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The European School of Urbanism and Architecture

A MODEL EUROPEAN CURRICULUM TO MEET THE
CHALLENGES OF THE 21ST CENTURY BUILT ENVIRONMENT

FOLKEUNIVERSITETET INNLANDET

KUNGLIGA TEKNISKA HÖGSKOLAN

MODERNO AS

PRO PATRIMONIO

SIV. ARK. MNAL ARNE SØDAL

NEUE STADTBAUKUNST

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"You have to show me how [your project] relates to human life, how it relates to their well-being and the freedom to be well. And the freedom not only to be well, but the freedom to lead the kind of life they value leading."

- Amartya Sen, Nobel Prize-winning Economist

A “Hippocratic Oath” for Built Environment Professionals

The ESUA programme rests on the premise that the first and foremost duty of architects and urbanists is to create and maintain buildings and settlements that will promote the health and well-being of humanity. All other goals – commercial, artistic, personal -- must serve and support this primary professional duty.

In particular, architects and urbanists are responsible to ensure the access of people to built environments that:

- ❖ offer durable, secure, functional and comfortable shelter;*
- ❖ maximise freedom and opportunity to pursue chosen ways of life;*
- ❖ maximise freedom to experience greater or lesser degrees of social contact, causing neither involuntary isolation nor involuntary loss of privacy;*
- ❖ offers a range of greater or lesser degrees of urban intensity, or natural tranquility;*
- ❖ offer a rich diversity of buildings and places, suitable for varying incomes and ways of life;*
- ❖ can be adapted to meet unique and changing needs, aspirations, and qualitative judgments;*
- ❖ promote a just and optimal mediation between conflicting freedoms;*
- ❖ offer rich visual and functional connectivity, legibility, and coherence;*
- ❖ afford a sense of belonging to residents, and a sense that the local environment belongs to them;*
- ❖ afford a connection to living local traditions and an opportunity to participate in their growth;*
- ❖ offer an experience of beauty in all aspects of daily life;*
- ❖ are capable of earning the care and the love of their residents;*
- ❖ protect, sustain and integrate with the natural systems on which human life depends.*

- THE PARTNERS OF THE EUROPEAN SCHOOL OF URBANISM AND ARCHITECTURE

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OF THE 21ST CENTURY EUROPEAN BUILT ENVIRONMENT

The European School of Urbanism and Architecture

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Introduction

The European School of Urbanism and Architecture is a pilot programme of integrated urban and architectural study funded by the European Union's Leonardo da Vinci programme in vocational education and training. It has been developed to address the most pressing modern challenges of European and global practice in the built environment today:

- Degradation of the natural environment and its resources, and in particular the challenges of climate change;
- Urban fragmentation and sprawl, including social isolation, functional segregation and loss of coherence;
- The loss of local heritage and identity, and their related economic benefits;
- The loss of craft skills and the “culture of building” needed to protect and revive Europe's vast range of built heritage – and to provide for a range of viable ways of life, with reliable regional employment;
- Incoherence of the development process. Lack of effective collaboration across national borders, disciplines and sectors; lack of effective public and private cooperation to meet long-term needs and to remain economically competitive; lack of effective local participation of stakeholders in public process.

By their nature, these interrelated challenges demand an inter-disciplinary, international and cross-sector approach. The professions of the built environment are meeting this demand by adopting more collaborative models of working, more able to respond to a broad range of complex conditions. Today's students will very likely be required to cope with even more inter-disciplinary and dynamic modes of working. In addition to specialized skills, they will need skills for on-the-job learning and collaborative work.

In response, the ESUA programme has been developed through a collaboration of thirteen partners in seven countries, representing four universities, four NGOs, and five practitioner firms. Following the nature of the challenges, the project itself has been inter-disciplinary, international and cross-sector. The material has been drawn from existing programmes, and from a series of test modules that brought together students and instructors from a number of partners.

The heart of the programme is project-based learning. Students experience the demands of actual projects in a range of settings, working alongside a range of professionals, government officials, technical experts and local stakeholders. In each workshop they learn to apply one or more of the tools available to meet one or more of the five key challenges described above.

Each workshop is supported with lectures, study trips, reading and student projects, structured into a coordinated learning module. The modules are designed to be integrated with each other, or to fit within other programmes. In the full-time model, the modules are designed to be further supported with rigorous classroom study in a broad range of professional and academic subjects, and with studio projects coordinated with the module topics.

The materials of the ESUA programme can be used in three different ways:

- The modules can be taken as stand-alone events for partners and their students --- for example, as summer school modules;
- The modules can be used within existing programmes, functioning within a cooperative educational network;
- As a more ambitious goal, a stand-alone full degree programme may be established, most likely in association with an existing institution. For example, one of the partners was involved in a similar curriculum project that has now been adopted as a full-time Masters programme by a major UK university.¹

The curriculum materials (including lectures, texts, reading lists, course outlines, workshop plans et al.) have also been developed for dissemination as pilot developmental materials for the use of other European institutions.

Because it is built upon modular workshops with a range of participants at a range of levels of experience, the programme is easily adapted to the needs of undergraduate, graduate, and professional or vocational education.

The programme can also be structured to form a “three plus two” programme of three years of undergraduate study and two years of graduate study, under the guidelines of the EU “Bologna Process”. Three years of study lead to a non-professional bachelor’s degree in architecture, with a specialisation in urban design. From there students may proceed either to a vocational career, or to a further two years leading to a Master’s degree in architecture with a specialisation in urban design.

¹ ESUA partner Michael Mehaffy directed the formation of the Education Programme of the Prince’s Foundation for the Built Environment, responding to similar educational demands. Oxford University recently announced that it will partner with the Prince’s Foundation to host the programme as a full graduate degree programme at Oxford beginning in 2009. The programme is somewhat more limited in scope than the ESUA programme, as it is focused on professional development at the graduate level.

Why is such a curriculum needed now?

One of the key motivations for the formation of the European Union was to secure the competitive advantage of the European states in an increasingly global trade environment. In that spirit, the Leonardo da Vinci programme was established to raise European standards for vocational education and training. As its website says, the programme “aims to establish and bolster the competitiveness of the European labour market by helping European citizens to acquire new skills, knowledge and qualifications and have them recognised across borders.”

A key gap has been the interdisciplinary education of professionals in the built environment. Henceforth education has been largely confined to isolated specialties of building design, landscape design, urban planning and the like. As a result of this separation of disciplines, practices developed over years of urban development are now incompatible with conventional engineering and planning standards. Terms and standards within various fields are not consistent, and are further compromised by national variations of language and practice. As a result, the competitiveness of European practitioners on a global stage has been compromised.

The European School of Architecture and Urbanism is particularly focussed on the goal to develop a pilot curriculum that integrates the disciplines of architecture and urban design. The ESUA project brings together existing initiatives in several European countries, to develop innovative measures and instruments to promote a recognised European qualification in urban design and architecture.

The project rests on the premise that urbanism and architecture should be taught as an integrated discipline that brings interdisciplinary technical expertise to the complex problems encountered in city and town design. Present European courses in architecture and urban design are divided into separate disciplines, with European urbanism as a topic mostly excluded from architecture and taught in specialised schools. Students and practitioners from the different fields have little contact with each other's ideas during education and professional life.

The ESUA project introduces urban design as a main curriculum topic from the beginning, to form the basis for all design and architecture. Course modules will be developed to address areas that are particularly sought after by governments and the market. These include but are not limited to: community involvement in planning by the "Charrette" (or “Enquiry by Design”) process; spatial analysis using "Space Syntax"; design for walkable neighbourhoods; transport-oriented development; urban sustainability; building conservation; urban regeneration; adaptive re-use of abandoned buildings; transport planning; regional vernacular architectures of Europe; infill development in historic centres; redevelopment of social housing estates; traditional building crafts; and architectural design to enhance historic environments.

The project's university and lifelong learning partners have designed, tested and assessed a transnational curriculum in a pilot programme by its 13 partners. Institutional partners can offer this curriculum as modular elements of a full degree programme through their institutional accreditation. The project will develop course materials for modules able to be taken as units for Continuing Professional Development (CPD), as a Bachelor of Architecture, as components for a part-time Master of Arts (MA) in Urban Design, or as required precursors for Doctoral study.

The ESUA project aims for these courses to become available as modular curricula for adoption by other universities, or as accredited units for students to take as part of other courses across Europe. To this end, we will encourage continuous training of teachers as well as practitioners. Modules will focus on specific issues relevant to each country, and the aim is to add more modules and more countries to the project in the future.

The project results are also transferable to others, such as town planners, politicians, and people interested in the future development of their cities and villages. The process will include dissemination of the course curriculum free to others worldwide.

The curriculum as developed and tested offers a number of key innovations:

1. Students work on actual projects, alongside practicing professionals and stakeholders. There they learn “meta-skills” such as collaboration, facilitation, leadership and on-the-job self-education.
2. Students learn to collaborate with others across borders and with varying local conditions, languages and standards of practice.
3. Students learn a range of subjects in addition to technical specialties, including urban subjects (sociology, economics, political science, et al).
4. Students travel to varying locales and study local history and precedent. They learn to listen to local residents, research local conditions, and diagnose local needs and assets. They learn to analyze and compare the evolution of urban and architectural history in different cultural contexts.
5. Students gain hands-on experience in the building process, through study of building trades and crafts, and through hands-on exercises.
6. Students learn to develop and test design hypotheses through collaborative simulation processes, applying an evidence-based approach.

The ESUA curriculum has been developed through a two-year pilot phase that included five test modules in four countries. The modules have been built around actual workshops that brought pilot students from several partners and elsewhere together with professionals and other stakeholders on actual projects, and tested their ability to learn in such a dynamic on-the-job environment. The workshop programme was supplemented with lectures and student preparation activities, to create a full working model of each of the five primary modules.

In addition, the pilot phase has included curriculum development workshops which combine elements of existing partner curricula, research into new curriculum approaches, and new pilot curriculum concepts. The curriculum is planned to be further developed and disseminated through a second phase, the Education and Dissemination in Urbanism, Architecture and Craft (EDUAC). This phase will develop additional detailed curricular materials and test the more detailed operational requirements.

The results of this pilot phase, documented through the detailed reports and assessments of the test modules herein (see Section Four), can be summarized as follows:

- The modules functioned successfully.
- Students reported that they benefited greatly from the “immersive” workshop experience, and from work across a range of countries and contexts. (From a student group report: “The knowledge we acquired during the workshop seems enormous to us. It has been a unique experience to participate in such a big scale (and real) project.”)
- Work of the students was received enthusiastically by other workshop participants.
- Students reported that they believed they needed such a curriculum, and were not receiving it in their education.
- The project gathered detailed feedback on the success of specific elements, and areas needing further development.
- All participants concluded that the test module period was a strongly encouraging success.

Five Current Challenges, Five Timeless Challenges

The European School of Urbanism and Architecture recognises that the architecture and urban planning professions face an unprecedented set of connected modern challenges. At the same time, environmental design professionals must also fulfil their timeless duty to create and maintain buildings and settlements that will promote the health and well-being of humanity, today and for future generations.

To meet these changing obligations, built environment professionals will need a new combination of skills and inter-disciplinary approaches, combining advanced techniques, broad knowledge, and common-sense abilities. They must be prepared to take on a key role of leadership and collaboration with other disciplines and sectors.

In turn, educators must be able to prepare students and continuing-education professionals in the skills and the knowledge needed to meet these changing obligations. Precisely because they are changing, educators must emphasise learning skills such as self-education, habits of life-long learning, collaboration and peer-to-peer instruction. Developing such “meta-skills” is a top priority for the ESUA programme.

The five *current challenges* for the future of the European built environment are:

- 1) ***Degradation of the natural environment***, including climate change;
- 2) ***Urban fragmentation and sprawl***, including social isolation, functional segregation and loss of coherence;
- 3) ***Loss of local identity*** – the loss of unique local cultural value and related economic value;
- 4) ***Loss of craft skills***, and the “culture of building” needed to protect and revive Europe's vast range of built heritage – providing for different ways of life and regional employment;
- 5) ***Incoherence of the development process***. Lack of effective collaboration across fields and across national borders; lack of effective public and private cooperation to meet long-term needs and to remain economically competitive; lack of effective local participation of stakeholders.

These are, of course, the negative formulations of the challenges. The positive formulations – that is, the ways they can be met -- are the tools and methods that ESUA will bring:

- 1) ***Sustainability*** in all aspects of planning and development;
- 2) ***Integration*** of urban and architectural scales;
- 3) ***Local identity and context***, with emphasis on the particular issues of European contexts;
- 4) ***An integrated culture of building*** combining design skills with crafts skills and project management skills;
- 5) ***Coherent development process***, combining a range of disciplines, sectors and national participants into an effective process.

In addition to these five current challenges, we may add five *timeless challenges* that have always been necessary for the built environment, and must also be prominent aspects of any curriculum. They are:

- 6) **Functionality** of useful, durable, secure buildings and environments;
- 7) **Connectivity**, freedom of movement and social connection across a range of opportunities;
- 8) **Adaptability** in the users' environment; ability to modify by users and to meet changing needs over time;
- 9) **Beauty**. Overall coherence; comfort and well-being; linkage between scales; harmony;
- 10) **Diversity** of social and physical conditions. A range of types, intensities and suitability for a variety of occupants.

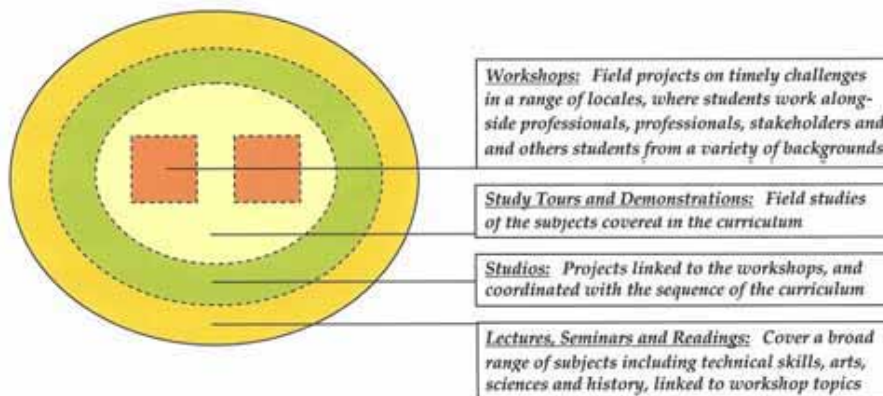
The Essence of the Curriculum:

Project-Based Learning in Place

As noted, the workshops form the heart of the ESUA curriculum. Students take project-based modules anchored by workshops in a range of EU settings, working with a range of challenges. There they are exposed to the complexities of an actual project – the tools, the participants, the problems, the skills needed to learn on the job and find the solutions needed.

The ESUA Model

In-place workshops are the heart of the curriculum



The workshops are further supported by coordinated modular activities, including study trips, reading, lectures and demonstrations. These form an integrated module that can be taken as an *a la carte* course for continuing professionals or students at other institutions. They can also form the core of a full-time programme of study leading to a degree.

In a full-time model, the modules are further supported with coordinated studio work offering exercises that give students experience in problem-solving in the topics discussed.

Lastly, academic work supports the modules in a range of scholarly disciplines and technical subjects. These include science, history, philosophy, the arts, engineering, design and construction.

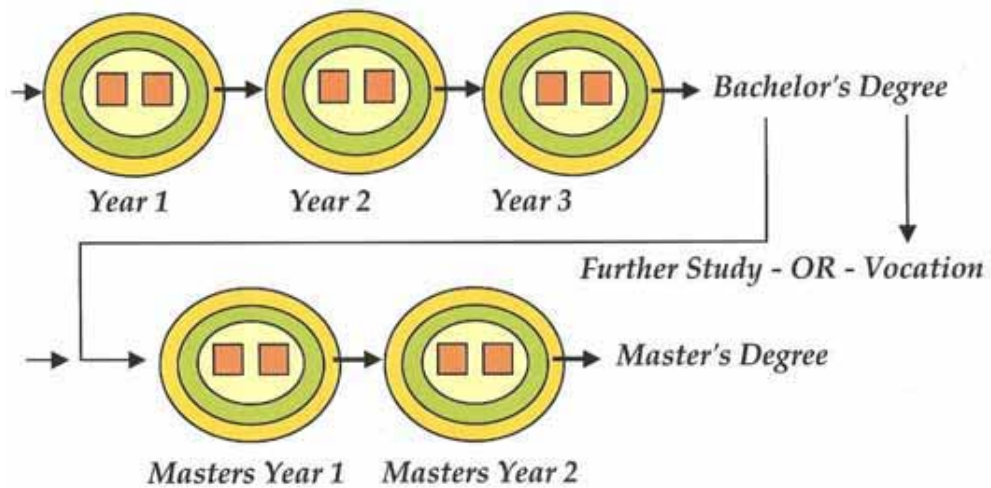
In this full-time model, several full years of modular education, including studio and classroom study in professional disciplines, may be structured to fulfill requirements for a Bachelor's or Master's degree. The illustration below shows a 3-year Bachelor's programme leading to a non-professional degree in architecture. From there, the student may proceed directly to a vocation (for example in construction or related fields), or to a subsequent 2-year

master's programme leading to a first professional degree in architecture with a specialisation in urban design. The latter structure is the so-called "3+2" programme outlined in the Bologna Process for the harmonization of European professional education.

