/ replanted.

Drystone Wall Construction

Courses must be laid with stones bedded down and not in vertical positions. The effect of the facing must be random with good crossing over of the alternate layers and a repetitive pattern must not appear .

The stones must wedge naturally one with the other, and be steady and must be unable to slip . Rounded stones must be used in the infill.

The wall is built up of horizontal courses of stones of even height for strength and appearance. The biggest stones must be used in the foundation, at the bottom, and the smaller on top. The smallest are to be used as rubble infill.

It must be ensured that each joint in one course is bridged by a stone in the next course.

In the strenghtening courses the outer stones must be placed dipping to the outside slightly for drainage runoff .

At regular intervals of 50 cm stones with a long edge must be turned inward to reach to the core of the wall.

Pointing mortar, only of cured lime, may be used in the core of the wall but must not be visible on the faces (min 10 cm recess from face).

Stones must be placed by hand on the wall and not hammered, since this dislodges stones.

Topping stones are to be sellected to be more flat than rounded and laid on a bed of firmly compacted infill, with outward slopes for rainwater runoff.

Σ Ε Β Ι Ν Α Φ Λ Ω Ρ Ι Δ Ο Υ
Α Ρ Χ Ι Τ Ε Κ Τ Ο Ν Α Σ

Τ.Κ. 56469 ΛΕΜΕΣΟΣ Τ.Τ. 3307

ΤΗΛ. 25 367411 ΦΑΞ. 25 370730

e -mail: sevina@spidernet.com.cy

ΕΡΓΟ:
ΣΥΝΕΡΓΑΣΙΑ ΜΕ ΙΔΡΥΜΑ ΛΑΟΝΑ - ΣΧΕΔΙΟ ΠΥΡΑΝΑ-ΚΑΜΨΗΣ - ΑΠΟΚΑΤΑΣΤΑΣΗ ΠΥΡΟΠΛΥΚΤΟΥ ΤΟΠΙΟΥ ΣΤΗΝ ΤΟΠΟΘΕΣΙΑ 'ΚΑΖΑΝΙ'-ΕΠΤΑΓΩΝΙΑ - ΕΠΑΡΧΙΑ ΛΕΜΕΣΟΥ

ΙΔΙΟΚΤΗΤΗΣ:

ΤΙΤΛΟΣ ΣΧΕΔΙΟΥ: KAZANI WORKSHOP - METHODOLOGY OF DRYSTONE WALL CONSTRUCTION	
ΗΜΕΡ. 09/2022	ΑΡ. ΣΧΕΔΙΟΥ 00
ΚΛΙΜΑΚΑ -	
ΚΩΔΙΚΟΣ ΜΕΛΕΤΗΣ 0116	
ΣΧΕΔΙΟ	ΣΦ
ΜΕΤΑΤΡΟΠΕΣ	