ESUA Degree Programmes

Coordinated annual sequences leading to Bachelor's, Master's or pre-Ph.D requirements

(Can also be taken as continuing education)



Implementation

As noted, the ESUA Programme proposes as an ultimate goal the development of a curriculum for five years of study combining three years of undergraduate study with two years of graduate study, under the “3+2” plan outlined in the Bologna Process. The course of study would lead to an accredited degree in architecture with a specialty in urban design, sufficient to prepare the student for work on complex urban projects in a variety of roles. This new kind of professional – what one might call an “urbitect” - would combine urban and architectural expertise with the management and facilitation skills of a generalist.

In addition, as a more immediate objective, the programme proposes elements that may be implemented within existing educational programmes. This section describes several measures as incentives for universities to face the upcoming challenges and to modify their teaching to implement new master courses so as to position themselves within this innovative field.

Target groups for the ESUA programme are:

- 1) Practitioners
 - a) professionals: architects, engineers, planners, urban designers, craftsmen, lawyers, sociologists, economists
 - b) private sector (companies, developers, real estate etc.)
 - c) administration
 - d) civil society/non-governmental organizations
- 2) Education stakeholders
 - a) future practitioners (i.e. students)
 - b) teachers
- 3) Members of the general public

The following section deals with the tools for developing the implementation of the programme, and in particular the establishment of an “ESUA Foundation” as an implementation strategy. We also discuss herein several tools for the implementation of the curriculum into existing education environments.

Joint ESUA workshops and lectures are planned to combine the ESUA Master Courses and future ESUA Bachelor courses with advanced training for practitioners. They would include architects, urban designers, town and regional planners, sociologists, landscape architects and planners. Furthermore ESUA Workshops offer advanced education for students of the above fields and vocational training for the private sector, NGO’s, craftsmen, and administrations and municipalities.

This proposal is based upon the experience gained within the last ESUA curriculum

workshop and the university background of its authors.²

The objectives of this implementation strategy are:

- Improved education of architecture students, and improved skill of professors, to meet current challenges;
- Introduction of a European standard of education for architecture with a focus on urban design (“European Urbitecture”);
- Implementation of European content into architectural education;
- Opening of a broad public debate on the European culture of building and planning;
- Strengthening the link between architecture, town and regional planning, and urban design (“Urbitect-education”);
- Cross-linking of European Universities;
- Further Education of professionals and practitioners of architecture, urban design, town- and regional planning, landscape architecture and planning and related professions.

Component: ESUA educational standard

The evaluations done in the ESUA modules and workshops revealed several weaknesses of contemporary education of architecture at European Universities. The intent of the ESUA programme is to address these weaknesses by developing a standard of education for architecture and urban design to face the future challenges of European architecture and urban design.

We propose that there is an essential core of architectural education, which must be covered as a minimum. Around this core universities may construct non-compulsory courses according to their individual profile and the contents of the ESUA Model Curriculum. This guarantees a Europe-wide standardised core of ESUA education can be strengthened and complemented with the particular local content to meet local needs.

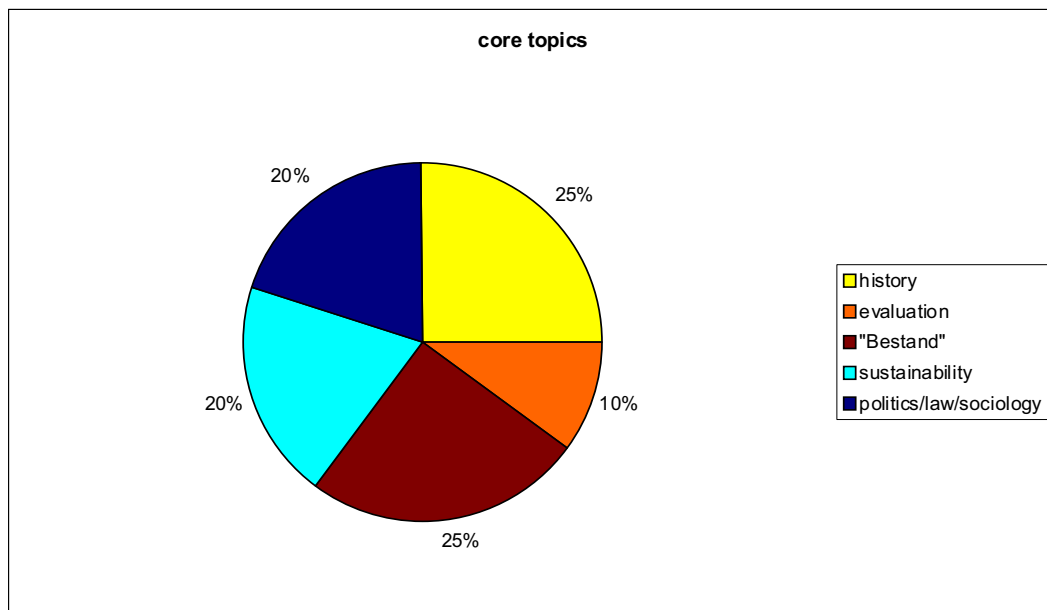
We propose here the elements of this educational core according to their weight. As there will presumably be a different number of compulsory semester hours within the different certified Master Courses, it is an easy matter to adjust the hours to maintain the same ratios.

The five elements are as follows:

1. The teaching of history and precedent;
2. The teaching of preservation and rebuilding (“Bestand”);
3. The teaching of diagnostic and assessment tools;
4. The teaching of principles of sustainable development;
5. The teaching of social, political, legal and economic parameters of the built environment.

The approximate ratios of the five core topics is illustrated in the chart below.

² This section was developed under the leadership of ESUA partner colleagues at Technical University Berlin, with the active participation of other partners.



History (Approx. 25%)

Profound knowledge of the history of architecture and urban design in Europe as a background for developing tools and evaluating existing and new architecture and urban designs. Understanding of precedent and evidence of what has been successful in particular contexts.

- Profound knowledge of history of European architecture
- Profound knowledge of history of European urban design

Preserving/Rebuilding/Extending ("Bestand") (Approx. 25%)

European heritage is of great cultural and economic value. In addition, existing buildings constitute an enormous resource. Therefore preserving, rebuilding and extending the existing architecture and urban fabric must be of high importance. Special attention must be paid to the need to preserve European culture in the form of its monuments.

- Resource-saving redevelopment
- saving and preserving built heritage
- regional materials and construction techniques
- pedestrian-oriented sustaining of existing centres
- Strengthening of district centres
- Dealing with large housing estates

Sustainability (Approx. 20%)

The European Union has pledged to lead the way in climate-adapted handling of resources, and in wider goals of sustainable development of the built environment.

- Sustainable architecture and its tools and skills
- Sustainable urban design and its tools and skills

Politics/Law/Sociology (Approx. 20%)

Special attention must be paid to the specific political and legal conditions for the production of architecture and urban design in a range of European settings. Practitioners must have

basic knowledge regarding actors – politics/administration, economy, civil society – and their role in developing and administering building and planning code. Strong attention must also be paid to social implications.

- actors: politics/administration, economy, civil society
- law: main features of building and planning codes, European Regional Planning Act
- Social conditions of architecture and urban design

Evaluation (Approx. 10%)

Sustainable architecture and urban design requires examples of best practice, and a culture of evaluation to select and refine these examples. The system of evaluation must be Europe-oriented and local community oriented.

- Evaluation of architecture, examples of best practice
- Evaluation of urban design, examples of best practice

Workshops – the Core of the Methodology

As outlined elsewhere, project-based learning is the core of the methodology. Students will be immersed in workshops on actual projects in a range of European conditions. Each should be at least one and up to two weeks in length. Ideally there should be two workshops per semester.

- Urban Design Workshop
- Architecture Workshop

Implementation of the ESUA Components

For the long term implementation of the above mentioned contents and foci into the existing higher education environment, the following components would be possible:

1. ESUA Educational Standard
2. ESUA Foundation
3. ESUA Certificate
4. ESUA Master Courses
5. ESUA Bachelor Courses
6. ESUA Funding
7. ESUA further education & training
8. ESUA Workshops
9. ESUA.net
10. ESUA Awards: Best Practice & “Urbitecture” Award
11. ESUA Academy (3+2 programme)

This paper deals with components one to nine.

First, the function of the ESUA Foundation, as an operator for the different ESUA components is described in detail.

Component: ESUA Foundation (“What”)

To carry through the implementation on different levels, the programme needs an executive that undertakes tasks and reacts flexibly in structure to the challenges arising out of the different phases of implementation/evaluation. Therefore the legal form of a **foundation** seems to be optimal to meet the demands.

First, a foundation can follow the above listed objectives in a politically independent way, and adapt to the various EU funding programmes. Reasonable controls and sustainable spending of EU funds are assured by the involvement of EU decision-makers into the governance of the foundation.

As a funding strategy, the ESUA Foundation could be patronized by the EU.

Involved persons and bodies/competencies (“Who”)

- European Union (Funding)
- ESUA Foundation (Concept: work on contents and organisation, verifying requests)
- Institutes and Planning Faculties/educational committee of European Schools of Architecture (Concept: Implementation of the Curriculum into teaching practice)
- Professors/teachers (teaching)
- Students (target group, addressee)

Tasks:

- Lobbying activities regarding urban development, European urban design (**PR**)
- Publications (**PR**)
- European networking/creation of a network (**PR**)
- ESUA Awards: best-practice; students’ competition; Urbitecture Award (**PR, competition board, educational board**)
- Higher education (consulting and support for European architecture schools with a focus on urban design) (**consulting**)
- Adaptation of the contents of the ESUA educational standards to changing demands (**educational board, observation**)
- Certifying universities (**certification department**)
- Distribution of European funds (**certification department, finance**)
- Research (**observation**)
- Monitoring of the European higher education environment (**observation**)
- Training for professionals (**workshop department**)
- Training for teachers (**workshop department**)
- Organisation of ESUA workshops (**workshop department**)
- ESUA.net: e-learning and communication platform (**.net department**)

Structure: (“How”)

- Management
- content committee/staff (determines certifying criteria, is dissolved after defining the statute)
- certifying and funding
- observation, research, monitoring
- department for public relations
- educational board (determining contents of workshops)
- competition board
- workshop department (organizing workshops)

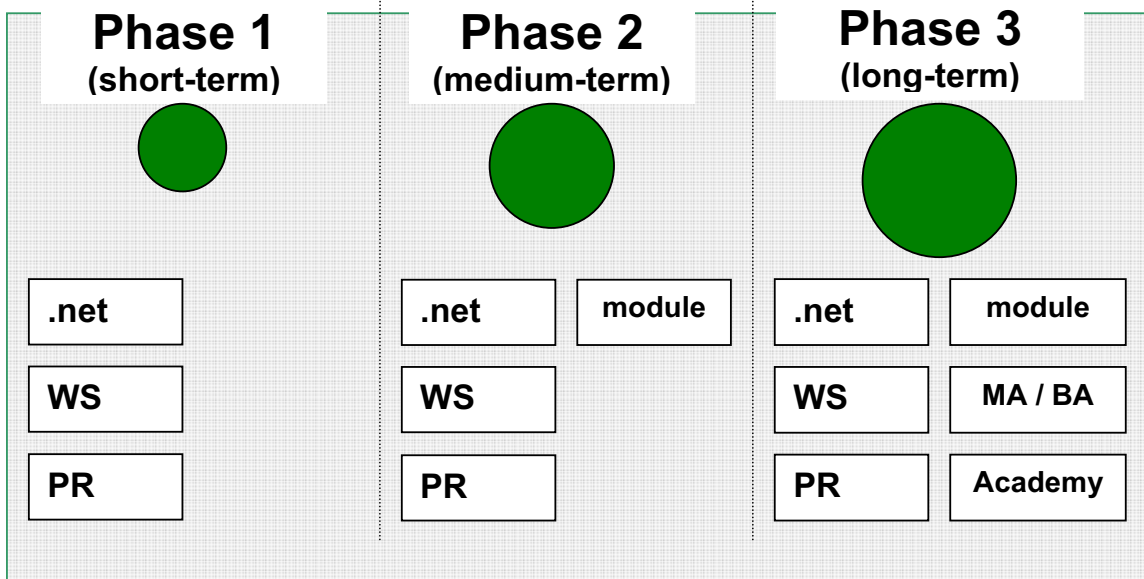
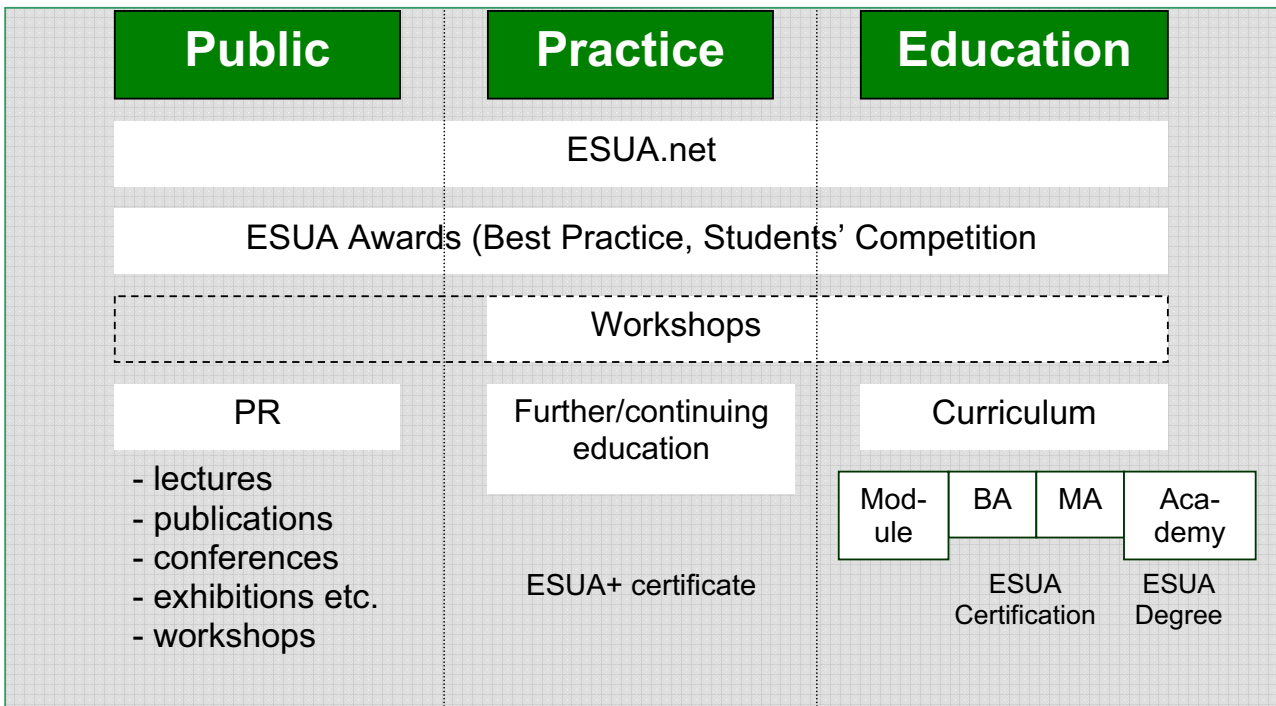
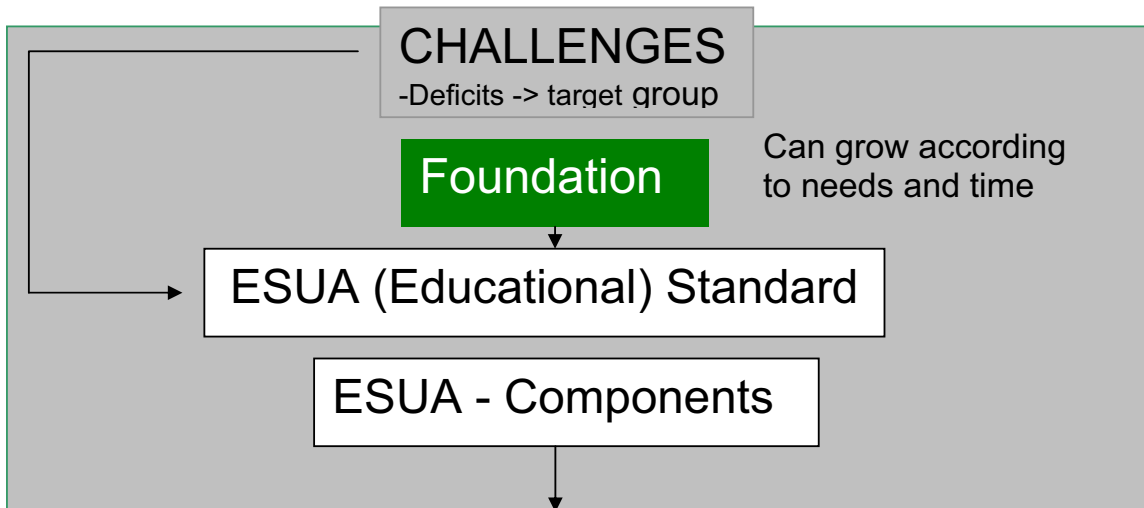
Schedule (“When”)

1. Conception of an ESUA Foundation: Organisation, Funding, affiliate European structural programmes, defining the location, etc. (~ 2 years)
2. Foundation of an ESUA Foundation: employment, contracting
3. Start-up-phase: definition of ESUA educational standard by conferences, colloquia, research; evaluation of European higher education; establish an ESUA Online Platform, accreditation by professional unions, certifying system; definition of criteria for approval, contract modalities for EU funding for the approval or creation of ESUA Master courses – public relations (~ 2 years)
4. In the long term ESUA could be implemented into architectural Bachelor studies, as this is at the moment more complicated than implementing ESUA into the master course system.

The main fields of the Foundation activities are the following:

- **ESUA – going and being public**
- **ESUA goes university**
- **ESUA in practice**

The following schemes shows where the single components fit into the overall setting of the proposed way of implementation. Also how the different components can be used to implement the overall ESUA idea over time. Starting with the “immediate feasible” and opening a future perspective for activating all components. These three phases of growth are meant as a possible scenario and could be adapted to the actual needs and circumstances.



Objective 1 (Field 1): ESUA – going and being public

- **Lobbying activities regarding urban development, European urban design**
- **Research**
- **Publications**
- **ESUA Awards: best-practice; students’ competition; Urbitecture Award**
- **Monitoring of the European higher education environment**

In order to widely diffuse ESUA as a quality label for European Architecture and Urban Design one of the main tasks for the first phase after establishing the ESUA Foundation will be lobbying and public relations work.

Different tools can be used to achieve the above:

The ESUA Foundation and its certificates will need to be accredited by the different professional unions and organizations in order to gain market credibility and reputation. This can be achieved by contributing to the daily professional and academic discussion and by aggressive research and continuous monitoring of the higher education environment.

Furthermore, different awards for students, practitioners and practice can be used to place the ESUA concepts on the market as a measure for good European Architecture and Urban Design.

With ESUA firmly situated in the market it will be appealing for universities and professionals to apply for ESUA certificates.

Objective 2 (Field 2): ESUA education

- **Higher education**
- **Certifying universities**
- **Distribution of European funds**
- **Adaptation of the contents of educational standards to changing demands**

Apart from placing ESUA in the market, the central aim of ESUA is to influence the European higher education environment towards developing and introducing a new profession – that of an architect with particular expertise in urban design, and with a strong set of tools and skills to meet the challenges outlined above. (What one may call an “urbitect.”)

Therefore, we propose an “ESUA educational standard” that can change the focus in education of architects and planners towards an integrated architecture and urban design education.

Under this arrangement, universities could seek to certify their existing or newly created Masters courses for an “ESUA certificate.” When a Masters course is certified, it would enter the ESUA network. It would be able to gain the benefit of ESUA infrastructure, support by the ESUA Foundation and (potentially) ESUA funding.

If a Masters course doesn’t fulfil the requirements of the ESUA educational standard, the university would have the chance to apply for organizational-structural funding in order to

either modify an existing masters course structure to fit the ESUA requirements, or develop a new ESUA Masters Course.

The different levels of possible funding (explained in more detail below) would make it attractive and relatively easy for universities to gain an ESUA certificate.

The contents of the ESUA Educational Standard has to be continuously developed and evaluated to meet future demands of integrated education and to adapt to changing conditions and challenges.

In the longer term the same can be applied to bachelor studies in order to achieve a general change in architectural education. We note that this generally requires more institutional change than a masters' level programme and thus would be the last stage of implementation.

Objective 3 (main field3):

- **Training for professionals and teachers**
- **ESUA further education & training**
- **Organisation of ESUA workshops**

The aim to design a new integrated professional requires different strategies for the above target groups.

A good student education can only be offered if the teacher knows the challenges of European architecture and urban design, and integrates the approaches and adapted instruments into his educational concepts. Therefore it will be necessary to offer further education & training for this group as well. That can happen by means of seminars, conferences or workshops.

ESUA further education and training for practitioners and students can be included into the same workshops ESUA students have to attend to during their studies. As we have seen with the pilot modules, the combination of professionals and students within one workshop can be inspiring and informative for each participating group if appropriate professional supervision and choice of topic is provided.

To achieve a high standard of workshops these workshops should be organized not by the ESUA Foundation but principally by the universities and teachers themselves, who are already involved in the ESUA Master + Bachelor courses.

The ESUA Foundation can provide funding or technical support (technical infrastructure) such as:

- Staff appropriations (employment of student assistants for the organization and performance, remuneration of professional lecturers, involvement of professionals with economic or administrative background and expense allowance)
- Material costs (tangible means for the workshops, copy costs, etc.)
- Providing technical infrastructure, tools (equipment, payment of the costs for providing internet, etc.)
- Workshop scholarship grants, awarded as financial support or support for talented students, covering expenses for travelling and lodging.

Component: ESUA.net: E-learning platform as central platform for communication and knowledge exchange – potential for intercultural exchange and communication (“How”)

The ESUA certification relies upon the goal to connect universities and workshops all over Europe. The e-learning platform virtually connects the single Master/Bachelor courses, workshops, countries and all involved parties. This is essential, because the access to well-assorted information is one of the key resources for up-to-date education and professional practice.

ESUA.net provides access to up-to-date issues on architecture and urban design, promotes professional discussion and debate, and offers access to a great range of articles and other learning support. Furthermore it is an archive of the outcomes of ESUA Master and Bachelor courses and Workshops, and their resources.

Concerning the wider spread of the ESUA idea, an e-learning platform offers an important central knowledge and communication platform. Alongside the spatial spreading of ESUA components across the EU it serves as a central contact point supporting communication between all involved parties.

Who?

The e-learning platform is a central contact point and medium for communication of the ESUA Foundation, which is also in charge of it. By providing knowledge and networking, the students integrate their knowledge, master course results and workshop products into the network.

For Whom?

The ESUA e-learning system is for

- Students
- Teachers (materials)
- Alumni
- Potential employers

When?

Due to its importance ESUA.net will be established early in the life of the ESUA programme and will further develop from there. It serves as a medium for information for potentially interested persons.

How?

The two main components of the e-learning idea are:

1. **Knowledge platform: ESUA Wiktionary:** Offers the possibility to provide and exchange theoretical/professional input for all ESUA students within ESUA Master and Bachelor Courses and individual participants of ESUA workshops and to hand over the gained knowledge to the following workshops. The ESUA model curriculum topics can serve as a basis for collected content within the ESUA Wiktionary. As the

earlier workshops showed, the collection of teaching material especially for workshops taking place in different countries is difficult. The e-learning platform offers:

- Providing own “Wiktionaries” for the teaching contents
- Access to relevant magazines, articles, materials, etc. (sponsoring possibilities)
- Teaching material, which can be provided beforehand/afterwards by the lecturers
- Student work and project products

- 2. Communication platform ESUA Forum:** The participants of the workshops are able to communicate with participants from other current or past workshops independent from their location. Constructing networks (especially intercultural/interdisciplinary) in the times of Web 2.0 is very attractive. The students are able to exchange workshop experience, maintain contacts and follow ongoing projects. Additionally the platform could provide information on vacant positions for ESUA students.

Component: ESUA further education & training (ESUA+)

Short description of the model (What?)

ESUA+ is provided for individuals to further educate themselves according to ESUA contents. The participation in workshops and seminars is open to students and practitioners/professionals with the background of architecture, town- and regional planning, urban design, sociology, landscape architecture and planning and related professions. It can also include participants from the private sector, crafts, and municipalities and administration. It offers the chance to an ESUA+ attestation after the successful participation in a certain number of seminars and workshops.

Institutions/actors (Who?)

ESUA Universities

ESUA universities host ESUA Workshops as a compulsory part of the ESUA studies. A certain amount of seats is reserved for external participants to ensure an interdisciplinary mixture of workshop participants.

ESUA Foundation

The ESUA Foundation serves as patronage and funds the workshops. It provides support regarding content and organization and placing external lecturers.

Target Group (For whom?)

- Students (architecture, town- and regional planning, urban design, sociology, landscape architecture and planning) studying at universities, which do not offer certified ESUA Master courses and seek for an European extra qualification.
- Architects, town- and regional planners, urban designers, sociologists, landscape architects and planners and ESUA related practitioners from professional spheres, seeking for further education strengthening their professional chances with an extra qualification
- Private sector, crafts, administration and municipalities, NGO's.

Objectives (Why?)

1. Students studying courses without ESUA certification are able to attain ESUA contents. This could take place as an extra education for students of architecture and planning and sociology in form of summer schools/workshops at ESUA certified Universities respectively at places determined by the ESUA Foundation. The individual attestation is awarded for the successful participation in a certain amount of ESUA courses following the core content of ESUA. This would be of lower value than attending an ESUA certified Master course.
2. Additionally architects and planners with professional background are able to attain an extra qualification on a European level. Summer schools can also serve as further education. The exchange between students and professional experience can be enriching for both sides. This creates an advanced education system which is adaptable respective the circumstances of professional life (time, location).

In spite of a lower value, the attainment of an ESUA+ certification is attractive for showing a European extra qualification after finishing the studies. (Eventually also after a terminated study course) When ESUA has been established as a “label”, the confirmation of an “ESUA+ certification” is desirable and serves as further education to a “European Urbitec”.

Workshops and lectures (How?)

Out of the pool of combinations of workshops and funded lectures offered in collaboration with the ESUA universities, the participants choose a certain amount of basic ESUA workshops. According to this an international choice is possible and also recommended.

With the background of the last workshop, which took place in Berlin, a combination of theory and practical features regarding the content of the workshop is desirable:

- lectures within the workshop (in line with the overall ESUA content)
- practice work within the workshops
 - workshops related to practice with “real” projects and “real” project partners, meaning lecturers of different disciplines, the integration of real charrettes respectively real selection committees constituted by citizens and different experts – important is a motivating realistic workshop atmosphere

Conclusion - What is the benefit?

The workshop module structure establishes the foundation for intercultural work. The possibility to attend several workshops in different countries together with participants from countries all over Europe supports intercultural competencies and “**glocal**” thinking. The participation of persons with different professional backgrounds supports interdisciplinary competencies as well.

These are important core competencies for future European planners and architects who will have an advantage with this extra qualification on the European employment market. The increased competencies will also meet critical professional and societal needs, thereby improving the quality of urban design and architecture.

Further advantages of the ESUA+ programme are:

- Increased professional expertise
- Additional qualifications
- Early educational contact with experts, who usually do not appear in teaching
- Interdisciplinary/intercultural working experience as a special qualification in managing EU-wide matters
- Projects in step with actual practice, supervised and evaluated by real actors
- Experience in presenting designs to a real jury reviewing these designs
- Intercultural/interdisciplinary working and networking

Component: ESUA Master courses

Short description of the model (What?)

The ESUA certificate for existing and newly created master courses serves the implementation of the above mentioned contents and foci into the existing higher education environment.

The ESUA certificate attests that the examined study course imparts the ESUA Educational Standard determined by the ESUA Foundation within its compulsory courses and hence meets the demands for a European education of architecture with a focus on urban design.

Institutions/actors (Who?)

The ESUA Foundation awards universities for certain courses with ESUA Certifications on behalf of the EU.

The certifying committee of the ESUA Foundation examines the study courses and awards the Certificate following a specifically developed certifying system respectively formulates requirement for adapting the course to become certified.

Target Group (For whom?)

Universities offering courses of architecture can apply for the ESUA certificate.

Objective (Why?)

As mentioned above, the ESUA certification of study courses is set up by the idea to combine universities all over Europe regarding contents and forms and spread European quality standards.

Certifying (How?)

The universities have to apply with their selected study courses at the ESUA Foundation. After a successful examination following a to be developed certifying system, the university receives the ESUA certificate for the selected course and gains entrance to the different structures and funding programmes of the Foundation:

Funding is offered as follows:

- Every certified course/university is required to host an ESUA workshop following a determined rhythm. Funding by the ESUA Foundation and organizational support by the ESUA workshop group may be offered for this purpose.
- Funding of publications.
- Funding of public events.
- Staff appropriations to cover the expenses of additional capacities.

Certified study courses gain full entrance to ESUA.net. (ESUA knowledge platform and communication platform.)

In case a university fails to apply successfully, a detailed argumentation will be added to the refusal, which permits the university to gain an overview on the demanded adaptations. If the university decides to restructure an existing study course respectively to implement a new ESUA Master course, funding and additional organizational support can be sought.

Conclusion: What is the profit for universities and students?

- Offering an additional qualification
- Guarantee European standards
- Involve experts, who usually do not appear in teaching
- Interdisciplinary/intercultural working experience as a special qualification regarding EU matters
- Projects in step with actual practice
- Intercultural/interdisciplinary networking

Component: ESUA Bachelor Studies

As ESUA aims to change the foci in education of architecture and urban design in general the implementation into existing or newly designed bachelor studies can also be thought of. As this is at the momentary stage harder to realize within the existing educational environment this step will not be discussed further.

Overall Potentials of proposed implementation: ESUA Potential

The implementation takes place on different levels. Thus the schedule for implementation can be varied regarding time planning in its single parts, so that Workshops organised by the ESUA Foundation can be offered before the first study courses have been examined.

Generally it will also be possible to realize only parts of this concept or the concept as a whole. An ESUA Certification only for Master courses without individual ESUA+ certifications and the ESUA Academy with its model curriculum would be possible and realizable. Another variation could be starting with an implementation of the ESUA Certification at first or with the realization of the ESUA Academy.

The programme will also be adaptable to different universities regarding the different levels of Certification. By restructuring the study courses and the monitoring of certified studies, a sustainable change in the sense of a European orientation can be achieved.

Teachers and students serve as multipliers for the ESUA idea. A change of the perception and demands on European architecture and urban design can be achieved within the professional, academic and practitioners sphere.

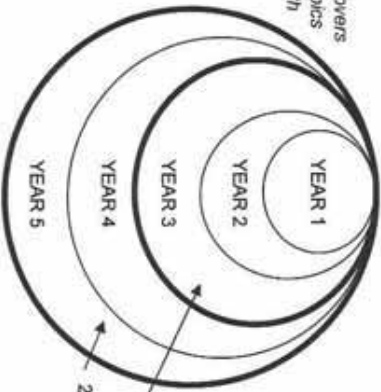
THE MODEL CURRICULUM

ESUA PROJECT: PROPOSED CURRICULUM FORMAT

INTEGRATED SUBJECTS AND CYCLES OF LEARNING:

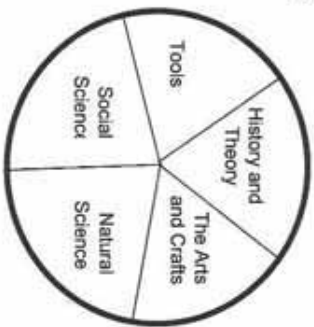
"Holographic" ESUA Curriculum Model ("3+2"):

Each year covers the same topics in more depth



An integrated model of human knowledge:

Each of five topics is covered daily in a close one-week cycle



SAMPLE SEMESTER STRUCTURE (ELEMENTS FOR ILLUSTRATION):

	Weeks 1,2	Week 3	Weeks 4,5	Weeks 6,7	Weeks 8,9	Wk 10	Weeks 11,12	Weeks 13,14
Morning	Theory	STUDY TOUR		Theory	Theory	Theory	WORK-SHOP	
Afternoon	Project Exercise	Project Exercise	Project Exercise	Project Exercise	Project Exercise	Project Exercise	Theory	Theory

The Full-Time Degree Programme Model

As previously noted, the ESUA curriculum is designed to function in a variety of modular formats, from a single workshop module – taken for example as a summer school or continuing education course – to larger coordinated sequences of modules. Its elements may also be used as modular elements within other curricula.

In the ultimate case, the modules may be assembled into a full-time degree programme, leading to a Bachelor's or Master's degree, or to a combination. As noted previously, the latter is an ambitious goal that will require extensive implementation. Nonetheless, we have designed the curriculum from the outset to accommodate such a programme, so as to ensure that the modular elements work well together in the ultimate five-year sequence, and in the various possible shorter combinations.

We also note again that there is a successful precedent for implementation of such a programme, in the curriculum developed by one of the ESUA partners for the Prince's Foundation for the Built Environment in London. That curriculum was structured along very similar lines as a modular workshop-based series. It has now been implemented as a full-time Masters degree programme at the University of Oxford in the UK. Though there are important differences between the two programmes, nonetheless this ongoing relationship offers an important opportunity to compare notes and exchange lessons in the development process.

The model used for the design of the full-time sequence has been that of the Bologna Process, which aims to create a "European Higher Education Area" with compatible standards for accreditation and degrees. In the model established by the Bologna Process, three years of undergraduate study earns a non-professional Bachelor's degree. From there graduating students may proceed to a vocation or, if qualified, to an additional two years of graduate study culminating in a Master's degree. They may then proceed to professional practice (with appropriate additional credentials as required), or to a further Ph.D. programme, typically for an additional three years.

Accordingly, in the ESUA model, students may earn an initial non-professional Bachelor's degree in architecture, with a specialty in urban design. From there they may proceed to a vocation (for example, building component design or building crafts), or, if qualified, to an additional two years of study. At the end of that process they may earn a Master of Architecture as a first professional degree, with a special qualification in urban design. They may then go on to professional practice, or to a Ph.D. programme. Such a programme is not proposed as such within the ESUA curriculum, but the curriculum may function as a required element within a Ph.D. course of study.

As noted previously, the in-place workshops form the heart of the curriculum, and are supported with three other key curricular elements:

- 1) Study tours and demonstrations;
- 2) Studio exercises;

- 3) Courses in both technical and general subjects, including lectures, reading assignments, paper, exams and the like.

The courses are structured in a logical series, and in tight coordination with the other elements of the curriculum, so as to couple theory closely with practice. Classroom subjects explore and relate to aspects of the workshops, the study tours, and the studio exercises. Students are encouraged to explore connections, and to understand that individual subjects are not isolated specialisms but must be seen in relation to other subjects.

The courses are structured in a weekly cycle, alternating with studios and with other curricular elements. The tight iterative cycle allows students to explore the connections between topics, and to apply theoretical insights to their own work, drawing their own theoretical conclusions in turn.

The courses are designed to provide a thorough education in three areas:

- 1) specific technical competencies, at a minimal level as required for practice, or higher;
- 2) a solid general education in history, philosophy, the arts and sciences;
- 3) so-called “soft” skills: ability to find connections, ability to collaborate with others, ability to lead and facilitate, ability to learn on the job, and habits of life-long learning.

The courses are structured into five fields:

- a) History and Philosophy;
- b) Arts and Crafts;
- c) Natural Science and Technology;
- d) Social Science and Technology;
- e) Tools and Skills.

Courses in the first three years of study change yearly, and thus there are fifteen courses (five per year for three years.) During the second two years of Masters’ study, the courses change every semester, with the last semester as the student’s Diploma Project, demonstrating a minimum professional level of competency in work. Thus the previous three semesters also have fifteen courses, five per semester. In the Masters’ programme, the topics recapitulate the topics of study covered in the Bachelor’s programme, but at a more advanced and profession-focussed level.

In each cycle, the courses follow a logical progression of complexity, from relatively elementary subjects of land planning, basic ecology and the like, up to more advanced topics of urban complexity, including modern challenges like climate change.

Similarly, courses follow the historical sequence of architecture and urbanism, beginning with prehistoric agrarian settlements, and ending with complex modern cities. The topics of urban space and building typology also follow this sequence.

In this way, students are able to grasp both the evolution of modern challenges, and the historic process of growth in the European and global traditions of building.

European School of Urbanism and Architecture: Draft Curriculum Structure For 3-Year Bachelor and 2-Year Master Programmes

NOTE: The curriculum integrates three years of undergraduate study and two years of Masters study, which can also be taken separately. Courses are modular and can also be taken in continuing education units over a longer period.

5 overlapping subjects in a 1 theme per year weekly cycle	Bachelors Year 1			Bachelors Year 2			Bachelors Year 3			Masters Year 1			Masters Year 2	
	Subject	Settlements	Villages & Towns	Cities & Regions	Semester 1	Semester 2	Semester 1	Semester 2	Semester 1	Semester 2	Individual and Group Study			
General focus of each year's content:	social and ecological parameters	Economics, politics and law	Industry, technology, complexity	Advanced tools and techniques	Collaborative and interdisciplinary design	Sustainability and environmental justice						DIPLOMA PROJECT		
WORKSHOPS ("Spine")	1. RURAL ECOLOGIES 2. DEVELOPING REGIONS (e.g. Romania)	1. CONSERVATION 2. HISTORIC INFILL (e.g. Rome)	1. CLIMATE CHANGE 2. COLLABORATIVE DESIGN (e.g. Oslo)	1. BROWNFIELD SITES (e.g. London)	2. RETROFITTING SUBURBS (e.g. England)	1. SUSTAINABLE DEVELOPMENT (e.g. Berlin)								
STUDIOS	(Projects simulations etc based on above)			(Projects simulations etc based on above)			(Projects simulations etc based on above)			(Projects simulations etc based on above)				
"COURSEWORK" (Lectures reading etc):														
A. History and Philosophy	1A History and Philosophy of Human Settlement: The 10,000 Year Story	2A The Classical World: The Philosophy of Civilisation	3A The Modern Era: The Promise of the Enlightenment	4A-1 Processes of Urban Evolution	4A-2 Technology and Humanity	5A Beyond the 20th Century								
"History as a library of useful knowledge. Philosophy and the ethical duty to improve the lives of others."	History and philosophy of settlement including vernacular, rural and village structures	Larger scale urbanism and architecture of Classical, Medieval and Renaissance	Industrialisation and its responses; modernity's promises and challenges	Microphony in urban history; bottom-up and top-down processes	Tools for the management of living environments through history	The sustainability crisis; climate change; responses needed								
B. The Arts and Crafts	1B Prehistoric and vernacular art and crafts	2B Classical and Medieval Arts and Crafts	3B The Modern Response	4B-1 The Culture of Materials	4B-2 Design of Craft and Craft of Design	5B Technology and Crafts								
"Learning the art of craft and the craft of art, through study and practice..."	Anthropology of art; prehistoric art and crafts. Art and crafts around the world.	Greek and Roman art and crafts. Other Classical arts – China, Japan, Americas, Africa.	Origins of modern art and craft. Technology and craft. Modern masters. Postmodernism.	Materials and their expressions within a cultural context	Craft as an essential part of all design; craft as a stepwise articulation	Craftsmanship in new media								
C. Natural Science and Technology	1C Design with Nature	2C Settlement ecology	3C Technology and Ecology	4C-1 Ecological Design	4C-2 The Physics of Structures	5C Complex systems and Sustainability								
"Literacy in the scientific understanding of ecological processes and human technological processes"	Foundational principles of land planning, hydrology, geology, ecology, earth history	Basic principles of human ecology; nutrient cycles, soil ecology, sanitation and health.	Macrology and climate science; effects of technology and ecology; growth and equilibrium	Medicine, ecology, ecosystems principles.	Structural systems, analysis methods, mapping, etc	Networks, complexity systems theory; game theory								
D. Social Science and Technology	1D The Civilisation Game	2D Townscape	3D The Death and Life of Great Cities	4D-1 The Politics of Place	4D-2 Working with Human Beings	5D Sustainable Societies								
"A solid grounding in an evidence-based approach to human needs."	Foundations of sociology and psychology. Overview of settlement processes.	The shape of towns and town processes. The public realm.	Urban processes and their consequences; inductive study; learning from what works	Political, legal and economic structures and their consequences.	Character; social survey methods; diagnostic processes	Social exclusion, economic disparity, affordability, gentrification								
E. Tools and Skills	1E The Structure of Settlements	2E Tools for Settlements	3E Technology of Settlement	4E-1 Sustainable Urban Systems	4E-2 Analytical Tools	5E Advanced Tools								
"An integrated understanding of design tools and their humane use; balance of concrete and abstract methods."	Essential mathematics and geometry; computers; drawing; graphics	Basic engineering; codes; regulations; the Transect	Advanced engineering concepts. GIS. Analytical technologies.	Macroeconomics and sustainable design	Advanced GIS; spatial analysis; Space Syntax; etc	Advanced engineering; coding systems; generative processes.								



Annual Sequence of Study

An important element of the ESUA model is project-based study in a different European country each year. Students will learn to operate within a variety of legal and cultural systems, and gain skills in working to bridge functional incompatibilities. Moreover, they can learn about the local cultures and identities of different countries, and the role they play in economic and cultural vitality. Lastly, they can take advantage of the tangible examples of the subjects of study in each country, with detailed study trips and “learning in place”.

This approach promotes an EU-wide “harmonisation” without “homogenisation”. It emphasizes the local assets of each city and country, while establishing the basis for effective professional practice across borders. It offers students tools to build on Europe’s unique and diverse cultural assets, while gaining the benefit of central resources and advancements.

The actual structure of the annual plan will vary according to the resources available. Nonetheless there is a logical structure that follows a natural progression of complexity and of historical evolution, from the simplest rural settlements to the most complex modern cities. A number of partner countries could serve well for the varying stages of study. Following is only one example of how the sequence might work.

Year 1: Romania. Principles of settlements. Pre-historic settlements. Settlement at the scale of rural and agricultural farms and villages. Ecological settlement infrastructure. Rural and small-town structures.

Year 2: Italy. Classical, Medieval and Renaissance. Settlement at the scale of towns and small cities.

Year 3: England. The modern era, from the early Industrial Age to the present. Urban problems and the reform movements to address them. Settlement at the scale of large cities and regions.

Year 1, Masters programme: Norway. Advanced challenges of ecological design. Rural and town developments. Urban extensions.

Year 2, Masters Programme: Germany. The complexity of modern cities and regions. Major urban infill and brownfield redevelopment. Urban interventions.

Students from the first three semesters of years 4 and 5 will travel to workshops in the three years of the undergraduate programme, and participate in the work with the undergraduate students, and with outside professionals and students. In this way the programme will promote “vertical learning” and peer-to-peer exchanges.

Structure of the Studios: The Exercises

Studio content is carefully coordinated with the content of the workshops, and in turn with the content of the academic courses. The principal structure for coordinating these different elements is the **exercise**. It is a particular design assignment given to students, and closely related to the topics being covered in the other elements. It is modular in format: students will work on similar exercises within the courses, and then, when doing the workshops, they will face the same kinds of challenges in a full, complex project. In that environment they can apply their knowledge and “learn by doing”.

As an example, the second year students will study urbanism and architecture at the town and small city scales. Historically they will study Medieval and Renaissance urbanism and architecture, with a similar focus on scales. They will learn about social and cultural issues at this scale, and in this era of urban development. They will also study the characteristic technical problems of settlements at this scale – topography, site planning, water, nutrient cycles, soils, structural requirements and the like.

FIRST EXERCISE OF THE SEMESTER (Focusing on the essentials of urban structure)

Subject	Exercise
A	<ol style="list-style-type: none">1. Analyze the urban and architectural fabric of a medieval town2. Identify a site for a new settlement (hill town) and its features
B	<ol style="list-style-type: none">1. Analyze the arts and crafts of a particular medieval culture2. Pattern book of motifs etc
C	<ol style="list-style-type: none">1. Analyze land plan and infrastructure of an existing hill town2. Choose and lay out a new hill town
D	<ol style="list-style-type: none">1. Analyze the social relationships of a hill town and the economic exchanges etc2. Propose a social structure (in the D class there could be a text)
E	<ol style="list-style-type: none">1. Measure an existing hill town, with its roads and their geometries; draw it2. Lay out a new hill town with its roads, and calculate its geometries; draw that

SECOND EXERCISE OF THE SEMESTER (Focusing more on architecture)

Subject	Exercise
A	<ol style="list-style-type: none">1. Analyze the same urban and architectural fabric, looking at the buildings in more detail2. Identify a new settlement (hamlet) and its features - with the buildings in more detail
B	<ol style="list-style-type: none">1. Analyze the arts and crafts of a particular culture focusing on the buildings and their details2. Pattern book of motifs etc - advanced focusing on the buildings and their details
C	<ol style="list-style-type: none">1. Analyze land plan and infrastructure of an existing hill town focusing on the buildings, their layout and systems2. Choose and lay out a new hill town focusing on the buildings, their layout and systems
D	<ol style="list-style-type: none">1. Analyze the social relationships of a hill town and the economic exchanges etc focusing on the building scale

- E
2. Propose a social structure focusing on the buildings, their ownership etc
 1. Measure a hill town, with its roads and their geometries; draw it with the buildings in more detail
 2. Lay out a new hill town with its roads, and calculate its geometries; draw that with the buildings in more detail

Yearly Cycle

YEAR ONE (Example Location: Romania)

Scale: Rural and Hamlet Scales

Transect focus: T2-T3

Historical Examples: Pre-Classical and Vernacular Cultures

SEMESTER ONE

Urbanism: Enhancing nature through human intervention.
Rural settlements, farm complexes; "countryscapes"; planning resource infrastructure (water, waste, croplands, etc)

Roads, paths, shared spaces, lanes, alleys
Learning their geometries, learning to code them

Architecture: Farm houses, barns, country houses, manors

WORKSHOP: Planning in a rural context (e.g. the Romania Workshop)

SEMESTER TWO

Urbanism: Urban settlements at a small scale.
Hamlets and small villages; mountain sites; waterfront settlements.

Complex topographies; defensiveness against flooding, storms, geologic instability

Architecture: Communal buildings, markets, churches, monasteries

WORKSHOP: Interventions in a village setting (e.g. a Transylvanian village)

YEAR TWO (Example Location: Italy)

Scale: Villages and Towns

Transect focus: T3-T4

Historical Examples: Classical and Medieval Settlements

SEMESTER ONE

Urbanism: Medieval fabric; sequence of spaces; density; top-down processes (e.g. city wall), bottom-up processes (e.g. house and street form); hill town public spaces

Architecture: Courtyard houses; public to private emphasis; upward verticality; balconies; loggias; shop-houses

WORKSHOP: Cities in Stone

SEMESTER TWO

Urbanism: Renaissance fabric; formal axial structures;

Architecture: Civic buildings; marketplaces;

WORKSHOP: Small-scale Urban Extensions

YEAR THREE (Example Location: England)

Scale: Larger Cities and Regions

Transect focus: T5-T6

Historical Examples: Modern settlements, 1750 to the present

SEMESTER ONE

Urbanism: 19th Century cities and suburbs;

Architecture: Row houses, terrace houses, multi-family, mixed-use

WORKSHOP: Large-Scale Urban Extensions

SEMESTER TWO

Urbanism: Model villages; Garden Cities; New Towns;

Architecture: Infill; mixed use buildings

WORKSHOP: Urban Interventions

YEAR FOUR (Example Location: Norway)

Scale: Overview of all scales, with an emphasis on broad settlement topics

Transect focus: T2-T4

Historical Examples: Pre-history to Classical and Medieval

SEMESTER ONE

Urbanism: Rural settlements, small towns

Architecture: Small town houses, public buildings, urbanism

WORKSHOP: Greenfield, urban extensions (join Year 1 students)

SEMESTER TWO

Urbanism: Larger towns, small cities

Architecture: Larger urban buildings

WORKSHOP: Small-scale urban interventions (join Year 2 students)

YEAR FIVE (Example Location: Germany)

Scale: Overview of all scales, with an emphasis on modern challenges

Transect focus: T4-6

Historical Examples: Modern

SEMESTER ONE

Urbanism: Large cities and regions; major urban interventions; brownfield redevelopments

Architecture: Urban infill; large urban extensions

WORKSHOP: Brownfield, urban extensions (join Year 3 students)

SEMESTER TWO:

Diploma Project

(To be selected by student with approval of advisor)

Graduating Student Standards

Each student graduating from the ESUA program will have the essential educational preparation to become, with appropriate internship, a highly competent architect-urbanist. Such an architect-urbanist will be fully qualified in architectural design and in urban design. He or she will have all of the skills, literacy and comprehension required for professional practice and (after appropriate internship) licensure. He or she will have an essential literacy in all necessary and complementary disciplines of built environment, and an ability to learn additional skills in a changing environment. He or she will be a broadly-educated, “renaissance man or woman” for the built environment. He or she will know how to collaborate and to compete across national boundaries.

Each student graduating from the ESUA 5-year program will be expected to have:

Skills

- Proficiency in drawing and visual communication of ideas – both by hand, and by computer;
- Proficiency in creative problem-solving, meeting programs and producing designs that embody firmness, commodity and beauty;
- Proficiency in research and technical self-education – “learning to learn”;
- Proficiency and literacy in a wide range of historical precedents and solutions;
- Advanced proficiency in listening to clients, customers, users and other stakeholders, and in analyzing and building on local conditions.
- Advanced proficiency in collaboration with craftspeople and other actors within the “culture of building”

Literacies

- Literacy in the “culture of building” – trades, methods, processes;
- Literacy in the terms and concepts of structural engineering;
- Literacy in the terms and concepts of civil engineering;
- Literacy in the terms and concepts of environmental planning;
- Literacy in the terms and concepts of urban economics;
- Literacy in the terms and concepts of political processes;
- Literacy in the terms and concepts of planning and building law;
- Literacy in project methods and tools, including plan documents, codes, and analytical tools.

Comprehensions

- Comprehension of urban history, its patterns and lessons;
- Comprehension of European architectural history, tectonics and styles;
- Comprehension of ecological processes and ecological design principles;
- Comprehension of human environments and human health issues;
- Comprehension of the sociology of public space.

Students at the end of the third year (Bachelor’s) will be expected to have a thorough introduction to these topics, with a fundamental understanding of the principles.

Skill will be assessed through completed projects by the student, including working internships.

Literacy will be assessed through written essays and examinations.

Comprehension will be assessed through written essays and oral discussions.

Entering Student Qualifications

Students entering the ESUA program will be selected for their qualifications in the following areas:

- Demonstrated academic aptitude
- Demonstrated design aptitude
- Demonstrated interest in contemporary environmental design issues
- Demonstrated commitment to improving the human environment

These qualifications will be judged on the following submitted materials:

- Transcripts
- Examination scores (where relevant)
- A portfolio of work
- An essay on their interest in the programme and why they would be a good fit

COURSE OUTLINES

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 1 - History and Philosophy (1A)

History and Philosophy of Human Settlement:
The 10,000 Year Story

COURSE MISSION STATEMENT:

Students will gain an overview of the history and philosophy of settlement around the world; learn about the varied complexity of urban morphology; and learn to see the mix of top-down (planned) and bottom-up (emergent) urban patterns. They will gain a basic grasp of the essential natural and cultural forces that generate and shape settlement form over time, including the importance of local forms of habitat, and the growth of regional vernacular forms.

COURSE DESCRIPTION:

Humans have existed in nomadic hunter-gatherer societies for many thousands of years. But settlement in fixed locations, relying upon agriculture and animal husbandry, is comparatively new: only about 10,000 years old. This relatively short period spans the entire history of cities and nations as we know them.

We will gain a broad overview of this history and its major eras, examining its benefits and drawbacks, as well as its ethical implications. We will examine the physical evolution of civilisations in parallel with their philosophical traditions and cultural worldviews.

We will pay particular attention to the developing forms of settlement – the morphology of urbanism – throughout history, and the impact of terrain, flora, fauna, climate, and other factors, including historical events and cultural influences. We will consider the ways in which forms imposed from above – “top-down” forms – often mix with forms generated “bottom-up”, from the combined actions of smaller groups and individuals.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Tours of vernacular settlements and archaeological sites.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

- Ching, Francis D.K. Jarzombek, Mark M. and Prakash Vikramaditya (1990). A Global History of Architecture. Wiley.
- Diamond, Jared (2002). Guns, Germs and Steel: The Fates of Human Societies. Harper.
- Diamond, Jared (1992) The Third Chimpanzee: The Evolution and Future of the Human Animal. Harper.
- Kostof, Spiro (1993) The City Shaped: Urban Patterns and Meanings Through History. Bullfinch.
- Kostof, Spiro (1993) The City Assembled: The Elements of Urban Form in History. Thames and Hudson.
- Mumford, Lewis (1968). The City in History: Its Origins, Its Transformations, and Its Prospects. Harvest Books.
- Oliver, Paul (2003) Dwellings: The Vernacular House Worldwide. Phaidon.
- Rapoport, Amos (1969). House Form and Culture. Prentice Hall.

(Additional reading list items to follow.)

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 2, History and Philosophy (2A)

The Classical Era:
The Philosophy of Civilisation

COURSE MISSION STATEMENT:

The course covers the rise of great civilizations and empires, their cultures, philosophies, architecture and urbanism. We will ask the question, what is “Classical civilization?” How is it different from pre-Classical and vernacular cultures? And we will begin to ask the question, how is it different from modernity?

COURSE DESCRIPTION:

Students will learn about Classical civilizations, their philosophies and their architecture and urban settlement, including Babylonian, Egyptian, Greek, Roman, Indian, Chinese and Pre-Columbian American cultures, through the Medieval and Renaissance periods. They will explore the relation of culture, philosophy, place, and architecture. They will consider the rise of timeless philosophical questions: where did we come from? What is suffering, and how must it be addressed? What is the status of government, and the relation to other segments of society? What is justice, and how can it be achieved through politics and through ethical action? How does the form of our environment embody our culture and our philosophy? And what is the status of timeless ideals -- and can they be revived, as the architects of the Renaissance believed?

COURSE FORMAT:

Lecture, Seminar. Guest speakers.
Tours of significant examples of Classical architecture and urbanism.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Plato (ca. 375 B.C.) *The Republic*
Aristotle (ca. 350 B.C.) *Politics*.
Various (ca. 400 BC) *Bhagavad Gita*.
Confucius (ca. 500 BC). *Analects*.
Vitruvius (ca 30 B.C.) *The Ten Books on Architecture*.
Palladio, Andrea (1570). *The Four Books of Architecture*.
Pevsner, Nikolaus (1964). *A History of Western Architecture*.
Norberg-Schulz, Christian (1963). *Intentions in Architecture*.
Pevsner, Nikolaus (1976). *A History of Building Types*.

Pevsner, Nikolaus (1943). *An Outline of European Architecture*.

Mumford, Lewis (1968). *The City in History: Its Origins, Its Transformations, and Its Prospects*.

Kostof, Spiro (1991). *The City Shaped: Urban Patterns and Meanings through History*.

Kostof, Spiro (1992). *The City Assembled: The Elements of Urban Form through History*.

(Additional reading list items to follow.)

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 3, History and Philosophy (3A)

The Modern Era:
The Promise of the Enlightenment

COURSE MISSION STATEMENT:

Students will learn about the historic forces that have shaped the modern built environment, and the movements to exploit or to reform the trends that have evolved in response. We will focus on the philosophy of the Enlightenment, its realisation, its shortcomings, and its re-assessments in the post-modern era. We will ask what is the appropriate relationship between innovation and traditional revival in our contemporary response to the built environment.

COURSE DESCRIPTION:

The course will cover the history of the period from the end of the Renaissance and the dawn of the industrial age to the present day. We will examine the historic forces that have shaped the modern built environment, including industrialisation, technology, political and cultural change, and the architectural and urban movements that have come in response. In particular, they will examine the changes to urban structure and urban integration over this period, and the reform movements that seek to re-integrate fragmented urban environments. The course will also cover the philosophical developments in the same period, from the seeds of the Enlightenment to the development of post-structuralism.

COURSE FORMAT:

Lecture, Seminar. Guest speakers. Video presentations.
Tours of significant examples of industrial-era urban history, including model villages, garden cities, new towns, urban extensions.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Jacobs, Jane (1961). *The Death and Life of Great American Cities*.
Alexander, Christopher (1965). "A City is Not a Tree."
Gropius, Walter (1932). *The Scope of Total Architecture*.
Banham, Reyner (1960). *Theory and Design in the First Machine Age*.
Le Corbusier (1924), *Towards a New Architecture*.
Pevsner, Niklaus (1948). *Pioneers of Modern Design*.
Pevsner, Nikolaus (1943). *An Outline of European Architecture*.
Pevsner, Nikolaus (1949). *Pioneers of Modern Design*.
Ruskin, John (1871). *The Seven Lamps of Architecture*.
Morris, William (1881). *The Prospects of Architecture in Civilization*.

Sitte, Camillo (1889). *City Planning According to Artistic Principles*.
Unwin, Raymond (1909). *Town Planning in Practice: An Introduction to the Art of Designing Cities*.
Howard, Ebenezer (1898). *To-morrow: A Peaceful Path to Real Reform*.
Le Corbusier (1924). *Towards a New Architecture*.
Gropius, Walter (1936). *The Scope of Total Architecture*.
Giedion, Sigfried (1941). *Space, Time and Architecture*.
Mumford, Lewis (1968). *The City in History: Its Origins, Its Transformations, and Its Prospects*.
Banham, Reyner (1960). *Theory and Design in the First Machine Age*.
Lynch, Kevin (1960). *The Image of the City*.

(Additional reading list items to follow.)

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 4 - History and Philosophy (4A-1)

Processes of Urban Evolution:
The Forms of Growth

COURSE MISSION STATEMENT:

The course will examine the processes of urban evolution, with a focus on the growth of urban forms in the early industrial age (1750-1900). The course will examine the history of industrial cities and the reform movements that arose to address their shortcomings. The course will cover advanced theories of urban morphology and analytical techniques for its study.

COURSE DESCRIPTION:

How have the structures of modern cities evolved in response to industrialisation? How have planners and architects sought to change this evolution through planning reforms and interventions? And what do we understand about these interventions and their results?

We will look at the role of emergent, “bottom-up” processes through history, and the “top-down” efforts to intercede. We will learn about advanced tools for analysis of urban and architectural morphology, and the insights they give us about the relation of urban morphology to economic, ecological and social systems.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Tours of urban examples (model villages, garden cities, urban extensions, urban infill).
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Batty, Michael (2005) *Cities and Complexity*
Batty, Michael (2007) *Understanding Cities with Cellular Automata, Agent-Based Models, and Fractals*
Kostof, Spiro (1993) *The City Shaped: Urban Patterns and Meanings Through History*.
Bullfinch.
Kostof, Spiro (1993) *The City Assembled: The Elements of Urban Form in History*.
Thames and Hudson.

Mumford, Lewis (1968). *The City in History: Its Origins, Its Transformations, and Its Prospects*. Harvest Books.

Mumford, Lewis (1968). *The City in History: Its Origins, Its Transformations, and Its Prospects*.

Alexander, Christopher (1977). *A Pattern Language*.

Alexander, Christopher (2003). *The Nature of Order*. Books 1-IV.

(Additional reading list items to follow.)

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 4 - History and Philosophy (4A-2)

Technology and Humanity:
New Tools for New Urban Challenges

COURSE MISSION STATEMENT:

The course will examine the role of technology in shaping modern built environments, and the ways that technology can create unanticipated consequences, including urban fragmentation, ecological degradation and social isolation. Students will learn about a number of new technologies that place a greater priority on successful adaptation to human needs.

COURSE DESCRIPTION:

Technology has always been at the core of human settlement, whether in the agricultural techniques of early societies, or in the modern systems of energy and transport. In every case, technology has carried side effects that are not its intended goals: the erosion of farmlands, the fragmentation of cities, and much more.

How can technologies be made to adapt more closely to human needs? How can they be more self-correcting and more sustainable, following the principles of living systems? How, in essence, can human technologies be made more like the technologies of life?

We will examine a range of conditions and technological processes, and their strategies for becoming more adaptive and more responsive to human needs. We will look at social process tools such as workshops, charrettes, consensus methodologies, and other innovations. We will look at ecological tools and processes, including new approaches to “light imprint” development and the like.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Tours to new projects, case studies.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Ellul, Jacques (1967) *The Technological Society*.

Whyte, William H. (1975). *The Social Life of Small Urban Spaces*.
Lennertz, Bill (2006) *The Charrette Handbook*
Condon, Patrick (2007) *Design Charrettes for Sustainable Communities*
Jacobs, Jane (1961). *The Death and Life of Great American Cities*.
Jacobs, Jane (1985). *The Economy of Cities*.
Jacobs, Jane (2005). *Dark Age Ahead*.

(Additional reading list items to follow.)

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 5 - History and Philosophy (5A)

Beyond the 20th Century:
Toward a Useful Science of the Urban Future

COURSE MISSION STATEMENT:

Students will examine the most recent historical trends in architecture and urban design, and a range of points of view on what lies ahead and what we must do to prepare. They will learn about the latest innovations in technology, and the latest developments in theory.

COURSE DESCRIPTION:

In this last course of the series, we will examine the future of urban settlement, and the roles that students might be expected to play. How can we tell what are the likely trends, and what is more likely to be in the realm of fantasy or product marketing? What does the science actually tell us? How can we come to terms with the inherent uncertainty of future events, and safeguard our urban security and quality of life?

We will examine the latest scientific work on the current state of the world's ecological and cultural systems. We will examine the latest innovations in policy and technology, and what they may hold for the future. We will consider philosophical theories about the predicament of modern humans, and what we can do – or not do - to respond to our current challenges. Finally, we will look back over the history of settlement, and draw lessons for the timeless aspects of our challenges, and the ways we can draw on many of the same processes that were most successful in the past: the ability to self-organise, to find emergent solutions, to grow and to heal.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Wilson, Edward O. (2002), *The Future of Life*.
Wiener, Jonathan (1990). *The Next 100 Years*.
State of the World (2008). Worldwatch Institute.
Jacobs, Jane (2003). *Dark Age Ahead*.

Brockman, John (ed.) What Are You Optimistic About?

Diamond, Jared (1997). The Third Chimpanzee: The Evolution and Future of the Human Animal.

Diamond, Jared (2001). Guns, Germs and Steel: The Fates of Societies.

(Additional reading list items to follow.)

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 1 – The Arts and Crafts (1B)

Prehistoric and Vernacular Arts and Crafts:
The Anthropology of Art and Architecture

COURSE MISSION STATEMENT:

Students will learn the essential principles of the anthropology of art. They will become acquainted with fine examples of prehistoric art and crafts, and art and crafts around the world. They will examine the fundamental characteristics of art and craft, as essential elements of the many varied cultures around the world.

COURSE DESCRIPTION:

Why do human beings make art? What is the role of craft in the making of the human world? What does art say about a culture's view of itself and its world? And what unites the many varied expressions of art and craft around the world?

We will survey a broad range of prehistoric and vernacular art and craft around the world, and consider what makes it both unique and universal. We will look at the techniques and the media of art and craft, including drawing, painting, sculpture, household furniture and goods, architecture, and other arts.

We will also examine the arts and crafts of the pre-Hellenic civilizations. What made these new "classical" forms different from vernacular arts and crafts? What was the role of specialization and stored wealth? How did the role of artists, craftspeople and architects change within the culture?

We will also look at elementary principles of drawing and painting, and their evolution through the beginning of Greek civilisation.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Norberg-Schulz, Christian (1963). Intentions in Architecture.

Pevsner, Nikolaus (1976). A History of Building Types.
Oliver, Paul (1987). Dwellings: The House across the World.
Rudofsky, Bernard (1964). Architecture Without Architects.

(Additional reading list items to follow.)

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 2 – The Arts and Crafts (2B)

Classical and Medieval Arts and Crafts:
The Ancient and The Universal

COURSE MISSION STATEMENT:

Students will gain a thorough acquaintance with the history and features of Greek and Roman art and crafts. They will also compare other Classical arts and crafts, including those of Classical China, Japan, the Americas and Africa. Students will also study the history and features of medieval arts and crafts. Lastly, students will see how these Classical forms have re-emerged in a series of revivals, from the Renaissance to the Arts and Crafts movement to the present day.

COURSE DESCRIPTION:

We will study the Classical arts and crafts in detail, beginning with Greece and Rome, but expanded to include the great Classical traditions of Asia, Africa and the Americas. What are the characteristics of Classicism? What, if any, are the deep universal characteristics of Classical order? Are there timeless standards of proportion or composition that they share in common?

We will also study the history and features of medieval arts and crafts, including Gothic traditions. We will note that for all their differences, many of these traditions developed in part from Classical roots: Romanesque, Byzantine, Gothic and more.

Lastly we will see how Classical and Medieval expressions have been revived many times, with the rich period of the Renaissance as only the best-known example. We will examine the birth of the Arts and Crafts movement, with its revival of Classical and Medieval traditions from around the world.

Students will also study the techniques and materials of arts and crafts, including drawing, painting, sculpture, architecture, stained glass, timberwork and much more.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Tours of museum collections and Classical sites
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Pevsner, Niklaus. A History of Western Architecture.

Pevsner, Nikolaus (1943). An Outline of European Architecture.

Pevsner, Nikolaus (1976). A History of Building Types.

Porphyrios, Demetri (1982). Classicism is not a Style.

Kostof, Spiro (1991). The City Shaped: Urban Patterns and Meanings through History.

(Additional reading list items to follow.)

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 3 – The Arts and Crafts (3B)

The Modern Response:
The Art and Technology of Liberation

COURSE MISSION STATEMENT:

Students will study the origins of modern art and craft. They will examine the intimate relationship between technology and craft, and the result of this union. They will study the work of modern masters, from the Arts and Crafts to the modernists to the era of postmodernism and post-structuralism.

COURSE DESCRIPTION:

How is the modern world different from the world before it, and what does that mean for the differences we can expect in art? How has technology changed the world and the world-view of artists? How has the progression of political thought shaped and been shaped by art?

We will study the painting, sculpture and architecture of the modern period, beginning with the Arts and Crafts pioneers and proceeding to the early modernist era. We will conclude with an examination of postmodernist theory and work, and look for the seeds of continued evolution in the world of art and craft. As technology changes, what other changes can we anticipate in the development of art and craft?

We will also examine the changing media of art, craft and architecture, including the effects of new materials and technologies. We will pay particular attention to the effect of computer technology, and the growth of new possibilities in this new medium.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.

Tours of museums and noted projects.

Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Pevsner, Niklaus. *Pioneers of Modern Design*.

Gropius, Walter. *The Scope of Total Architecture*.

Le Corbusier, Towards a New Architecture.
Hughes, Robert. The Shock of The New

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 4 – The Arts and Crafts (4B-1)

The Culture of Materials:
Aesthetics, Function, Ecology

COURSE MISSION STATEMENT:

Students will learn about the potential uses of a wide variety of materials in art, craft and architecture, and their expressions within a variety of cultural contexts. They will learn about the disciplines developed around the use of materials in a range of arts and crafts.

COURSE DESCRIPTION:

What is the nature of the discipline that materials impose upon artists, craftspeople and architects?

We will examine materials in a variety of cultural contexts, and the way they are applied and expressed. We will consider the qualities that materials offer – aesthetic, functional, economic, ecological. We will learn about how materials have been used in history, and how they can be used in modern contexts.

We will consider masonry, wood, glass, metals and other materials. We will consider the impact of declining fossil fuels and embodied energy on materials, and the alternatives for more sustainable materials and construction systems.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.

Study trips to projects where materials are being applied.

Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Davis, Howard (2002). *The Culture of Building*.

Palladio, Andrea (1570). *The Four Books of Architecture*.

Pevsner, Nikolaus (1943). *An Outline of European Architecture*.

Pevsner, Nikolaus (1949). *Pioneers of Modern Design*.

Ruskin, John (1871). *The Seven Lamps of Architecture*.

Morris, William (1881). *The Prospects of Architecture in Civilization*.
Norberg-Schulz, Christian (1963). *Intentions in Architecture*.

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 4 – The Arts and Crafts (4B-2)

The Design of Craft and the Craft of Design:
The Step-Wise Transformation of Form

COURSE MISSION STATEMENT:

Students will learn about craft in history, and aspects of craft that continue in modern design. It will be seen that craft-like technique is an essential part of all design. Students will study examples through history of craft as a stepwise process of articulation that has its counterpart in sustainable natural systems.

COURSE DESCRIPTION:

It is often assumed that modern technologies do not have room for craft, which is too slow and individual to be economically viable. But in fact, many modern designs are crafted individually before they are manufactured in mass quantities. Many more modern designs are crafted through the manufacturing process, through new customization and “one-off” technologies.

It is now more clearly understood that a craft-like process is an important requirement for the fitting of parts into complex and successful environments. Far from being an impractical process of the past, craft is a vital aspect of all modern design and building.

We will study crafts throughout history, and understand how crafts processes work within art and architecture. We will examine the role of craft in our own work, and ways that it can improve its quality. We will examine the work of contemporary craftspeople, and gain a basic literacy in their techniques and methods.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Tours of crafts work; hands-on experience with crafts practices and techniques.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST

Pevsner, Nikolaus (1943). *An Outline of European Architecture*.
Pevsner, Nikolaus (1949). *Pioneers of Modern Design*.

Ruskin, John (1871). *The Seven Lamps of Architecture*.
Morris, William (1881). *The Prospects of Architecture in Civilization*.
Gropius, Walter (1936). *The Scope of Total Architecture*.
Giedion, Sigfried (1941). *Space, Time and Architecture*.
Norberg-Schulz, Christian (1963). *Intentions in Architecture*.

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 5 – The Arts and Crafts (5B)

Technology and Craft:
The Tools of Growth

COURSE MISSION STATEMENT:

Students will learn about the capacity for craftsmanship in new media, including computers, virtual-reality systems, generative design systems, surveying systems, LIDAR and the like. Students will also study the relation of craft to technology throughout history.

COURSE DESCRIPTION:

What opportunities do new technologies offer for greater craftsmanship in the design and building of settlements today? What about new computer-based systems – CAD, 3-d modeling, GIS, surveying methods and the like?

We will examine the relation of crafts to technology throughout history, up to the present day and into the future. We will ask what are the future opportunities for higher levels of craftsmanship using new media, and new abilities to achieve higher level of adaptivity and customization using new tools. We will examine the very definition of technology as it increases its ability to adapt and differentiate in context. We will examine the transition from the rigid, template-based methods of the early twentieth century to a new era of adaptive, morphogenetic methods, combining the latest technological capability with age-old processes of craft.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Site-based demonstrations and exercises.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 1 – Natural Science and Technology (1C)

Design with Nature:
Essentials of Land Planning

COURSE MISSION STATEMENT:

Students will gain a working knowledge of foundational principles of land planning, ecology, hydrology, geology and earth history. We will also gain an elementary understanding of the physics of structures. As a point of introduction, the class will have a particular focus on rural and small town settlement conditions.

COURSE DESCRIPTION:

Human settlements inevitably have a major impact on the natural ecosystems around them. The challenge is not so much to seek to minimize that impact – though that is generally desirable – but rather, to build settlements in such a way that they adapt to and integrate with the stable and sustained cycles of larger ecosystems. In that sense, we must learn to treat human settlements as a kind of ecosystem in their own right, and a subsidiary of the larger ecosystems on which we depend. They must be designed to have the stable properties of ecosystems in equilibrium.

This requires a shift in our thinking about ecosystems, and about how human systems must integrate within them. Consumption cycles, waste streams, resource extraction, all must be conceived within the parameters of continuous cycles. We will cover the fundamentals of the science behind this issue, such that students will be prepared to collaborate with ecologists, biologists and others in the field. We will examine a number of promising methodologies of ecological design, and gain an essential working understanding of this rapidly-progressing field.

We will also cover the elementary physics of structures, providing a minimal working knowledge of physical principles as students progress through the course.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Tours of ecologies and ecological settlements.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

McHarg, Ian, Design With Nature

Van Der Ryn, Sim and Cowan, Stuart, Ecological Design

Lynch, Kevin. Image of the City.

To be continued...

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 2 – Natural Science and Technology (2C)

Principles of Settlement Ecology:
Humans in the Ecosystem

COURSE MISSION STATEMENT:

Students will gain a more detailed working knowledge of the principles of human ecology; nutrient cycles, soil ecology, sanitation and health, as well as continued development of literacy in basic physical principles. The class will have a particular focus on the problems of mid-size cities, and the historic challenges of growing cities in dealing with sanitation, epidemiology, waste streams, nutrient cycles and other issues of human health.

COURSE DESCRIPTION:

Cities are not self-contained units, but have an intimate relationship with their hinterlands and waters – areas that have been referred to as their “ecological footprint”. That relationship may be stable and healthy over time, or it may be jeopardized by chronic problems: soil depletion, habitat destruction, toxic accumulations, waste accumulations, and the spread of pathogens. Cities too have their own urban ecosystems, which can function in a healthy state for their populations, or create serious threats to human health: epidemics, toxins, overcrowding, and other stressful psychological effects.

We will examine a number of case studies from around the world of cities that suffered serious problems, and cities that triumphed over their ecological challenges. We will examine some of the latest scientific literature about human health and urban ecosystems, and techniques that seem most effective in improving the health of cities and their environs. We will review the most promising tools available, and follow the work of epidemiologists, ecologists, environmental psychologists and others.

We will also continue to develop our literacy in basic physical and structural principles.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Tours of vernacular settlements and archaeological sites.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Lynch, Kevin (1960). *The Image of the City*.

Alexander, Christopher (1977). *A Pattern Language*.

Alexander, Christopher (2003). *The Nature of Order*. Books 1-IV.

Kostof, Spiro (1991). *The City Shaped: Urban Patterns and Meanings through History*.

Kostof, Spiro (1992). *The City Assembled: The Elements of Urban Form through History*.

Diamond, Jared (1997). *The Third Chimpanzee: The Evolution and Future of the Human Animal*.

Diamond, Jared (2001). *Guns, Germs and Steel: The Fates of Societies*.

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 3 – Natural Science and Technology (3C)

Technology and Ecology:
The Value and Limits of Engineering

COURSE MISSION STATEMENT:

Students will gain an overview of the complex and sometimes unintended effects of technology on ecology. Using computer-based analytical tools, we will examine the principles of mechanics and industrial technology, as well as the complex workings of meteorology and climate science. We will examine the dynamic processes of growth and equilibrium in ecosystems, and the ways that building systems can exploit these. Our studies will have a particular focus on the regional and global scales.

COURSE DESCRIPTION:

In the early years of the twentieth century, it seemed that humanity had very nearly conquered nature: disease, poverty, irrationality itself seemed on the verge of final conquest. By the early years of the twenty-first century, we were painfully aware of the limitations of our technologies, and their capacity to produce “unintended consequences”: pollution, depletion, ecological degradation, and chaotic, unintended effects like climate change.

In this course we will examine this history and its lessons for our work. We will learn about the sciences of complex phenomena such as meteorology and climate change. We will learn about how ecological systems use adaptive processes to achieve equilibrium, to clean toxins and to correct imbalances. We will learn about advanced new technologies and analytical systems, and new approaches to ecological urbanism.

We will also develop our literacy in building and urban engineering technology, including regional transportation, sanitation, water and power systems.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.

Tours of ecological projects.

Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Diamond, Jared. Collapse.
Ellul, Jacques. The Technological Society.
Ellul, Jacques, Meaning of the City.
Lynch, Kevin (1960). The Image of the City.
Jacobs, Jane (1961). The Death and Life of Great American Cities.
Diamond, Jared (1997). The Third Chimpanzee: The Evolution and Future of the Human Animal.
Diamond, Jared (2001). Guns, Germs and Steel: The Fates of Societies.

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 4 – Natural Science and Technology (4C-1)

Advanced Principles of Ecological Design:
Integrating Natural and Biological Processes

COURSE MISSION STATEMENT:

Students will gain a detailed knowledge of ecology and ecosystems principles as they apply to settlements. Students will learn to analyze and work with biological systems, with a particular focus on human health and medicine. At the same time, students will gain a thorough grounding in the methods of natural science.

COURSE DESCRIPTION:

What must professionals in architecture and urbanism know about the methods and principles of modern ecological design? In this course we will cover the advanced principles of ecology, and methods of the integration of human settlement systems within stable natural ecosystems. The course will cover biological processes, hydrology, nutrient cycles, sanitation, epidemiology and medicine. We will study advanced techniques of urban agriculture and forestry, and new systems of building and urbanism that incorporate ecological systems. We will look at advanced systems of water quality, materials and recycling.

We will also study the methods of natural science and the techniques of quantitative and qualitative analysis.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Tours of vernacular settlements and archaeological sites.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Van Der Ryn, Sim and Cowan, Stuart, Ecological Design.
McHarg, Ian. Design with Nature.

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 4 – Natural Science and Technology (4C-2)

The Physics of Structures:
Statics, Dynamics and Analytics

COURSE MISSION STATEMENT:

Students will gain an overview of structural systems, analytical methods, mapping and structural modeling. Students will learn to calculate static and dynamic forces and structures at a competent professional level.

COURSE DESCRIPTION:

Architects and urbanists must have a working knowledge of the physics of structures, and the ability to properly design and size a variety of structural and mechanical elements. They must also be literate in the techniques of analysis, mapping and modeling. In this course we will cover the essential knowledge and techniques for the proper structural and mechanical calculations of buildings and civil structures. We will also ensure that students have a thorough competence and literacy in the mathematics of structures, and the use of computer-based tools. We will pay particular attention to the proper calculations of ecological materials and systems.

Specific techniques will include structural analysis; calculation and sizing; overview of mapping techniques; familiarity with GIS systems; familiarity with LIDAR and elementary surveying principles.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Simple construction exercises. Tours of construction projects.
Assigned Reading, Written paper.

READING LIST:

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 5 – Natural Science and Technology (5C)

Complex Systems and Sustainability:
Learning to Manage Complexity

COURSE MISSION STATEMENT:

Students will gain an overview of complex systems; network structures; systems theory; and game theory. They will learn to apply these insights to the complex challenges of modern project management and collaboration, and the particular problems of sustainable settlements.

COURSE DESCRIPTION:

How can professionals manage the exceedingly complex conditions in which modern projects occur? What are the “new sciences of complexity” telling us about the strategies we can employ to get better, more successful, more robust outcomes in our design and project management? We will learn to apply these insights to complex phenomena like climate change, resource depletion and habitat destruction. We will examine how design professionals can collaborate with other members of civilization to produce more robust, more successful forms of settlement. We will study the lessons of complex systems, game theory and mathematics, and learn to apply them to our work.

In addition, we will examine the role of historical resources in modern sustainable systems. We will learn to work with evolutionary patterns within urban areas, and apply them to our modern challenges.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Jacobs, Jane. *The Death and Life of Great American Cities*.
Van Der Ryn, Sim and Cowan, Stuart (1998). *Ecological Design*.
Goodwin, Brian (2002). *How the Leopard Changed its Spots*.
Waldrop, M. Mitchell, *Complexity*.

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 1 – Social Science and Technology (1D)

The Civilisation Game:
Models of Anthropology, Sociology and Urbanism

COURSE MISSION STATEMENT:

Students will gain an overview of the foundations of anthropology, sociology and psychology, and the ways that they affect and are affected by the processes of settlement. Students will learn to model the processes of civilization, and simulate the different roles that interact within the settlement process. We will have a special emphasis on the early historical evolution of civilizations, and the more elementary processes of rural and small city settlements.

COURSE DESCRIPTION:

How do human beings collaborate to create settlements? What are the social processes in their formation and growth? In the end, why do we build settlements and civilizations at all?

We will examine the structure of settlements from the disciplines of social science, and learn their fundamental principles of organization and growth. We will examine the role of built environments in human psychology and sociology. We will gain a thorough literacy in cultural anthropology and its methods.

As a central exercise of the class, we will “game” the processes of settlement, using a role-playing simulation known as “The Civilisation Game”. Students will take on different roles within a civilisation, and collaborate to develop urban structures over a variety of simulations.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Role-playing simulation game.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Civilisation: A Personal View (1969) Kenneth Clark.
The Day the Universe Changed (1985). James Burke.

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 2 – Social Science and Technology (2D)

Townscape:
The Spatial Systems of Urbanism

COURSE MISSION STATEMENT:

Students will gain an overview of the shape of towns, and the town-making processes that give rise to them. Students will pay particular attention to the formation of the public realm, and the coherent public spatial system that one may call “townscape”. Students will learn to read townscapes as spatial systems, as aesthetic systems, and above all, as connective social systems. We will consider the ways that townscapes can be designed, and at the same time, the ways that they can change and grow over time, aided by wise design strategies.

COURSE DESCRIPTION:

“There are advantages to be gained from the gathering together of people to form a town.” So wrote Gordon Cullen in the introduction to his classic 1961 book *Townscape*. Cullen was particularly concerned with the coherence of visual experiences in the public realm; but parallel to that, and closely related to it, is a social structure, which may contain varying levels of connective or isolating characteristics. We will examine these parallel structures, and theories that relate them, such as those by Christopher Alexander, Bill Hillier and others. We will consider Cullen’s emphasis on serial vision and sequences of experience, as opposed to the notion of a single visual composition.

Finally, we will use the methods of social science to investigate parts of a townscape, to understand how well they are working, and to learn to tease out the factors that contribute to their success or failure as social spaces.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Walking tours of towns, analytical sketching of plans and perspectives.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Cullen, Gordon (1961). *Townscape*.
Kostof, Spiro. *The City Shaped*.
Kostof, Spiro. *The City Assembled*.
Alexander, Christopher (1977). *A Pattern Language: Towns, Buildings, Construction*.

Hillier, Bill (19xx). *Space is the Machine*.
Jacobs, Jane (1961). *The Death and Life of Great American Cities*.
Salingaros, Nikos (2007). *Principles of Urban Structure*.

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 3 – Social Science and Technology (3D)

The Death and Life of Great Cities:
Understanding the Kind of Problem a City Is

COURSE MISSION STATEMENT:

Students will gain an overview of complex urban processes and their consequences over time: inception, growth, maturity, decay, destruction, transformation. Students will learn the benefits of inductive study, and effective methods to observe and to learn from what works. Students will gain a thorough literacy in the methods of social science as they are applied to large cities. Finally, students will learn to apply these insights into redevelopment projects of varying scales within existing cities.

COURSE DESCRIPTION:

What skills and habits of thinking must professionals have to understand what Jane Jacobs called “the kind of problem a city is?” How can we understand the problems of areas of the city that are not working well, or those that are working well and can be enhanced? How can we accommodate technologies that might be disrupting the social fabric of the city, such as traffic and transport systems?

We will learn to apply the methods of social science to the complex problems of modern cities, and the opportunities for designed interventions. We will see how these interventions can serve as catalysts for larger growth within the city. But we will recognise the necessity of starting with what exists, and developing a careful scientific understanding of its inherent properties.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Tours of urban redevelopments and interventions.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Jacobs, Jane (1961). *The Death and Life of Great American Cities*.
Alexander, Christopher (19782). *A New Theory of Urban Design*.
Gehl, Jan. *Life Between Buildings*.

Hillier, Bill (1995). *Space is the Machine*.
Salingaros, Nikos (2007). *Principles of Urban Structure*.
Whyte, William H. *The Social Life of Small Urban Spaces*.

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 4 – Social Science and Technology (4D-1)

The Politics of Place:
Public Process, Law and Regulation in Development

COURSE MISSION STATEMENT:

Students will gain an overview of political, legal and economic structures and their roles within the urban development process. They will understand the historical development of codes, zoning regulations, public planning processes, economic principles of development, and methods of financing and project management in a political context.

COURSE DESCRIPTION:

What must professionals in urbanism and architecture understand about the political context of modern design and development? In a complex, varied and rapidly-changing political environment, what processes must they be prepared to understand and manage, in collaboration with others? In what other disciplines must they have a working literacy?

We will look at political, legal and economic processes as they affect design and development. We will become acquainted with the fundamental principles of law and public process, and the essential concepts of political science. We will examine the elementary principles of finance and management in development, and the issues that design professionals increasingly must learn to manage in collaboration with others.

In particular we will look at the regulatory structures that emerge from political and legal processes: the codes, plans, zoning, and requirements for public participation and opportunities for challenge and appeal. A successful project must be managed through all these complex processes, not only to avoid undue constraints on the success of the design, but also to identify and to develop the opportunities that such processes may offer.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Tours of contemporary development projects.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Kimmis, Daniel, *Community and The Politics of Place*.

Barber, Benjamin (1998), *A Place for Us*

Talen, Emily (2005). *New Urbanism and American Planning: the Conflict of Cultures*.

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 4 – Social Science and Technology (4D-2)

Working with Human Beings:
Psychology, Sociology and Participatory Design

COURSE MISSION STATEMENT:

Students will gain an overview of social survey methods and diagnostic processes; charrettes and collaborative design processes; and other methods of social science applied to design. Students will gain insights into the skills needed for effective leadership and facilitation in a complex project environment.

COURSE DESCRIPTION:

Since it is human beings and their needs that design professionals must serve, every good design project must begin with real human beings at the centre of attention. What skills does this demand of us? Increasingly, design processes must adopt formal methods of involvement of the stakeholders of a project. In addition, projects are increasingly complex and collaborative, and demand effective skills for collaboration and leadership.

We will learn about effective tools for collaborative design processes, including the charrette, the “Enquiry by Design” and others. We will learn about demographic research, post-occupancy surveys, diagnostic methods, and other social survey methods. We will gain experience in facilitation and leadership, and study the techniques used to effectively manage a project team – with an emphasis on teams that include a diverse range of individuals with a diverse set of capabilities and levels of expertise. We will continue to develop our literacy in the political, legal and economic processes that form the context of modern development.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.
Participation in workshops and charrettes, with a focus on social research.
Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Condon, Patrick (2006). *Design Charrettes for Sustainable Communities*.
Lennertz, Bill (2005). *The Charrette Handbook*.
Scott, James C. (1995) *Seeing Like a State*.

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 5 – Social Science and Technology (5D)

Sustainable Societies:
Ecology, Economy and Culture

COURSE MISSION STATEMENT:

Students will gain an overview of the social aspects of sustainability, and tools to manage challenges such as social exclusion, economic disparity, affordability, and gentrification. We will have a particular focus on the changing socio-economic environment of modern development, and the ability of social systems to develop resilience and inherent capacity to adapt to changing conditions.

COURSE DESCRIPTION:

The world is changing fast, and the assumptions of social planning that operated over the last century must be re-assessed if we are to achieve healthy, stable and sustainable societies. Increasingly, we must recognize that social sustainability is a major factor in economic sustainability, and in ecological sustainability too.

In particular, we must question assumptions about economic trends, which may change rapidly as energy markets and other conditions change rapidly. Planning practices that depend on particular technologies may rapidly become obsolete, stranding whole populations in unsustainable living arrangements. It is increasingly important to plan for greater resilience and inherent capacity -- for the ability of the residents of a neighborhood to adapt to a wide variety of conditions and changing opportunities.

At the same time, long-term problems must also be met with effective new solutions: involuntary social and physical isolation, lack of affordability, gentrification, and extremes of segregation by race, ethnicity, religion and income.

We will examine the latest tools and analytical techniques to meet these challenges, and follow case studies to see their results. We will develop a working knowledge of these approaches and their potential application to our work. We will develop a literacy in the terminology of social scientists and agencies, to prepare for effective collaboration on these complex and challenging issues.

COURSE FORMAT:

Lecture, Seminar. Guest speakers, video presentations.

Participation in sustainable development projects, with an emphasis on social sustainability.

Assigned Reading, Independent Reading and Research, Written Essay and Exam.

READING LIST:

Jacobs, Jane. *The Economy of Cities*.

Jacobs, Jane. *The Nature of Economies*.

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 1, Tools and Skills (1E)

The Structure of Settlements:

Essential Skills in Physics, Mathematics and Computer Science

COURSE MISSION STATEMENT:

The course will teach the essential techniques of mathematics, physics and descriptive geometry as they are applicable to the fields of architecture and urban design. Students will gain essential skills in manual and computer-based drawing and graphics.

COURSE DESCRIPTION:

In the first semester students will learn to use mathematics and physics as basic calculation tools in establishing the physical and dimensional qualities of a building.

In the second semester students will combine the knowledge learned in perspective and descriptive geometry, with seminars dedicated to 2d/3d computer modelling. Students will

COURSE FORMAT:

Lecture, Seminar. Drawing and drafting exercises by hand and on computer.

Assigned Reading, Assigned exercises, Independent Reading and Research. Seminar Work and Exam.

READING LIST:

Ching, Francis D.K. Design Drawing.

Ching, Francis D.K. Architectural Graphics.

Edwards, Betty. Drawing on the Right Side of the Brain.

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 2, Tools and Skills (2E)

Tools for Settlements:
The Essentials of Engineering and Planning

COURSE MISSION STATEMENT:

The course will teach the elementary principles of engineering, and the methods to make building structural and electro-mechanical systems efficient and sustainable. We will focus on the efficiency generated by the correct use of structural principles adapted to local building conditions and traditions as well as the implementation of renewable and eco-friendly systems and materials. Students will gain familiarity with a variety of codes and regulations, and a working knowledge of planning concepts such as the Transect. Students will also learn essential skills in presentation plans and drawings.

COURSE DESCRIPTION:

1. In the first semester students will learn basic analytical tools in urban planning as well as methods of urban analysis and coding (with an emphasis on the theory of the Transect).
2. In the second semester students will learn basic structural and electro-mechanical principles viewed from a holistic perspective of chronological development based on the evolution of science, materials, building technology and artistic expression and symbolism. During seminar work models of different structural systems will be made and tested using different materials. The tectonic and structural quality of different materials will be analysed and compared. (stone, wood, masonry, steel, concrete). Following the calculation methods learned in the previous year students will learn the basic calculation formulas and principles in determining the structural integrity and mechanics of different building elements (columns, beams, slabs, roofs) and systems (mechanical, electrical). The concepts of gravitational loads and seismic movement will be explained and tested on comprehensive models. Mechanical and electrical systems will be analysed and sized according to principles of best practice.

COURSE FORMAT:

Lecture, Seminar.
Assigned Reading, Assigned problems, Independent Reading and Research, Seminar Work and Exam.

READING LIST:

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 3, Tools and Skills (3E)

The Technology of Settlement:
Sites, Buildings, Details

COURSE MISSION STATEMENT:

The course will teach the basic principles of building structure, and the architectural details that make buildings skins and electro-mechanical systems efficient and sustainable. We will understand the efficiency generated by the correct use of architectural solutions adapted to local building conditions and traditions, as well as the implementation of renewable and eco-friendly systems and materials.

We will also gain a working knowledge of planning and mapping systems, including GIS.

COURSE DESCRIPTION:

1. In the first semester students will learn common architectural details, seen from a holistic perspective. We will learn about the chronological development of materials science, building technology and their relation to artistic expression and symbolism.

During seminar work, we will study and test models of different architectural details and building materials. We will examine the mechanical resistance, insulating coefficient, and hygroscopic qualities of different materials such as stone, wood, masonry, steel and concrete.

2. In the second semester students will learn the principles of electro-mechanical systems, and their correct use in eco-friendly and sustainable buildings. We will examine:

- Sewage and drainage, considered as a means of recycling water and reusing it rather than the disposing of polluted waste water in the general drainage systems;
- Natural ventilation and cooling systems, from a geographical and historical perspective, and solutions adapted to local climate conditions;
- Renewable energy for building systems (solar heat and electricity, geothermal heat, heat pumps, etc);
- The thermal efficiency of buildings, and how it can be managed through a variety of strategies.

COURSE FORMAT:

Lecture, Seminar.

Assigned Reading, Assigned problems, Independent Reading and Research, Seminar Work and Exam.

READING LIST:

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 4, Tools and Skills (4E1)

Sustainable Urban Economics:
From the Micro to the Macro

COURSE MISSION STATEMENT:

The course will teach the essential principles of economics from a local (microeconomic) and global (macroeconomic) perspective. Students will learn how a project can be made economically sustainable on the long term and how the real estate market can affect decisions taken in the planning process. The course will also cover European legislation to “harmonise” national procedures, and their effects on project economics.

DESCRIPTION:

How do economic forces affect the outcome of design and development projects? How can we exploit these processes to make better and more successful projects – and more sustainable ones?

We will learn about the workings of world economic systems, finance systems and their political contexts, from the perspective of the architect, planner and developer. We will focus on the effect that globalisation has on local markets and urban planning. Regional and national economical issues will be correlated with the harmonisation of European Union’s building, urban planning and environmental legislation and policies.

We will study the different economic parameters and challenges that influence the field of real estate, and how these can be correctly interpreted on a local and regional level, with the goal of producing sensitive, sustainable, problem-solving designs. EU policies will be compared to existing local, regional, and national legislation, and we will assess the connections between these.

COURSE FORMAT:

Lecture, Seminar.

Assigned Reading, Assigned problems, Independent Reading and Research, Seminar Work and Exam.

READING LIST:

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 4, Tools and Skills (4E2)

Project Management Tools:
Design, Economics and Law

COURSE MISSION STATEMENT:

The course will teach techniques of effective management and collaboration with the different parties involved in the planning, design and construction of complex projects: local administrative bodies, developers, owners, end users and others. Students will gain familiarity with advanced management tools such as economic analysis; flowcharts; spatial analysis systems; Space Syntax; GIS; coding systems; patterns and pattern books; and design-build systems.

DESCRIPTION:

The students will learn about the decision-making roles that various specialists take on in the design process, and the techniques and methods that they use. Following these insights, students will make simulations of different types of developments schemes, in which students will play the parts of developer, landlord, administrative bodies, planners, architects and other roles.

The different phases of the project will be analysed, quantified, and linked to the relevant decision makers for each phase:

- The management of the project will highlight the economic dimension of planning (sustainability, turnover, schedules, work costs, etc)
- The administrative body will focus on the legal issues within urban planning, concerning the legal permits as well as policies and regulations that are to be followed
- Planners will focus on the architectural and urban planning theories and tools needed in the design process,
- Owners will give assignments to the planning team, concerning the efficiency and sustainability of the project
- The end users will have a participatory role in the planning process, and give their feedback on the different phases of the project.

COURSE FORMAT:

Lecture, Seminar.
Role-playing simulations.

Assigned Reading, Assigned problems, Independent Reading and Research, Seminar Work and Exam.

READING LIST:

European Curriculum in Urbanism and Architecture
Course Outline

COURSE: Year 5, Tools and Skills (5E)

Tools for Best Practice:
Hard Skills and Soft Skills

COURSE MISSION STATEMENT:

The course will re-examine in greater depth topics previously covered in presentation and design documentation; structural, mechanical and civil engineering; architectural and urban design coding systems; and generative and collaborative design processes. Students will gain familiarity with advanced topics in these areas, and develop skills for additional life-long learning in rapidly-changing technologies.

DESCRIPTION:

Professionals in architecture and urban design must have an essential mastery of design documentation, engineering, coding and regulation, and collaborative design processes. At the same time, the technology is rapidly changing, and students need so-called “soft skills” to acquire new knowledge in the future.

In this course we will prepare an essential level of mastery for students about to enter professional practice. We will review advanced topics in developing fields, and gain an understanding of the underlying principles and trends. With this literacy, and with techniques for life-long learning, we will ensure that students are prepared to continue their own education and professional development in an increasingly dynamic and challenging professional environment.

COURSE FORMAT:

Lecture, Seminar.
Assigned Reading, Assigned problems, Independent Reading and Research. Exam.

READING LIST:

APPENDIX ONE: ESUA MISSION STATEMENT

The European School of Urbanism and Architecture recognizes that today we face an unprecedented combination of challenges, including the degradation of the natural environment, chaotic and uneven growth of the built environment, rampant globalization, erosion of local identity and heritage, and a disparity in economic and social opportunity. We realize that it is the role of schools to prepare professionals to take on these challenges, as they fulfill their timeless duty to create and maintain buildings and settlements which promote the health and well-being of humanity, today and for generations to come.

Today's professionals of the built environment need new skills and interdisciplinary approaches, combining advanced techniques, broad knowledge, and common-sense abilities. They must be prepared to be leaders and team players in their fields, and with other disciplines and sectors.

Therefore, the European School of Urbanism and Architecture offers a curriculum that includes:

- Immersive, project-based learning, both in the field and through studio simulations;
- Study of urbanism and architecture as an integrated discipline, with a focus on European contexts;
- Inter-disciplinary education combining science, history, philosophy, the arts, design, engineering, and construction;
- Rotating studies in different European locations, with diverse characteristics and challenges;
- Studies of the economic and social value of European local identity, and local European building traditions;
- Studies in European place-making as a means to preserve the rich cultural diversity of Europe during the unification process;
- Studies in sustainable building crafts and building processes;
- Analytical tools and inductive techniques for the study of existing conditions, assets and weaknesses, as an effective basis on which to learn and innovate in response to changing needs;
- Literacy and skills for new developments in rapidly-changing professional subject areas such as ecology and social science;
- “Hard” technical skills to meet real-world demands;
- “Soft” skills including problem solving, collaboration, leadership and facilitation, and “learning to learn” throughout life.

APPENDIX TWO: FOUNDATIONAL REFERENCES

The European School of Urbanism and Architecture is an integral part of an evolving reform movement within architectural and urban curricula, in response to widely-recognised new challenges. These include ecological, economic and social challenges, and organisational challenges particular to the European Union. Following is a partial list of the key foundational references that have been consulted extensively in the development of the ESUA curriculum.

Guide to the Bologna Process. The UK Higher Education Europe Unit, 2004.
<http://www.europeunit.ac.uk/resources/Guide%20to%20the%20Bologna%20Process%20booklet.pdf>

Building Community: a New Future for Architecture Education and Practice: A Special Report ("The Boyer Report.") Ernest L. Boyer and Lee D. Mitgang. Princeton, N.J.: Carnegie Foundation for the Advancement of Teaching, 1996.

Changing Architectural Education, Towards a New Professionalism, edited by David Nicol and Simon Pilling. London; New York: E & FN Spon, 2000.

The history of History in American Schools of Architecture, 1865-1975, edited by Gwendolyn Wright and Janet Parks. New York, N.Y.: Temple Hoyne Buell Center for the Study of American Architecture and Princeton Architectural Press, 1990. (Series: Buell Center books in American architectural history no. 1)

The Liberal Education of Architects: A Symposium Sponsored by the Graham Foundation for Advanced Studies in the Fine Arts. Lawrence, Kan. University of Kansas, School of Architecture and Urban Design

Windsor Forum on Design Education: Toward an Ideal Curriculum to Reform Architectural Education, Vero Beach, Florida, April 12-14, 2002. Stephanie E. Bothwell et. al. Miami, Fl.: New Urban Press, 2004.

The Teaching of Architecture and Urbanism in the Age of Globalisation: Proceedings of the 5-9 May 2003 Portugal Conference. Council for European Urbanism and International Network for Traditional Building, Architecture and Urbanism. Caleidoscopio, 2006.

APPENDIX THREE: MASTER READING LIST

Foundational Texts:

We regard these as foundational texts to which every student should have some exposure during the curriculum:

- Plato (ca. 360 BC), *The Republic*.
Aristotle (ca. 340 BC) *Politics*.
Vitruvius (ca. 0 AD). *The Ten Books of Architecture*.
Alberti, Leon Battista (1450). *On the Art of Building*.
Palladio, Andrea (1570). *The Four Books of Architecture*.
Pevsner, Nikolaus (1943). *An Outline of European Architecture*.
Pevsner, Nikolaus (1949). *Pioneers of Modern Design*.
Ruskin, John (1871). *The Seven Lamps of Architecture*.
Morris, William (1881). *The Prospects of Architecture in Civilization*.
Sitte, Camillo (1889). *City Planning According to Artistic Principles*.
Unwin, Raymond (1909). *Town Planning in Practice: An Introduction to the Art of Designing Cities*.
Howard, Ebenezer (1898). *To-morrow: A Peaceful Path to Real Reform*.
Le Corbusier (1924). *Towards a New Architecture*.
Gropius, Walter (1936). *The Scope of Total Architecture*.
Giedion, Sigfried (1941). *Space, Time and Architecture*.
Mumford, Lewis (1968). *The City in History: Its Origins, Its Transformations, and Its Prospects*.
Banham, Reyner (1960). *Theory and Design in the First Machine Age*.
Lynch, Kevin (1960). *The Image of the City*.
Jacobs, Jane (1961). *The Death and Life of Great American Cities*.
Norberg-Schulz, Christian (1963). *Intentions in Architecture*.
Pevsner, Nikolaus (1976). *A History of Building Types*.
Alexander, Christopher (1977). *A Pattern Language*.
Alexander, Christopher (2003). *The Nature of Order. Books I-IV*.
Porphyrios, Demetri (1982). *Classicism is not a Style*.
Frampton, Kenneth (1983). *Towards a Critical Regionalism: Six Points for an Architecture of Resistance*.
Oliver, Paul (1987). *Dwellings: The House across the World*.
Kostof, Spiro (1991). *The City Shaped: Urban Patterns and Meanings through History*.
Kostof, Spiro (1992). *The City Assembled: The Elements of Urban Form through History*.
Diamond, Jared (1997). *The Third Chimpanzee: The Evolution and Future of the Human Animal*.
Diamond, Jared (2001). *Guns, Germs and Steel: The Fates of Societies*.

Books Essential to the New Urbanism, by Duany Plater-Zyberk:

A Pattern Language
Christopher Alexander, et al.
The design equivalent of the Bible

Trees in Urban Design
Henry F. Arnold
The best manual on the subject

The Elusive City
Jonathan Barnett
A history of planning since the 18th Century written by a very experienced practicing planner

The Fractured Metropolis
Jonathan Barnett

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APPENDIX FOUR: LEXICON

The European School of Urbanism and Architecture project is a trans-national, cross-sector, inter-disciplinary educational programme. As such, there is a critical need for clear, agreed definitions of terms. But there is great variation in national and professional definitions, which can cause continuing confusion and conflict, severely compromising the ability to make effective collaborations.

In addition, new challenges such as climate change and globalisation have prompted varying and often confusing terms and definitions. Words like “sustainability,” “diversity,” even “urbanism,” beg their definitions and create intolerable inconsistencies in understanding and approach.

Therefore, the ESUA Lexicon establishes a clear set of definitions for many of these problematic terms. These definitions are subject to refinement and revision, but they establish a critical landmark of essential concepts for the curriculum.

Urbanism: Any human environment that includes two or more private structures together with a public or shared realm. Urbanism is most often a complex ordering of many layers of private, semi-private, semi-public and public space.

Architecture: The geometry of buildings, and in particular the relation of their parts to their wholes, and to the larger wholes of the city. Thus architecture is necessarily about the integrated relations between scales, including urban scales. Architecture is also therefore about decoration and sculptural art, but always integrated with the other scales of function and experience.

Planning: The definition of objectives at larger urban scales, together with the strategies for achieving them. Those strategies may include direct or “linear” plans for quantities and locations, or they may include more indirect strategies for creating incentives and other favorable conditions for a desired outcome. Planning usually includes the involvement of citizens and democratic processes in the definition of objectives and their achievement.

Education. The *educing* of knowledge and skills from a student, by means of an immersion in an environment of skilled and knowledgeable mentors, literature, study examples, and practice.

Architect-Urbanist. An inter-disciplinary professional, trained as a leader and facilitator in the construction and preservation of the built environment.

Sustainability. The ability to meet the needs of the present without compromising the ability of future generations to meet their needs. The ability to maintain a state or process essential to health and well-being indefinitely. Specifically, the ability to consume energy and resources without significant depletion, disruption or contamination.

Diversity (in neighborhoods). A wide variation in the qualities or attributes of size, type, cost, and fitness to a range of needs.

Hierarchy. An ordered grouping of parts into sets and supersets. In form, a ranking of parts such that certain parts encompass other parts and serve as points of connection.

Adaptivity. The ability of environments to respond to unique and changing needs over time, while remaining durable and useful.

Legibility. The characteristic of visual interpretability in an environment that allows ready identification of entries,

(Additional entries by Rich McLoughlin, Minnesota Chapter of the American Planning Association:)

WALKING DISTANCE - A distance comfortable for most people to walk, as an attractive alternative to driving. This distance is best represented as one quarter mile, 1,320 feet, or a five-minute walk.

Walking distance is a historic axiom of urban pattern, delimiting the French Quarter and the Neighborhood Unit described in the 1929 New York City Regional Plan. Current adaptations such as Traditional Neighborhood Development (TND) and Transit Oriented Development (TOD) also use a five-minute walking distance as a primary design determinant. A limited land mass, then, allows a complete neighborhood to be an incremental unit for urban evolution, as well as the sum of its constituent parts.

A complete neighborhood, in which the activities of daily living, including transit access, are within walking distance of a person's home, reduces the number of automobile miles traveled by its citizens. Were the same population to live in a conventional suburban development (CSD) pattern, where daily activities are separated beyond a comfortable walking distance, increased miles would be traveled, and therefore more thoroughfares and parking spaces would be needed. Traditional urban patterns integrate human activities through a rich mixture of landscape and building, allowing the walk from one destination to another to be a pleasant alternative to driving.

PEDESTRIAN CONTINUITY - An experiential quality created by a safe, comfortable and attractive network of pathways connecting frequently-visited destinations. The essential characteristics of pedestrian continuity are:

1. Each pathway's trajectory has a desirable or useful destination.
2. Frequent destinations are located in places that create a succession of five-minute walks.
3. The pathway network offer choices of route, and is logical, uninterrupted, and inclusive of shortcuts wherever possible.
4. The pathway's trajectory is spatially defined by interesting building architecture and landscape, and tempered by the local climate, providing shade when the air is hot and sun when the air is cool.
5. Pathways are protected from automobile traffic wherever possible.
6. Pathways are visually monitored by people in surrounding buildings, and therefore offer pedestrians a sense of safety.

TYOLOGY - A body of knowledge from which physical models can be evaluated and compared based on attributes of function, disposition, and configuration. Typology also refers to creation, evolution, and transformation of physical models to account for their usefulness over time. With regard to urban form, typological attributes include characteristics of public and private building, and the spaces that construction defines. Typology of urban form includes the following:

- Type - a physical form having defined attributes that could be emulated for other applications.
- Prototype - a first model, having attributes worth emulation and transformation in other applications.
- Archetype - the best known physical expression for a given set of typological attributes.
- Stereotype - the exaggeration, misuse or misunderstanding of typological attributes.

FUNCTION, DISPOSITION, AND CONFIGURATION - Three primary attributes associated with building typology and performance coding. In conventional suburban development, land and buildings are designated for a singular use or activity. In contrast, traditional neighborhood development integrates a range of activities, and is therefore can be better described by its building typology than by land use. For planning, TND controls prescribe architectural and urban forms according to the attributes of authentic building typology. Fundamentally, these controls are intended to maximize continuity and beauty within the public realm, and minimize influence on individual building use or interior design.

- TND Codes prescribe -- in written and graphic format -- performance criteria in terms of function, disposition, and configuration.
- Function - Existing or permitted uses for the building and its lot.
- Disposition - Existing or permitted horizontal placement of structures on building lots.
- Configuration - Three dimensional building form.

Community - A group of people distinguished by specific common interests and a means of communicating about them. The term embodies social, economic and political relationships among people as well as physical characteristics of their environment. However, community is more about relationships that bind people together than it is about environment. For example, a church congregation, parents of children attending the same school, and workers at a particular office are distinct communities, yet the individuals may live in different neighborhoods. In today's society, virtual communities are formed in a shared environment that may consist only of computer hardware, phone lines and data bytes. At the same time, those who inhabit a neighborhood are a community. They share a physical environment and a common interest in its future condition, as well as their own well-being. When neighbors communicate effectively about these interests, they may be referred to as a "community of place."

Countryside - An area designated as free of urbanization. Designation of countryside areas is the first step in regional planning, followed by the designation of corridors, neighborhoods and districts, in that order. The countryside contains primary conservation areas (wetlands, floodplains, steep slopes, prominent vistas and natural habitats) and secondary conservation areas (active agriculture, heritage sites and future parkland). Primary conservation areas are designated as permanent preserves, while secondary areas may be designated as temporary reserves for future development. All these areas should be identified on the basis of technical criteria and should be resistant to legal challenge so that their continued existence as amenities for local urbanized areas is ensured.

Corridor - A linear configuration that connects disparate areas of countryside through natural systems, or disparate neighborhoods through transportation systems. Corridors include natural and built components ranging from watershed flows to wildlife trails to rail lines. These should be considered public elements designed for physical continuity, including a larger network of connections between urban open spaces and the countryside.

Neighborhood - An urbanized area having a diverse range of building types, thoroughfares and public open spaces accommodating a variety of human activity. A neighborhood is a physical entity with typological attributes, and is the fundamental building block of urban form. Its appropriate size may best be described as an area in which most residents are within walking distance of its center. This distance is best represented as one-quarter mile, 1,320 feet, or a five-minute walk.

District - An urbanized area organized around a predominant human activity. Although districts preclude the full range of activities of a neighborhood, their primary activity is supported by typically neighborhood-scale uses. Examples include theater districts, medical facilities, capitol areas and college campuses. Other districts accommodate large-scale transportation or manufacturing uses such as airports, refineries, container terminals, distribution and warehousing sites, and "big-box" retail sites. Appropriate connections of special districts to adjacent neighborhoods encourages pedestrian access, support regional transit systems, and increase security.

Hamlet - A compact urban settlement within the countryside, with the essential characteristics of a complete neighborhood, but with few, if any, commercial services. Typically, a hamlet is a cluster of housing around an identifiable multiple-use or open space center, surrounded by countryside prairie, forest or active agriculture.

Village - A compact urban settlement within the countryside, with the essential characteristics of a complete neighborhood, including commercial services used on a daily basis. A village is larger than a hamlet, but smaller than a town, which has a broader range of commercial services throughout. Likewise, although the population of a village may vary, its land area also tends to be larger than a hamlet but smaller than a town.

Town - The aggregate of two or more complete neighborhoods with a central commercial area. Usually at the crossroads of major thoroughfares, the town center provides daily goods and services for neighborhood residents as well as visitors. Its urban character reflects the extension of pedestrian networks into adjacent neighborhoods, while also providing automobile parking.

City - The aggregate of two or more towns, specialized districts and connective transportation and open space corridors. When organized as a composite of complete neighborhoods, districts and corridors, a city appears and functions organically, evolves in an orderly fashion, and preserves environmental resources as sustainable community amenities.

Sprawl - Haphazard outward growth in a disorderly fashion. Urban sprawl is the antithesis of traditional development patterns.

COMPLETE COMMUNITY: Following are ten principles considered essential to a complete, traditional neighborhood, new or existing. They are meant to be used as both a prescriptive format for design and a checklist for compliance. For authenticity, each neighborhood should have at least nine of these principles articulated in physical form. In later articles these principles will be described individually in greater detail, with attention to their typological attributes and their capacity to foster the positive social, political, and economic relationships necessary for a "sense of community"

A. An area of 40 to 160 acres. Development of a complete, walkable neighborhood is best accommodated in an area this size.

- B. A minimum density of eight residential units per acre (twenty to the hectare). A critical mass of citizens in close proximity to daily services and activities is necessary for mutual support between local residents and businesses.
- C. An internal balance of housing, jobs and services. A complete, self-sufficient neighborhood requires many buildings housing a variety of daily activities within its boundaries.
- D. An identifiable neighborhood center. The neighborhood center is both a civic focus and informal place of gathering for the community.
- E. Designated sites for civic buildings. Buildings such as schools, libraries, museums, assembly halls, places of worship, and day care centers occupy the most prominent places in the neighborhood and should be planned in coordination with public open spaces.
- F. A variety of public open spaces. Natural and landscaped open spaces are for the use, benefit, and enjoyment of the entire community.
- G. A hierarchy of interconnected streets. Complete neighborhoods contain streets of different traffic characteristics and that connect with one another and are terminated by other streets.
- H. Streets for both people and cars. Neighborhood streets are public places comfortably and deliberately accommodating many modes of transportation, including pedestrians and bicyclists.
- I. Many separate and distinct buildings. Small lot platting and a variety of buildings not more than four stories in height generate a cohesive urban pattern.
- J. Outbuildings as affordable housing units. Outbuilding residences on single family lots offer high quality, well maintained housing for residents of limited income or special needs.

APPENDIX FIVE: SURVEY OF EXISTING SCHOOLS AND CURRICULA

NOT INCLUDED IN THIS DRAFT